



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

And

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT: K2019315211 (SOUTH AFRICA) (PTY) LTD
(hereinafter referred to as 'the Company')

TEL NO: 084 400 0086 – Mr. G. Michaelides

FAX NO: 086 534 2076

POSTAL ADDRESS: POSTNET SUITE 147, PRIVATE BAG X8, NORTHRIDING, 2162

PHYSICAL ADDRESS: 76 OLIVE CREST ESTATE, 288 QUORN DRIVE, NORTH RIDING, 2162

FILE REFERENCE NUMBER SAMRAD: (NC) 30/5/1/1/2/12395 PR

IMPORANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining “will not result in unacceptable pollution, ecological degradation or damage to the environment”.

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme Report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of Section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of Section 17(1)(c) the Competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the Competent Authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices.) The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

The objective of the basic assessment process is to, through a consultative process:-

- a) determine the policy and legislative context within which the proposed activity is located and document how the activity complies with and responds to the policy and legislative context;
- b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternative focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;
- d) determine the:
 - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to inform identified preferred alternatives; and
 - (ii) the degree to which these impacts:-
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be managed, avoided or mitigated;
- e) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
- f) identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;
- g) identify suitable measure to manage, avoid or mitigate identified impacts; and
- h) identify residual risks that need to be managed and monitored.

PART A
SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

Contact Person and correspondence address:

a) Details of:

i) The EAP who prepared the report:

Name of the Company: M and S Consulting (Pty) Ltd
Name of the Practitioner: Ms. T. Jooste
Tel No: 053 861 1765
Fax No: 086 636 0731
E-Mail address: ms.consulting@vodamail.co.za
Physical Address: 36 William Street, Kestellhof, Kimberley, 8301
Postal Address: P.O. Box 2473, Kimberley, 8300

(hereinafter referred to as M&S)

(i) Expertise of the EAP:

(1) The qualifications of the EAP:

(With evidence attached as Appendix 1)

- Environmental Management Certificate
- Eleven years professional experience, in terms of Section 15(1) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), Section 24H Registration Authority Regulations as published on 22 July 2016 under Government Gazette No. 40154 (849).

(2) Summary of the EAP's past experience:

(Attach the EAP's curriculum vitae as Appendix 2)

Relevant past experiences in carrying out the Environmental Impact Assessment Procedures include Environmental Impact Assessments, Environmental Management Plans / Programmes / Reports, Performance Assessments, Rehabilitation Progress Assessments, Environmental Liability Assessments, Environmental Compliance Monitoring, Scoping Reports, etc.

b) Description of the property:

Farm Name:	Portion 2 of the Farm Bishop 671 Portion 3 of the Farm Bishop 671 (Hereinafter collectively referred to as 'Bishop')
Application area (Ha)	1 504.6560 Hectares
Magisterial district:	Kuruman
Distance and direction from nearest town	Bishop is situated approximately 30km south-west of the town of Kathu in the Northern Cape Province. Access to the site is via the R325 between Postmasburg and Kathu.
21 digit Surveyor General Code for each farm portion	C0410000000067100002 C0410000000067100003

c) **Locality Map:**
(show nearest town, scale not smaller than 1:250 000 attached as Appendix 3)

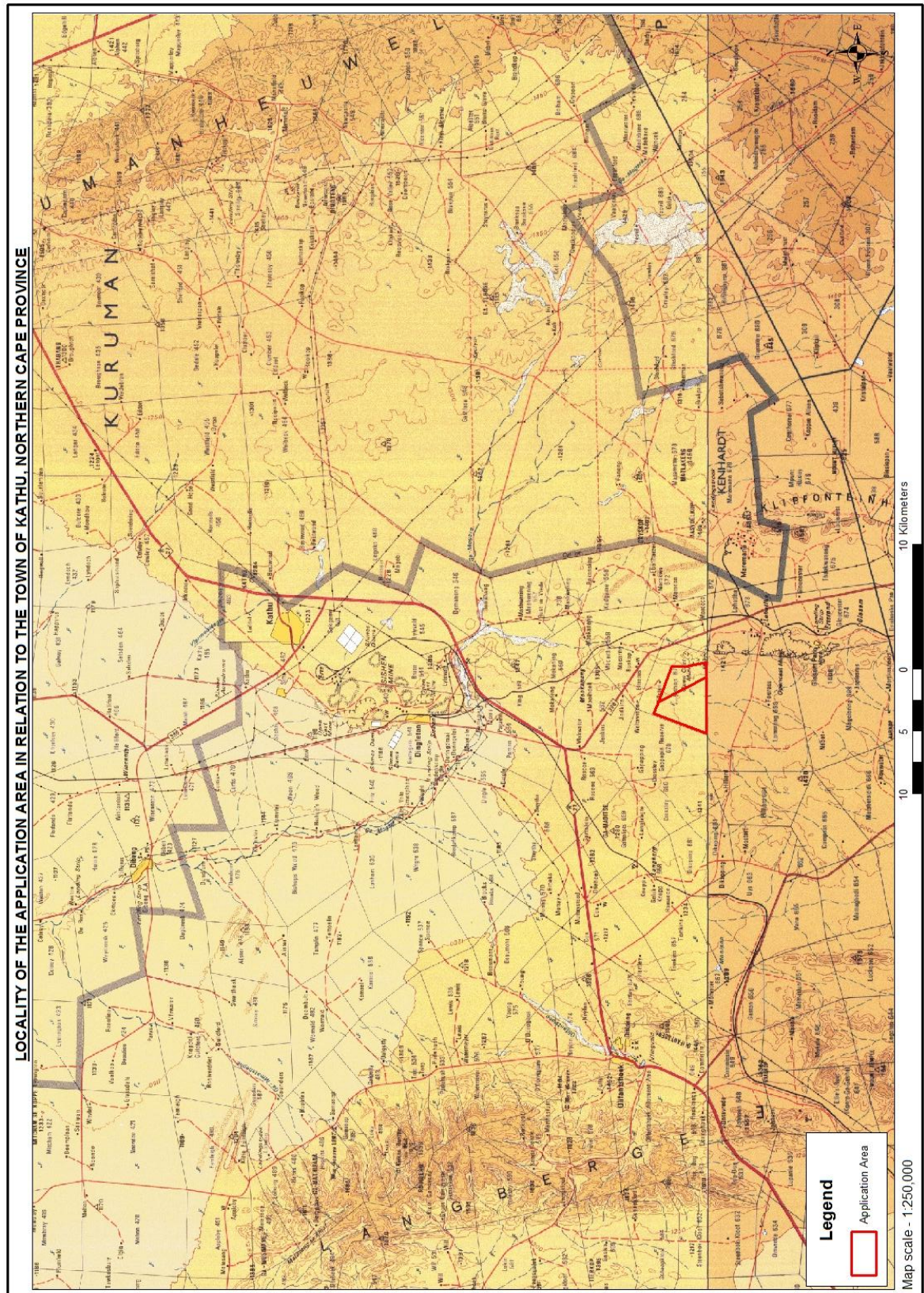


Figure 1 – Locality Map

d) Description of the scope of the proposed overall activity:

(Provide a plan drawn to a scale acceptable to the competent authority but not less than 1:10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site)

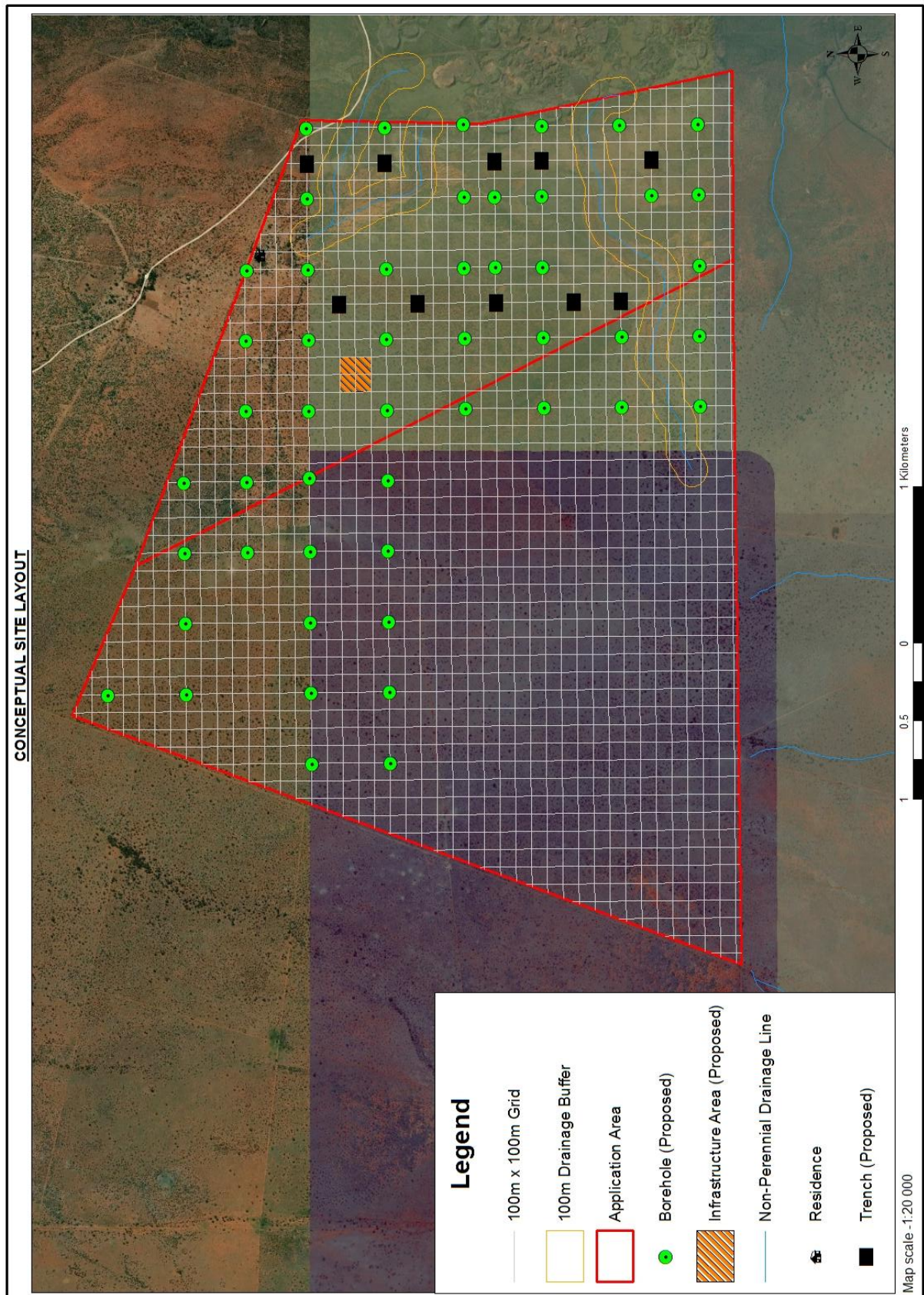


Figure 2 – Conceptual site layout plan

i) Listed and specified activities:

Name of activity (e.g. Excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)		Aerial extent of the activity (Ha or m ²)	Listed Activity (mark with an X where applicable or affected)	Applicable Listing Notice (GNR544, GNR545 or GNR546 / Not listed)
1	Blasting: Approximately 120kg of explosives is placed in one blast hole. The tons of explosives consumed per month depend completely on the number of blasts the Company conducts.	The size of the blasts will be directly affected by the geology of the deposit.	X	GNR633: Activity 15 GNR327: Activity 19 GNR327: Activity 20 GNR327: Activity 27 GNR327: Activity 30 GNR325: Activity 15 GNR325: Activity 19
2	Boreholes 50 boreholes with a 10m x 10m surface disturbance each	50 x 10 x 10 = 0.5 Ha	X	GNR327: Activity 20 GNR327: Activity 27 GNR327: Activity 30
3	Chemical toilets: Mobile chemical toilets shall be utilized.	2m x 3m =6m ² each	X	GNR327: Activity 20
4	Diesel tanks: It is anticipated that the operation will utilize 1 x 24 000 litre (24m ³) diesel tank. The tank must be placed in bund walls, with a capacity of 1.5 times the volume of the diesel tank. A concrete floor must be established where the re-fuelling will take place.	10m x 20m = 200m ²	X	GNR327: Activity 14 GNR327: Activity 20 GNR325: Activity 19
5	Excavations: The excavation process will be initiated by drilling of blast holes. These holes will then be blasted where after the ore will be loaded from the open excavations and hauled to the processing plant.	Provision is made for a maximum footprint of 0.38 hectares of open excavations at any one time.	X	GNR633: Activity 15 GNR704 GNR327: Activity 19 GNR327: Activity 20 GNR327: Activity 24 GNR327: Activity 27 GNR327: Activity 30 GNR327: Activity 56 GNR325: Activity 15 GNR325: Activity 19 GNR325: Activity 27

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6	<p>Generator: It is anticipated that the operation will utilize generators for its operation. These generators must be placed in bund walls, with a capacity of 1.5 times the volume of the generators.</p>	5m x 5m = 25m ² each	X	<p>GNR704 GNR327: Activity 20 GNR325: Activity 19</p>
7	<p>Offices: Mobile containers will be utilized as offices.</p>	3m x 6m = 18m ² each	X	<p>GNR327: Activity 20 GNR325: Activity 19</p>
8	<p>Processing plant: Iron Ore It is anticipated that the plant will consist of the following: - VGF + Primary JAW Crusher - Double Deck Screen</p>	100m x 50m = 0.5Ha	X	<p>GNR633: Activity 15 GNR704 GNR327: Activity 9 GNR327: Activity 20 GNR327: Activity 24 GNR327: Activity 27 GNR327: Activity 30 GNR327: Activity 56 GNR325: Activity 19 GNR325: Activity 27</p>
9	<p>Processing plant: Manganese Ore It is anticipated that the plant will consist of the following: - VGF + Primary JAW Crusher - Primary Double Deck Screen</p>	100m x 50m = 0.5Ha	X	<p>GNR633: Activity 15 GNR704 GNR327: Activity 9 GNR327: Activity 20 GNR327: Activity 24 GNR327: Activity 27 GNR327: Activity 30 GNR327: Activity 56 GNR325: Activity 19 GNR325: Activity 27</p>
10	<p>Roads (both access and haulage road on the site): Although it is recommended that the operation utilize existing roads as far as possible, it is anticipated that the operation will create 500m of roads, with a width of 10m each and more than one lane of traffic in both directions. The locality of these roads will be determined by the geology of the area (excavation areas) and the locality of the infrastructure.</p>	500m x 10m wide = 0.5Ha	X	<p>GNR327: Activity 20 GNR327: Activity 24 GNR327: Activity 27 GNR327: Activity 30 GNR327: Activity 56 GNR325: Activity 19 GNR325: Activity 27</p>
11	Salvage yard (fenced)	20m x 50m = 0.1 Ha	X	<p>GNR327: Activity 20 GNR325: Activity 19</p>

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12	Stockpile area	Provision is made for a maximum footprint of 0.2 hectares for the stockpile area at any one time.	X	GNR327: Activity 20 GNR327: Activity 27 GNR325: Activity 19
13	Wash bay	20m x 30m = 600m ²	X	GNR327: Activity 20 GNR325: Activity 19
14	Waste rock dumps	Provision is made for a maximum footprint of 0.1 hectares for waste rock dumps at any one time.	X	GNR633: Activity 15 GNR704 GNR327: Activity 19 GNR327: Activity 20 GNR327: Activity 27 GNR327: Activity 30 GNR325: Activity 19
15	Water tank: It is anticipated that the operation will establish 2 x 10 000 litre water tanks with purifiers for potable water.	3m x 3m = 9m ² each	X	GNR327: Activity 20 GNR325: Activity 19
16	Weighbridge	3m x 20m = 60m ²	X	GNR327: Activity 20 GNR325: Activity 19
17	Weighbridge control room – Mobile container	3m x 6m = 18m ²	X	GNR327: Activity 20 GNR325: Activity 19
18	Workshop: It is anticipated that the operation will make use of mobile containers for their workshop facilities. This area will also include a compressor area and tyre bay.	3m x 6m = 18m ² each	X	GNR327: Activity 20 GNR325: Activity 19
Full description of listed activities applied for:				
GNR633 Activity 15	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008); Category A: The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a prospecting right or mining permit in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).			
GNR704	Regulations published on 4 June 1999 in terms of the National Water Act, 1998 (Act No. 36 of 1998).			
GNR327 Activity 9	The development of infrastructure exceeding 1 000 meters in length for the bulk transportation of water or storm water:- i) with an internal diameter of 0.36 meters or more; or ii) with a peak throughput of 120 litres per second or more.			
GNR327 Activity 12	The development of:- i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or ii) infrastructure or structures with a physical footprint of 100 squares metres or more;			

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	<p>where such development occurs:-</p> <p>a) within a watercourse;</p> <p>b) in front of a development setback; or</p> <p>c) if no development setback exists, within 32 meters of a watercourse, measured from the edge of the watercourse.</p>
GNR327 Activity 14	The development and related operation of facilities or infrastructure, for the storage, or the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.
GNR327 Activity 19	The infilling or depositing of any material of more than 10 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic meters from a watercourse.
GNR327 Activity 20	<p>Any activity including the operation of that activity which requires a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including-</p> <p>(a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or</p> <p>(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;</p> <p>but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.</p>
GNR327 Activity 24 (ii)	The development of a road:- (ii) with a reserve wider than 13.5 meters, or where no reserve exists where the road is wider than 8 meters.
GNR327 Activity 27	<p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for:-</p> <p>i) the undertaking of a linear activity; or</p> <p>ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p>
GNR327 Activity 30	Any process or activity identified in terms of Section 53(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).
GNR327 Activity 56 (ii)	<p>The widening of a road by more than 6 meters, or the lengthening of a road by more than 1 kilometre:-</p> <p>i) where the existing reserve is wider than 13.5 meters; or</p> <p>ii) where no reserve exists, where the existing road is wider than 8 meters;</p>
GNR325 Activity 15	<p>The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for:-</p> <p>i) the undertaking of a linear activity; or</p> <p>ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p>
GNR325 Activity 19	The removal and disposal of minerals contemplated in terms of Section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including-

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	(a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.
GNR325 Activity 27	The development of a road:- i) with a reserve wider than 30 meters; or ii) catering for more than one lane of traffic in both directions.

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(ii) Description of the activities to be undertaken:

(Describe methodology or technology to be employed, including the type of commodity to be mined and for a linear activity, a description of the route of the activity.)

- Description of planned non-invasive activities:
(These activities do not disturb the land where prospecting will take place)

Phase 1:

In order to direct the exploration programme in an efficient manner, there will be a review of all available information and data gathered by previous exploration on the farm. A desktop study will be undertaken of the mineral potential of the area.

A site investigation of the target areas will be undertaken to identify infrastructure and determine any potential problems that may need to be addressed.

Any anomalous features identified will be mapped in detail. The various rock types and their contacts will also be mapped.

Phase 3:

Drill samples will be collected in one-meter intervals and logging will be done by a qualified geologist who will record the lithology, mineralogy, degree of mineralization and structural features. Mineralized samples will be analyzed at an internationally recognized (ISO certified) laboratory.

- Description of planned invasive activities:
(These activities result in land disturbances where prospecting will take place)

Phase 2: Percussion drilling

Percussion drilling will be used initially to identify the position of a suspected base metal deposit. The position of the boreholes is dependent on the results of the review of historical activities, geological mapping, desktop study and geophysical survey.

Fifty boreholes, each 50m deep (can be more or less depending on results), are planned. The collar position of all boreholes will be surveyed. All drilling will be short term and undertaken by a contractor using truck-mounted equipment.

Angled percussion holes are planned to locate and intersect the mineralization. A traverse line or grid drilling is used to identify and define the extent of any mineralization. The sizes of the boreholes drilled will be determined by such factors as cost, proposed sampling, availability of drilling machines and the volume of sample required, among others.

Phase 4: Bulk sampling

Bulk sampling will be conducted during phase 4 of the prospecting operation for a period of 19 months.

The Company plans to bulk sample a total volume of 47 500m³ of ore. For exploration purposes 23 750³ of iron ore will be bulk sampled and 23 750³ of manganese ore will be bulk sampled.

- Iron Ore:
 - Stripping ratio = 1:1
 - S.G. Iron Ore = 4.0
 - S.G. Overburden = 2.5
 - 23 750m³ x 4 = 95 000 tonnes

- Manganese Ore:
 - Stripping ratio = 1:1
 - S.G. Manganese Ore = 4.0
 - S.G. Overburden = 2.5
 - 23 750m³ x 4 = 95 000 tonnes

Bulk sampling will be conducted at a rate of 10 000 tonnes of final (sellable) tonnes per month. With the 1:1 stripping ratio the total tonnes excavated per month calculates to 20 000 tonnes.

20 000 tonnes / month x 19 months = 380 000 tonnes total excavated for the prospecting period of which 190 000 tonnes will be final (sellable) ore.

The bulk sampling will be conducted with a yellow fleet consisting of:

- 1 x 80T Excavator
- 1 x 30T Excavator
- 3 x ADT
- 2 x Front End Loader
- 1 x 500kVA Generator
- 2 x Mobile Crushing & Screening Plants (1 for iron ore & 1 for manganese ore)

Employment for the operation shall include:

- 1 x Site Manager
- 1 x Operations Manager
- 2 x Supervisors
- 4 x Plant Operators
- 10 x Machine Operators
- 2 x General Labourers
- Security

e) Policy and Legislative Context:

Applicable Legislation and Guidelines used to compile the report <small>(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.)</small>	Reference where applied
Atmospheric Pollution Prevention Act (Act 45 of 1964) and Regulations	<ul style="list-style-type: none"> - Sections 27 – 35: Dust control - Sections 36 – 40: Air pollution by fumes emitted by vehicles.
Conservation of Agricultural Resources Act (Act 43 of 1983) and Regulations	<ul style="list-style-type: none"> - Section 6: Implementation of control measures for alien and invasive plant species.
Constitution of South Africa (Act 108 of 1996)	<ul style="list-style-type: none"> - Chapter 2: Bill of Rights - Section 24: Environmental rights - Section 25: Rights in Property
Environment Conservation Act (Act 73 of 1989) and Regulations	<ul style="list-style-type: none"> - Section 19 and 19A: Prevention of littering by employees and sub-contractors during construction and maintenance phases of the proposed project. - Sections 21, 22, 25, 26 and 28: EIA Regulations, including listed activities. - Section 28A: Exemptions.
Fencing Act (Act 31 of 1963)	<ul style="list-style-type: none"> - Section 17: States that any person erecting a boundary fence may clean any bush along the line of the fence up to 1.5m on each side thereof and remove any tree standing in the immediate line of the fence. However, this provision must be read in conjunction with the environmental legal provisions relevant to protection of flora.
Hazardous Substances Act (Act 15 of 1973) and Regulations	<ul style="list-style-type: none"> - Definition, classification, use, operation, modification, disposal or dumping of hazardous substances.
Intergovernmental Relations Act (Act 13 of 2005)	<ul style="list-style-type: none"> - This Act establishes a framework for the National, Provincial and Local Governments to promote and facilitate intergovernmental relations.
Mine, Health and Safety Act (Act 29 of 1996) and Regulations	<ul style="list-style-type: none"> - The Act
Mineral and Petroleum Resources Development Act (Act 28 of 2002) and Regulations	<ul style="list-style-type: none"> - The Act
Mineral and Petroleum Resources Development Act (Act 49 of 2008)	<ul style="list-style-type: none"> - The Act

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National Environmental Management Act (Act 107 of 1998) as amended and Environmental Impact Assessment Regulations, 2014	<ul style="list-style-type: none"> - Section 2: Strategic environmental management goals and objectives. - Section 24: Foundation for Environmental Management frameworks. - Section 28: The developer has a general duty to care for the environment and to institute such measures to demonstrate such care.
National Environmental Management: Air Quality Act (Act 39 of 2004)	<ul style="list-style-type: none"> - Section 32: Control of dust - Section 34: Control of noise - Section 35: Control of offensive odours
National Environmental Management: Biodiversity Act (Act 10 of 2004)	<ul style="list-style-type: none"> - Sections 65 – 69: These sections deal with restricted activities involving alien species; restricted activities involving certain alien species totally prohibited; and duty of care relating to alien species. - Sections 71 and 73: These sections deal with restricted activities involving listed invasive species and duty of care relating to listed invasive species.
National Environmental Management: Protected Areas Act (Act 57 of 2003)	<ul style="list-style-type: none"> - The Act
National Environmental Management: Waste Management Act (Act 59 of 2008)	<ul style="list-style-type: none"> - Chapter 4: Waste management activities
National Forest Act (Act 84 of 1998) and Regulations	<ul style="list-style-type: none"> - Section 7: No person may cut, disturb, damage or destroy any indigenous, living tree in a natural forest, except in terms of a licence issued under Section 7(4) or Section 23; or an exemption from the provisions of this subsection published by the Minister in the Gazette. - Sections 12 – 16: Deals with protected trees, with the Minister having the power to declare a particular tree, a group of trees, a particular woodland, or trees belonging to a certain species, to be a protected tree, group of trees, woodland or species. - Section 15: No person may cut, disturb, damage, destroy or remove any protected tree; or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister.
National Heritage Resources Act (Act 25 of 1999) and Regulations	<ul style="list-style-type: none"> - Section 34: No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority. - Section 35: No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site.

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	<ul style="list-style-type: none"> - Section 36: No person may, without a permit issued by SAHRA or a provincial heritage resources authority destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a forma cemetery administered by a local authority. - Section 38: This section provides for HIA which are not already covered under the ECA. Where they are covered under the ECA the provincial heritage resources authorities must be notified of a proposed project and must be consulted during HIA process.
National Water Act (Act 36 of 1998) and Government Notice No. 704 of 1991	<ul style="list-style-type: none"> - Section 4: Use of water and licensing. - Section 19: Prevention and remedying the effects of pollution. - Section 20: Control of emergency incidents.
Nature Conservation Ordinance (Ord 19 of 1974)	<ul style="list-style-type: none"> - Chapters 2, 3, 4 and 6: Nature reserves, miscellaneous conservation measures, protection of wild animals other than fish, protection of Flora.
Northern Cape Nature Conservation Act (Act 9 of 2009)	<ul style="list-style-type: none"> - Addresses protected species in the Northern Cape and the permit application process related thereto.
Occupational Health and Safety Act (Act 85 of 1993) and Regulations	<ul style="list-style-type: none"> - Section 8: General duties of employers to their employees. - Section 9: General duties of employers and self-employed persons to persons other than their employees.
Road Traffic Act (Act 93 of 1997) and Regulations	<ul style="list-style-type: none"> - The Act
Water Services Amendment Act (Act 30 of 2007)	<ul style="list-style-type: none"> - It serves to provide the right to basic water and sanitation to the citizens of South Africa.
Basic Conditions of Employment Act (Act 3 of 1997)	<ul style="list-style-type: none"> - To control employment aspects
Basic Conditions of Employment Amendment Act (Act 11 of 2002)	<ul style="list-style-type: none"> - Amendments to BCEA
Community Development (Act 3 of 1966)	<ul style="list-style-type: none"> - To promote community development
Development Facilitation (Act 67 of 1995)	<ul style="list-style-type: none"> - To provide for planning and development
Development Facilitation (GN24, PG329, 24/07/1998)	<ul style="list-style-type: none"> - Regulations re Northern Cape LDO's
Development Facilitation (GNR1, GG20775, 07/01/2000)	<ul style="list-style-type: none"> - Regulations re application rules S26, S46, S59
Development Facilitation (GN732, GG14765, 30/04/2004)	<ul style="list-style-type: none"> - Determines amount, see S7(b)(ii)
Land Survey Act (Act 8 of 1997)	<ul style="list-style-type: none"> - To control land surveying, beacons etc.
Land Survey Act (GNR1130, GG18229, 29/08/1997)	<ul style="list-style-type: none"> - Agriculture, land survey S10
National Veld and Forest Fire Act (Act 101 of 1998)	<ul style="list-style-type: none"> - To regulate law on veld and forest fires

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National Veld and Forest Fire Act (GN1775, GG22527, 01/08/2001))	- Draft Regulations S21
Municipal Ordinance, 20/1974	- To control pollution, sewers etc.
Municipal Ordinance, PN955, 29/08/1975	- Nature conservation Regulations
Cape Land Use Planning Ordinance, 15/85	- To control land use planning
Cape Land Use Planning Ordinance, PN1050, 05/12/1988	- Land use planning Regulations
Planning and Development Act (Act 7 of 1998)	- To control planning and development

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f) Need and desirability of the proposed activities:

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location.)

In terms of the Environmental Impact Assessment Regulations, 2014 (GG38282, Government Notice No. R.982) the need and desirability of any development must be included in the relevant reports to be submitted to the competent authority.

Assessment of the geological information available has determined that the area in question may have various mineral targets. In order to ascertain the above and determine the nature, locality and extent of the mineral targets within the prospecting area, it will be necessary that prospecting be undertaken. The prospecting will also determine if there are any features that may have an impact on the economic extraction of the minerals.

The information that will be obtained from the prospecting to be done will be necessary to determine, should the minerals be found, how and where the minerals will be extracted and how much economically viable mineral reserves are available within the proposed prospecting area.

Should the minerals applied for be found in the application area, the Company will be able to ensure employment opportunities and support to the local business for a certain period.

The Company expects that substantial benefits from the project (should the minerals applied for be found) will accrue to the immediate project area, the sub-region and the Northern Cape Province. These benefits must be offset against the costs of the project, including the impact to the surface owner.

g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site:

NB!! - This section is about the determination of the specific site layout and the location of infrastructure and activities on the site, having taken into considerations the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

(i) Details of the development footprint alternatives considered:

With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

(a) The property on which or location where it is proposed to undertake the activity:

The registered description of the land to which the prospecting right application relates:

Farm Name	Title Deed	In Extent
Portion 2 of the Farm Bishop 671	T1207/1991	985.0118 Ha
Portion 3 of the Farm Bishop 671	T1207/1991	519.6442 Ha

Alternatives considered:-

The Company has considered the following alternatives:

- The Geological formation that supports the possibility that the minerals applied for could be found within the area.
- The availability of farms within the area that is not already occupied by existing prospecting or mining rights.
- The availability of infrastructure, such as a road network, in the immediate surrounding area, which could be utilized to allow easy access to the site.

Taking the above into consideration, the Company opted to apply for the properties as above.

(b) The type of activity to be undertaken:

Prospecting activities for Iron Ore and Manganese Ore are to take place in the form of percussion drilling and bulk sampling.

Alternatives considered:-

The only alternative land use is livestock farming; however the Company's main economic activity is prospecting / mining and for this reason does not favour any other alternative land use.

(c) The design or layout of the activity:

The Company plans to establish the following, amongst other, infrastructure on the site during the initial construction phase:

- Ablution facilities (chemical toilets)
- Diesel tank
- Generator
- Offices (mobile containers)
- Processing Plant Fe
- Processing Plant Mn
- Roads (access & haul)
- Salvage Yard
- Security access point
- Stockpile area
- Storage facilities (mobile containers)
- Washbay
- Water tanks (drinking water)
- Weighbridge
- Weighbridge control room (mobile container)
- Workshops (mobile containers)

Alternatives considered:-

The final locality of the above infrastructure can only be determined after the reconnaissance visit, desktop study, geological mapping and drilling phases has been finalised. The following features will be taken into account during the planning phase:

- Locality of any residential buildings;
- Locality of the ore bodies;
- Topography of the area;
- Environmental features such as non-perennial drainage lines; and
- Discussions with the surface owner of the land.

(d) The technology to be used in the activity:

A percussion drill rig will be used during phase 2 of the prospecting activities.

Both the iron ore and manganese ore processing plant will be modular. Both of these plants will consist of a JAW crusher, double-deck screen and cone crusher. The process will be as follows:

The Run of Mine (ROM) is hauled to the dry crushing and screening plant. An excavator with a hydraulic hammer attachment is used to break down the +500mm ore.

The ore (-500mm) is fed into the VGF which then feeds the JAW crusher. The JAW crushes the ore down to -180mm. The crushed ore is then fed to a double deck screen which screens the ore into two sizes:

- +20mm -100mm (lumpy); and
- -20mm +1mm (fines)

The resultant product is accumulated into a product stockpile and waste is loaded, hauled and dumped at waste dumps/backfilling/road making. The final product is transported by road to the market.

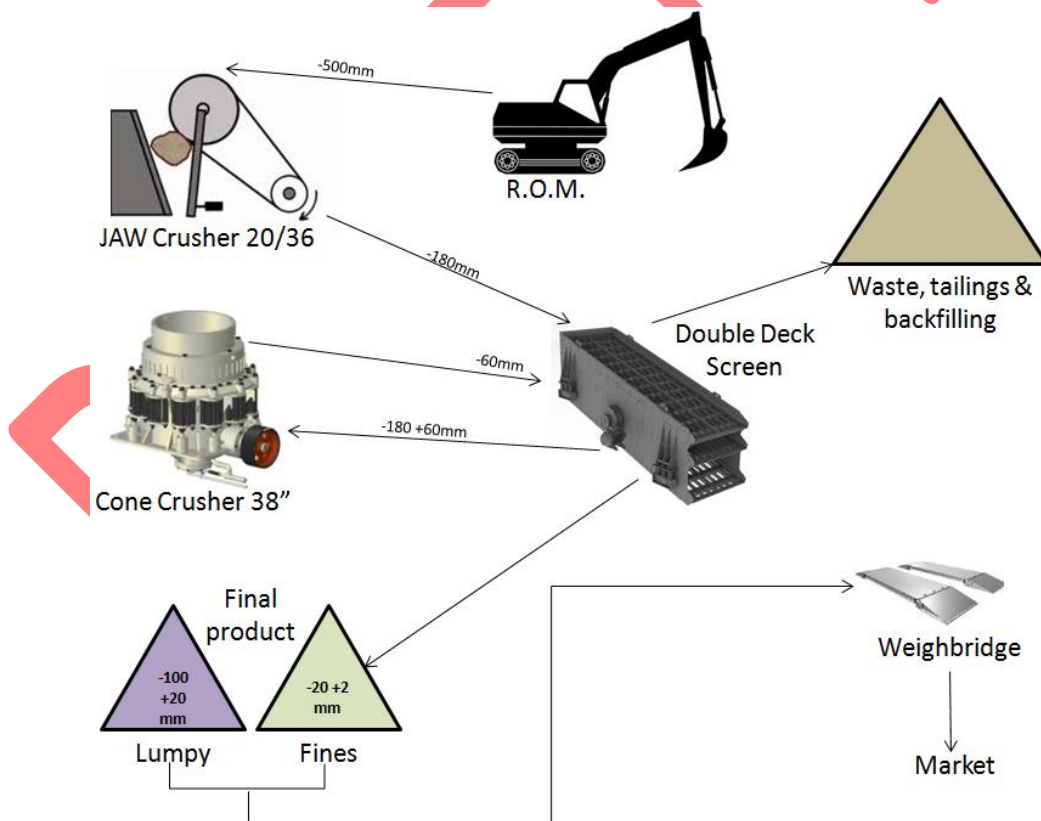


Figure 3 – Processing Plant Flow

Alternatives considered:-

Drilling: The utilization of a core drill rig during phase two was considered; however this type of drill uses water to keep the core bit of the drilling rig cool. The Company aims to minimize its impact on the environment as much as possible and thus has opted not to impact on the groundwater resource through the utilization of a core drill.

Bulk sampling: The only alternative considered was the processing of ore only using a wet processing method (JIG / DMS). The Fe grade at Bishop is expected to be 62%; whilst the Mn grade is expected at 28% and for this reason beneficiation of the ore to ensure grade is not anticipated to be required. Should the need arise to beneficiate the ore, the Company shall apply in terms of Section 102 of the MPRDA for an amendment of the relevant documentation.

(e) The operational aspects of the activity:

Bulk sampling will be done by the conventional opencast method. It is designed based on the nature of the ore-bodies on the site, which proposes that each resource area be treated as a separate pit. Bulk sampling can be done on two ore bodies at any one time.

Where present vegetated soil overlying the planned excavation area is to be stripped prior to bulk sampling and stockpiled on a dedicated (temporary) dump to be used for rehabilitation purposes at a later stage.

A haul road network will provide access to the opencast excavation areas and to the dry (modular) crushing & screening plants (Fe & Mn).

Alternatives considered:-

The conventional opencast drill-blast-load-haul-mining method has been proven to be the most cost effective method in the Northern Cape Province and for this reason no viable alternatives were identified.

(f) The option of not implementing the activity:

Five measures of economic impacts can be used to demonstrate the potential effect of the proposed prospecting operation on the local economy:

- Employment - The extent of employment can be measured as number of jobs or in terms of full time equivalents.
- Payroll income - The gross remuneration of employees in terms of salaries and wages.
- Capital Expenditure (CAPEX) - The total amount spent on the purchasing of fixed assets and total spent on construction.
- Operating expenditure and maintenance (OPEX) - The total amount spent locally by businesses on goods and services, excluding salaries and wages as well as rents or interest.
- Revenue - The total value of sales arising from business activity at the prospecting operation.

The abovementioned positive impacts will be lost if the proposed prospecting project is not developed.

(ii) Details of the Public Participation Process Followed:

(Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings. Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.)

The following interested and / or affected parties were identified:

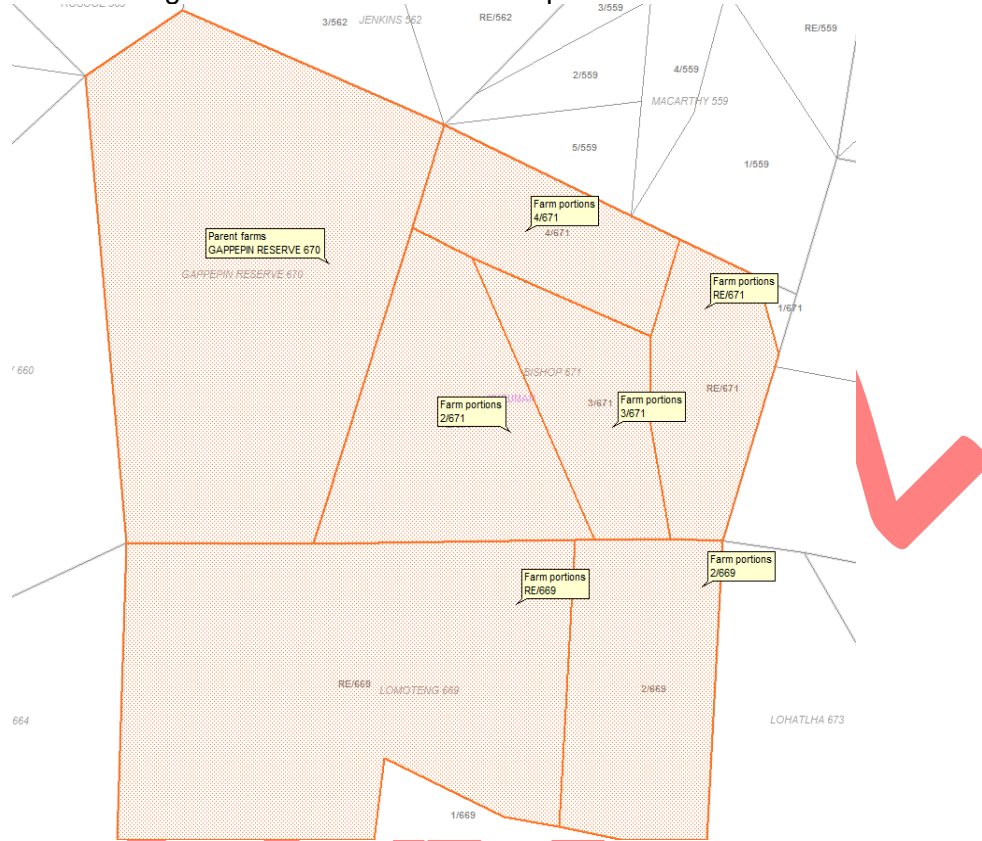


Figure 4 - Adjacent surface owners

Interested and / or Affected Party	Description	Interest in Project
Surface Owner	Property	Description
Eric Charles Peter Stanton	Portion 2 of the Farm Bishop 671	Surface Owner
Eric Charles Peter Stanton	Portion 3 of the Farm Bishop 671	Surface Owner
Adjacent Surface Owner		
Hilliard Trust	Remaining Extent of the Farm Lomoteng 669	Surrounding Owner
Davca Trust	Portion 2 of the Farm Lomoteng 669	Surrounding Owner
Danelle Familie Trust	The Farm Gappepin Reserve 670	Surrounding Owner
PMG Mining (Pty) Ltd	Remaining Extent of the Farm Bishop 671	Surrounding Owner
Kameeldoom 99 Boerdery CC	Portion 4 of the Farm Bishop 671	Surrounding Owner
Municipality		Description
Tsantsabane Local Municipality	-	Local Municipality
ZF Mgcau District Municipality	-	District Municipality
Infrastructure		
ESKOM	-	Parastatal
SANRAL	-	National Agency
Transnet	-	Parastatal
Government Department		
Department: Agriculture, Land Reform & Rural Development	-	Government Department
Department: Environment and Nature Conservation	-	Government Department
Department: Public Works	-	Government Department
Department: Rural Development and Land Reform	-	Government Department
Department: Water Affairs	-	Government Department
Surrounding Mining Operations		
Huatian S.A. Mining and Investment (Pty) Ltd	-	Mine adjacent
Heritage		
SAHRA	-	Administrative Body
Other		
None identified	-	

Identified interested and/or affected parties were notified as follows:

- Notification letters were sent to all identified interested and / or affected parties on the 23rd of September 2019. Attached to each of these letters was a draft Scoping Report, containing information relating to the proposed project.
- A newspaper advert was placed in the 'Kathu Gazette' local newspaper on the 28th of September 2019.
- A newspaper advert was placed in the 'Volksblad' regional newspaper on the 27th of September 2019.

Proof of notification is attached as Appendix '5'.

Surface Owner:

- A meeting was held with Mr. Stanton on the 22nd of October 2019 to discuss the proposed prospecting activities. The following pertained from the meeting:
 - Compensation for surface use.
 - Mr. Stanton's lawyer, Da Silva, must be used for any contracts.
 - The geological report must be provided to Mr. Stanton before drilling or bulk sampling can take place.
 - Weighing of old dumps upon removal thereof from the site.

Proof of consultation with the surface owner is attached as Appendix '6'.

Other responses received:

- PMG Mining:
 - PMG requested to be registered as an interested and/or affected party.
 - PMG requested a copy of the draft EIA/EMPR document to which they will provide comments. The EIA/EMPR document was provided.
- SAHRA:
 - Heritage Impact Assessment is required;
 - Assessment of impacts to heritage resources should be conducted as part of the EA process; and
 - Desktop Palaeontological Impact Assessment is required.

Responses received are attached as Appendix '7'.

Environmental Impact Assessment Report and Environmental Management Programme Report
K2019315211 (South Africa) (Pty) Ltd

(iii) Summary of issues raised by I&AP's

(Complete the table summarising comments and issues raised, and reaction to those responses.)

Interested and Affected Parties <small>List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.</small>	Date comments received	Issues raised	EAPs response to the issue of the I&AP	
AFFECTED PARTIES				
Landowner/s	X			
Mr. E.C.P. Stanton	X	22/10/2019	<ul style="list-style-type: none"> ▪ Compensation for surface use. ▪ Mr. Stanton's lawyer, Da Silva, must be used for any contracts. ▪ The geological report must be provided to Mr. Stanton before drilling or bulk sampling can take place. ▪ Weighing of old dumps upon removal thereof from the site. 	Refer to minutes of the meeting attached under Appendix '6'.
Lawful occupier/s of the land				
N/A	X			
Landowners or lawful occupiers on adjacent properties	X			
Hilliard Trust	X	N/A	No response to date.	
Davca Trust	X	N/A	No response to date.	
Danelle Familie Trust	X	N/A	No response to date.	
PMG Mining (Pty) Ltd	X	30/10/2019	<ul style="list-style-type: none"> ▪ PMG requested to be registered as an interested and/or affected party. ▪ PMG requested a copy of the draft EIA/EMPR document to which they will provide comments. 	M&S confirmed that PMG has been placed on the IAP register. A copy of the draft EIA/EMPR has been provided to PMG for perusal and comment.
Kameeldoorn 99 Boerdery CC	X	N/A	No response to date.	
Municipal Councillor	X			
Tsantsabane Local Municipality	X	N/A	No response to date.	
Municipality	X			
ZF Mgcawe District Municipality	X	N/A	No response to date.	

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Organs of State (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA, etc.)				
Eskom	X	N/A	No response to date.	
SANRAL	X	N/A	No response to date.	
Transnet	X	N/A	No response to date.	
Communities				
Not applicable: There are no known communities in the immediate vicinity of the prospecting right application area.				
Department of Land Affairs				
Department: Agriculture, Land Reform and Rural Development	X	N/A	No response to date.	
Traditional Leaders				
Not applicable: There are known no communities, with Traditional Leaders, in the immediate vicinity of the prospecting right application area.				
Department of Environmental Affairs				
Department: Environment and Nature Conservation	X	N/A	No response to date.	
Other Competent Authorities				
Department: Public Works	X	N/A	No response to date.	
Department: Water Affairs	X	N/A	No response to date.	
Department: Rural Development and Land Reform	X	N/A	No response to date.	
OTHER INTERESTED / AFFECTED PARTIES				
Huatian S.A. Mining and Investment (Pty) Ltd	X	N/A	No response to date.	
SAHRA	X	21/02/2020	Interim Comment: <ul style="list-style-type: none"> • Heritage Impact Assessment is required; • Assessment of impacts to heritage resources should be conducted as part of the EA process; and • Desktop Palaeontological Impact Assessment is required. 	The HIA and revised BAR was provided to SAHRA for further comment on the 18 th of March 2020.

The consultation process has been captured until ... 2020.

(iv) **The Environmental attributes associated with the alternatives:**
(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects.)

(1) Baseline Environment:

(a) Type of environment affected by the proposed activity:
(its current geographical, physical, biological, socio-economic and cultural character.)

- **Air quality:**

While many factors affect the precipitation rate, the main factors are related to wind velocity, air humidity, particulate size and dynamic shape, and prevailing ground cover.

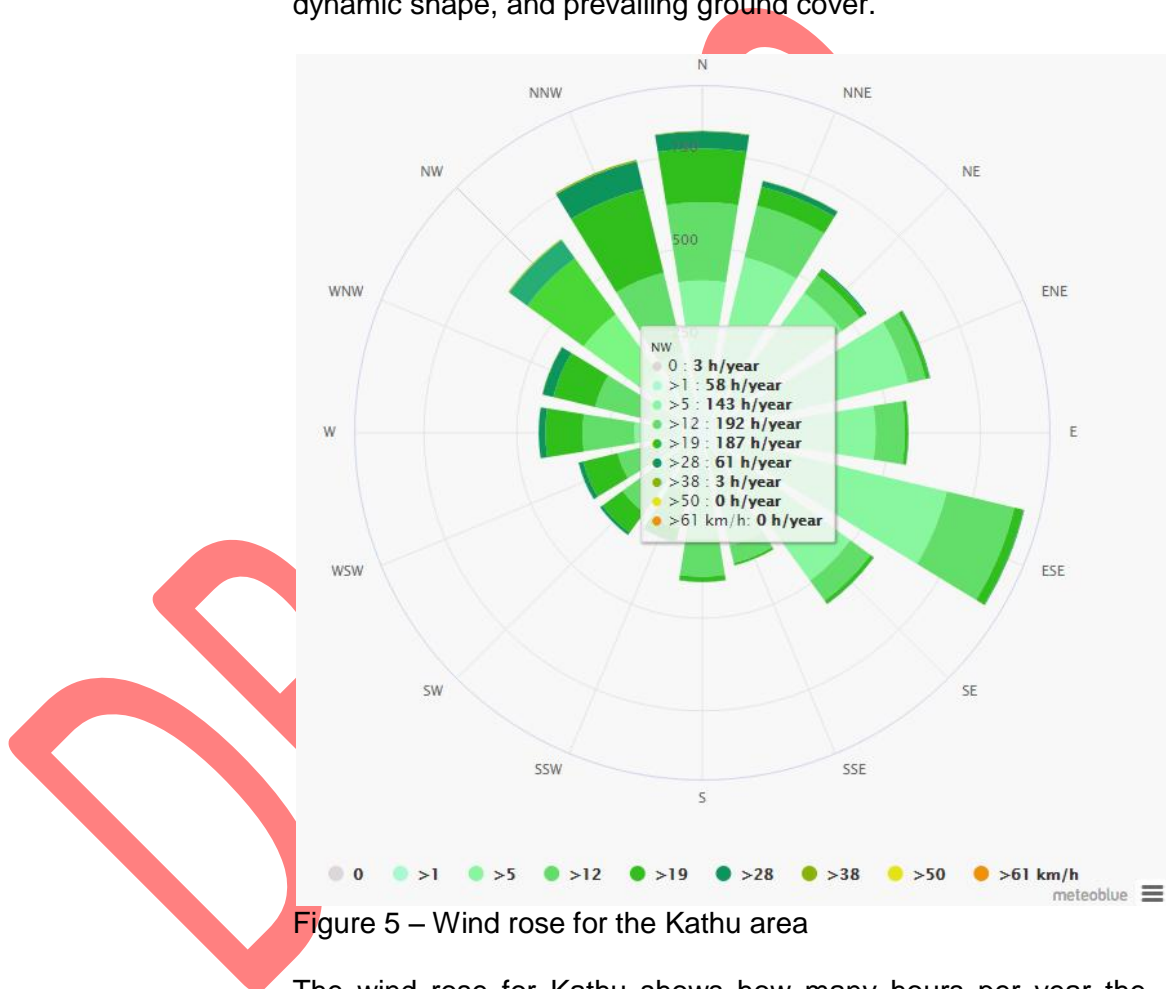


Figure 5 – Wind rose for the Kathu area

The wind rose for Kathu shows how many hours per year the wind blows from the indicated direction. Example SW: Wind is blowing from South-West (SW) to North-East (NE).

The diagram for Kathu shows how many days within one month can be expected to reach certain wind speeds. Monsoons create steady strong winds from December to April, but calm winds from June to October.

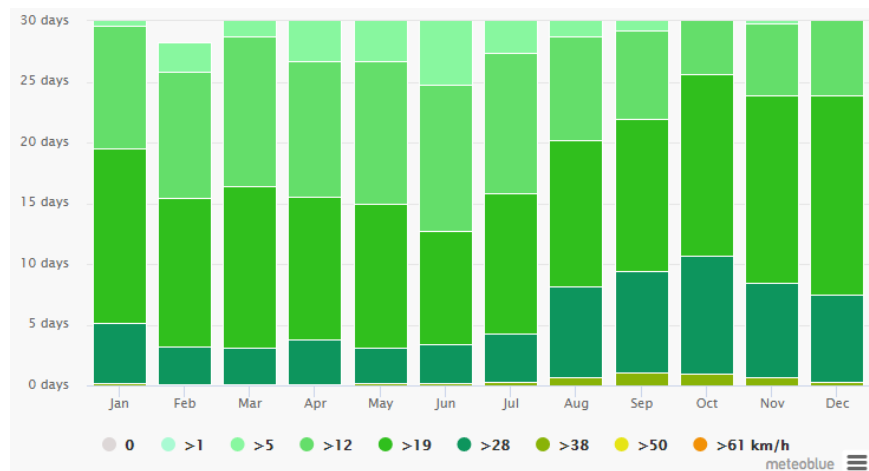


Figure 6 – Wind speed in the Kathu area

Current sources of air pollution in the area stems mainly from:

- Mining operations in close proximity of the application area:
 - Huatian S.A. Mining and Investment (Pty) Ltd – Lomoteng Mine.
- Dust from the secondary (public) and gravel (farm) roads transecting the properties.
- Dust induced by wind and wind gusts.

• **Archaeological, cultural & heritage environment:**

The online PalaeoSensitivity Map of SAHRA has been used to determine the sensitivity of the application area.

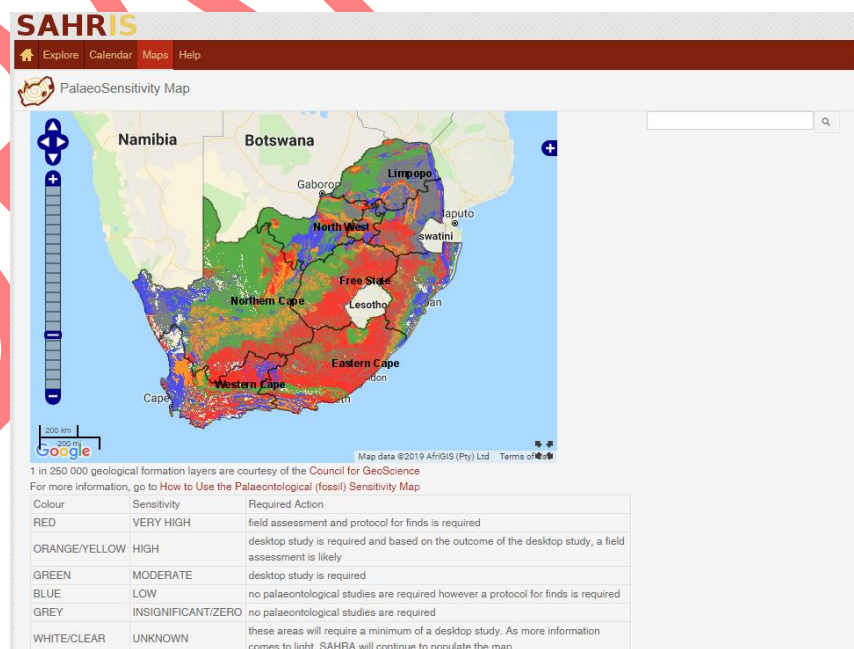


Figure 7 - Overview of PalaeoSensitivity Map of SAHRA

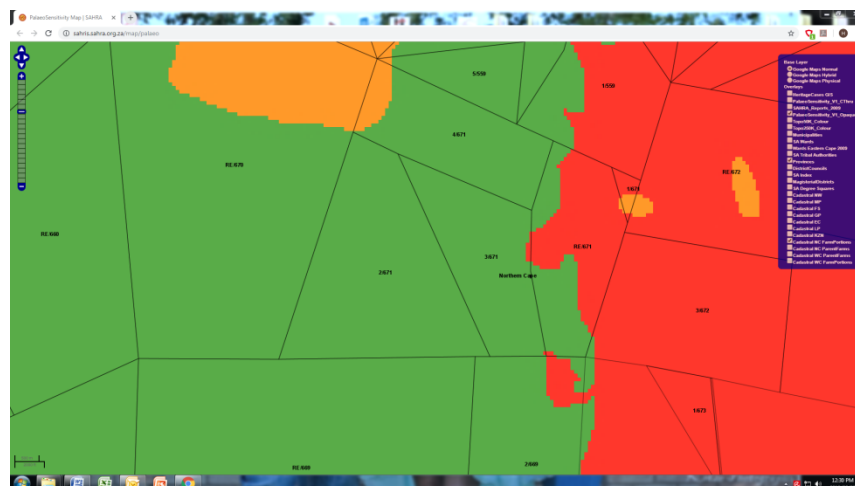


Figure 8 - PalaeoSensitivity Map of Bishop

In terms of the online PalaeoSensitivity Map as well as the Interim Comment from SAHRA a desktop study should be undertaken before any prospecting activities may commence. Palaeontologist, Dr. John Almond, has been contacted to assist with the PIA Report. This report shall only be available in the middle of May 2020 as Dr. Almond is currently out of the country. K2019315211 (South Africa) (Pty) Ltd undertakes that the desktop study shall be undertaken before any prospecting activities commence.

Archaeologist, Stephan Gaigher of G&A Heritage Management Consultants, has been appointed to compile a Heritage Impact Assessment (HIA) Report for this project. Below is a summary of the findings of this report:

“The study area was found to be basically devoid of any significant heritage sites. Some stone tools were observed but for the most part these were out of context and none of the identified tools comprised an occupation or occupational site.

A single family graveyard was noted at the farm homestead, however this area will not be affected by the proposed development and as such the development does not pose any significant threat to this heritage site.

The palaeontological significance of the site is low since it is overlain in most part by the Kalahari Group which is not conducive to the formation and preservation of fossils. The manganese deposits in the northern corner of the study area could be more sensitive and if mining is proposed in that area, a field based PIA is recommended. Although the northern section has a higher paleontological value, the impacts of the prospecting would still be minimal, however it should be noted that no specialist Palaeontological Assessment was done.

Due to the small footprint of the proposed prospecting activities it is not anticipated that this will have any significant impact on heritage resources. The presence of scattered stone tools do

however indicate the possible occurrence of such sites in other areas of the mining lease and should the prospecting lead to a mining rights application it is recommended that the whole area be subjected to a high resolution heritage impact assessment.”

- **Climate:**

The area is located in a semi-arid region, receiving on average about 250mm of rain per annum. The rainfall is largely due to showers and thunderstorms falling in the summer months October to march. The peak of the rainy season is normally March or February. The summers are very hot with cool winters.

The meteoblue climate diagrams are based on 30 years of hourly weather model simulations and available for every place on Earth. They give good indications of typical climate patterns and expected conditions (temperature, precipitation, sunshine and wind). The simulated weather data have a spatial resolution of approximately 30 km and may not reproduce all local weather effects, such as thunderstorms, local winds, or tornadoes.

The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month for Kathu. Likewise, "mean daily minimum" (solid blue line) shows the average minimum temperature. Hot days and cold nights (dashed red and blue lines) show the average of the hottest day and coldest night of each month of the last 30 years.

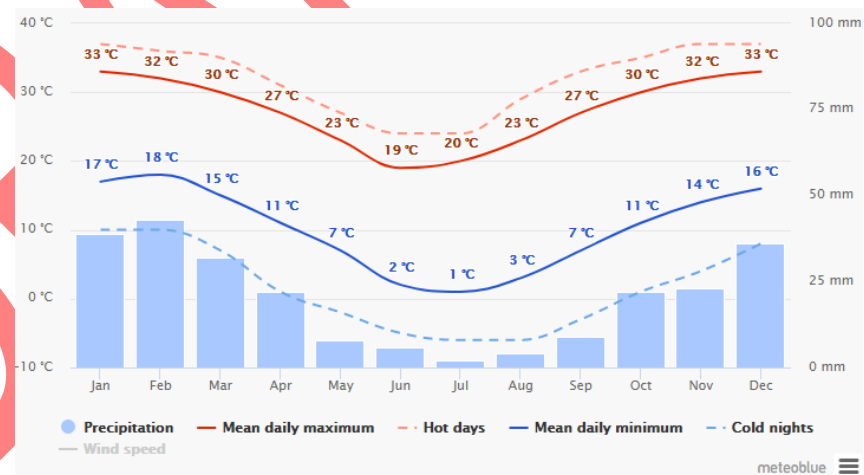


Figure 9 – Average temperatures and precipitation

The graph shows the monthly number of sunny, partly cloudy, overcast and precipitation days. Days with less than 20% cloud cover are considered as sunny, with 20-80% cloud cover as partly cloudy and with more than 80% as overcast.

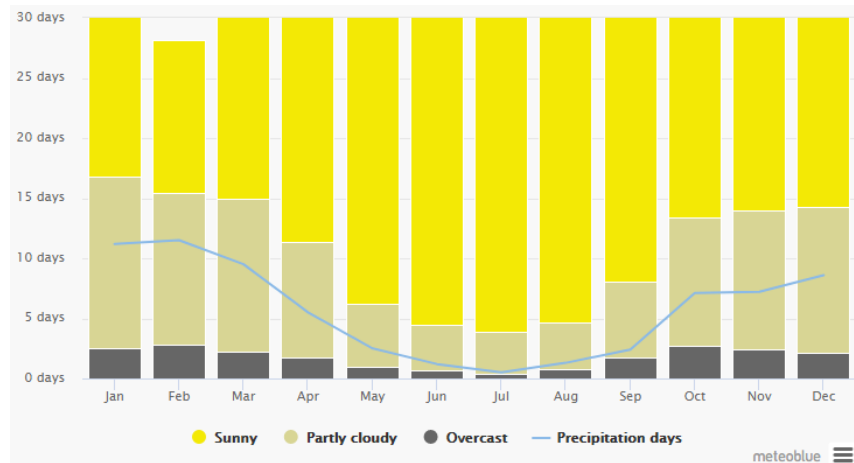


Figure 10 - Cloudy, sunny and precipitation days

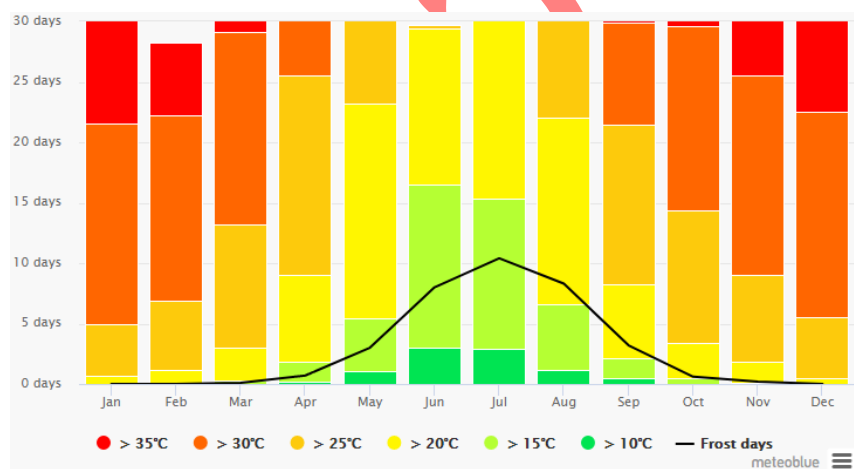


Figure 11 - Maximum temperatures of the Kathu area

The maximum temperature diagram for Kathu displays how many days per month reach certain temperatures.

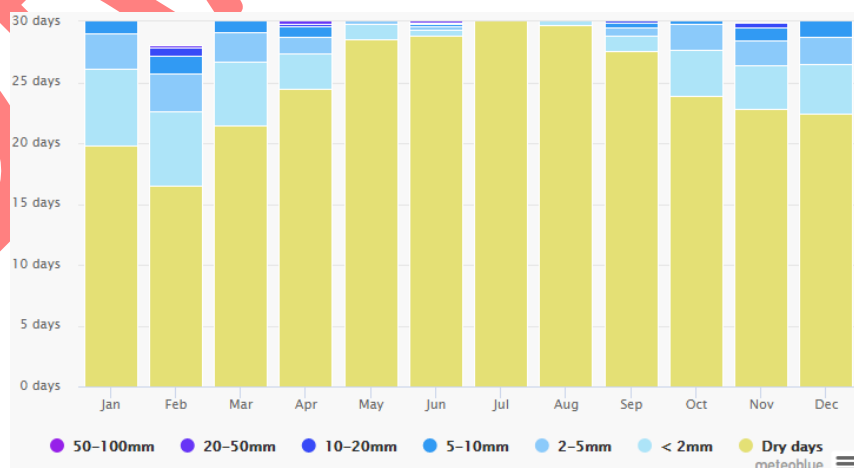


Figure 12 - Precipitation amounts for the Kathu area

The precipitation diagram for Kathu shows on how many days per month, certain precipitation amounts are reached.

- **Fauna:**

Most large antelope species are absent from the area, although nomad game like Blesbok, Gemsbok, Duiker, Kudu, Steenbok and Springbok occasionally traverse the properties.

The normal array of small mammals and birds that are associated with the Kuruman Thornveld Vegetation Type, Kuruman Mountain Bushveld Vegetation Type, Kathu Bushveld Vegetation Type and Olifantshoek Plains Thornveld Vegetation Type might be expected.

- **Flora:**

There are four vegetation types found on the properties:

- Kuruman Thornveld (SVk 9):
 - Tall Tree: *Acacia erioloba* (d).
 - Small Trees: *Acacia mellifera* subsp. *detinens* (d), *Bosica albitrunca* (d).
 - Tall Shrubs: *Grewia flava* (d), *Lycium hirsutum* (d), *Tarchonanthus camphorates* (d), *Gymnosporia buximolia*.
 - Low Shrubs: *Acacia hebeclada* subsp. *hebeclada* (d), *Monechma divaricatum* (d), *Gnidia polycephala*, *Helichrysum zeyheri*, *Hermannia comosa*, *Pentzia calcarea*, *Plinthus sericeus*.
 - Geoxylic Suffrutex: *Elephantorrhiza elephantine*.
 - Graminoids: *Aristida meridionalis* (d), *A. stipitata* subsp. *stipitata* (d), *Eragrostis lehmanniana* (d), *E. echinochloidea*, *Melinis repens*.
 - Herbs: *Dicoma schinzii*, *Gisekia africana*, *Harpagophytum procumbens* subsp. *procumbens*, *Indigofera daleoides*, *Limeum fenestratum*, *Nolletia ciliaris*, *Seddera capensis*, *Tripteris aghillana*, *Vahlia capensis* subsp. *vulgaris*.

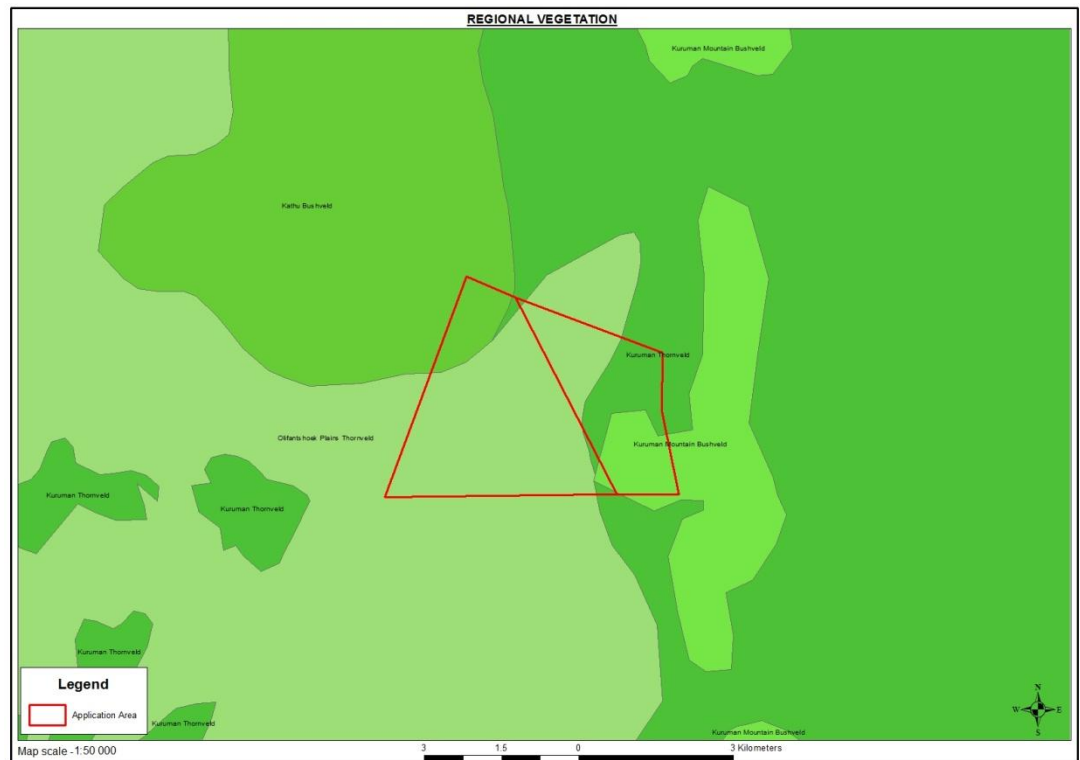


Figure 13 - Regional Vegetation Map

- Kuruman Mountain Bushveld (SVk10):
 - Small Tree: *Rhus lancea*.
 - Tall Shrubs: *Diospyros austro-africana*, *Euclea crispa* subsp. *crispa*, *E. undulata*, *Olea europaea* subsp. *africana*, *Rhus pyroides* var. *pyroides*, *R. tridactyla*, *Tarchonanthus camphoratus*, *Tephrosia longipes*.
 - Low Shrubs: *Rhus ciliate* (d), *Amphiglossa triflora*, *Anthospermum rigidum* subsp. *pumilum*, *Gomphocarpus fruticosus* subsp. *fruticosus*, *Helichrysum zeyheri*, *Lantana rugosa*, *Wahlenbergia nodosa*.
 - Succulent Shrubs: *Ebracteola wilmaniae*, *Hertia pallens*.
 - Herbaceous Climber: *Rhynchosia totta*.
 - Graminoids: *Andropogon chinese* (d), *A. schirensis* (d), *Antheophora pubescens* (d), *Aristida congesta* (d), *Digitaria eriantha* subsp. *eriantha* (d), *Themeda triandra* (d), *Triraphis andropogonoides* (d), *Aristida diffusa*, *Brachiaria nigropedata*, *Bulbostylis burchellii*, *Cymbopogon caesius*, *Diheteropogon amplectens*, *Elionurus muticus*, *Eragrostis chloromelas*, *E. nindensis*, *Eustachys paspaloides*, *Heteropogon contortus*, *Melinis repens*, *Schizachyrium sanguineum*, *Trichoneura grandiglumis*.
 - Herbs: *Dicoma anomala*, *D. schinzii*, *Geigeria ornativa*, *Helichrysum cerastioides*, *Heliotropium strigosum*, *Hibiscus marlothianus*, *Kohautia cynanchica*, *Kyphocarpa angustifolia*.
 - Geophytic Herbs: *Boophone districha*, *Pellaea calomelanos*.

- Kathu Bushveld (SVk 12):
 - Tall Tree: *Acacia erioloba* (d).
 - Small Trees: *Acacia mellifera* subsp. *detinens* (d), *Boscia albitrunca* (d), *Terminalia sericea*.
 - Tall Shrubs: *Diospyros lycioides* subsp. *lycioides* (d), *Dichrostachys cinerea*, *Grewia flava*, *Gymnosporia buxifolia*, *Rhigozum brevispinosum*.
 - Low Shrubs: *Aptosimum decumbens*, *Grewia retinervis*, *Nolletia arenosa*, *Sida cordifolia*, *Tragia dioica*.
 - Graminoids: *Aristida meridionalis* (d), *Brachiaria nigropedata* (d), *Centropodia glauca* (d), *Eragrostis lehmanniana* (d), *Schmidtia pappophoroides* (d), *Stipagrostis ciliata* (d), *Aristida congesta*, *Eragrostis biflora*, *E. chloromelas*, *E. heteromera*, *E. pallens*, *Melinis repens*, *Schmidtia kalahariensis*, *Stipagrostis uniplumis*, *Tragus berteronianus*.
 - Herbs: *Acrotome inflata*, *Erlangea misera*, *Gisekia africana*, *Heliotropium ciliatum*, *Hermbstaedtia fleckii*, *H. odorata*, *Limeum fenestratum*, *L. viscosum*, *Lotononis platycarpa*, *Senna italica* subsp. *arachoides*, *Tribulus terrestris*.
- Olifantshoek Plains Thornveld (SVk 13):
 - Tall Tree: *Acacia erioloba*.
 - Small Trees: *Boscia albitrunca* (d), *Acacia mellifera* subsp. *detinens*, *Terminalia sericea*.
 - Tall Shrubs: *Lessertia frutescens*, *Lycium hirsutum*, *Rhigozum obovatum*, *Rhus tridactyla*, *Tarchonanthus camphoratus*.
 - Low Shrubs: *Aptosimum procumbens*, *Grewia retinervis*, *Hoffmannseggia burchellii*, *Lycium pilifolium*, *Solanum tomentosum*.
 - Succulent Shrubs: *Lycium cinereum*, *Talinum cafferum*.
 - Graminoids: *Schmidtia pappophoroides* (d), *Stipagrostis uniplumis* (d), *Aristida congesta*, *Brachiaria serrata*, *Digitaria eriantha* subsp. *eriantha*, *Melinis repens*.
 - Herbs: *Acanthosicyos naudinianus*, *Gisekia pharnacioides*, *Hermannia tomentosa*, *Ipomoea magnusiana*, *Oxygonum delagoense*, *Pollichia campestris*, *Tephrosia purpurea* subsp. *leptostachya*.
 - Succulent Herb: *Piaranthus decipiens*.
 - Geoxylic Suffrutex: *Elephantorrhiza elephantina*.

- **Geology:**

The Postmasburg iron & manganese field is situated on the Maremane Anticline dome, which is located within the Kaapvaal Craton, although close to its western margin. The country rocks are Palaeoproterozoic metasediments of the Transvaal Supergroup. Two arcuate belts of deposits extend from Postmasburg in the south to Sishen in the north. Two major ore types are present. The ferruginous type of ore is composed mainly of braunite, partidgeite and bixbyite and occurs along the centre of the Gamagara Ridge, or Western belt. The siliceous

type of ore consists of braunite, quartz and minor partidgeite and occurs in deposits along the Klipfontein Hills (or Eastern belt) and the northern and southern extremities of the Gamagara Ridge. Dolomites of the Campbellrand Group form the basement rock for these deposits and are overlain by the Manganore Iron-Formation and the Gamagara Formation. The dolomite palaeosurface is karsted, leading to collapse structures where iron and manganese formation has fallen into karst cavities to form the well-known Wolhaarkop Breccia body.

Geological and geochemical evidence suggest that the manganese ores represent weakly metamorphosed wad deposits that accumulated in karst depressions during a period of lateritic weathering and karstification in a supergene, terrestrial environment during the Late Paleoproterozoic period. The dolomites of the Campellrand Group of the Transvaal Supergroup are host and source for the wad accumulations. The ore at Bishop originated as pods and lenses of wad in chert breccia that accumulated in a karst cave system capped by the hematitized Manganore iron-formation of the Transvaal Supergroup. The cave system finally collapsed and the hematitized iron-formation slumped into the sinkhole structures. The manganese ore were affected by diagenesis and lower greenschist facies metamorphism. Evidence for renewed subaerial exposure of the ore and their host rocks can be seen in the secondary karstification and supergene weathering.

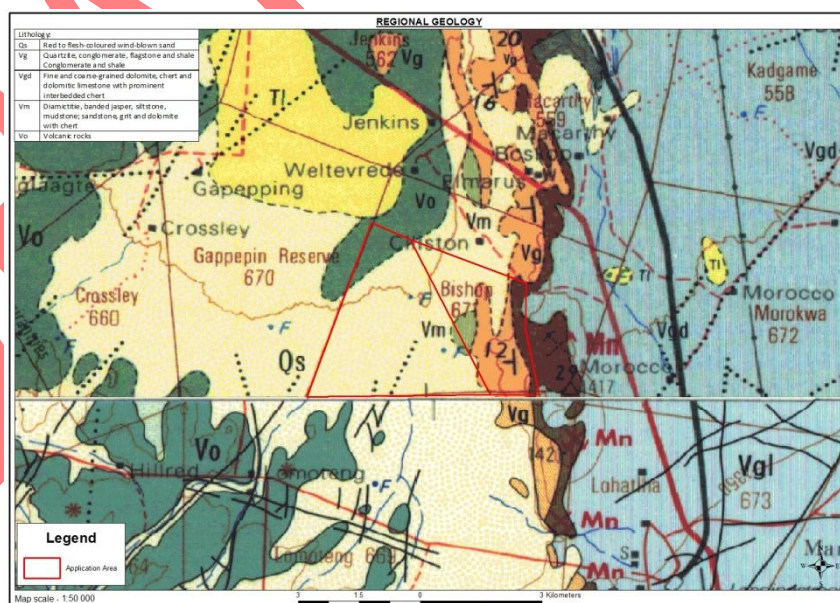


Figure 14 - Regional geology

- **Groundwater:**

The application area falls over the D41J quaternary drainage region. The drainage region forms part of the Lower Vaal Water Management Area (nr. 10 in terms of the National Water Act, 1998 (Act no. 36 of 1998) as published in the Government Gazette 20491, 1 October 1999).

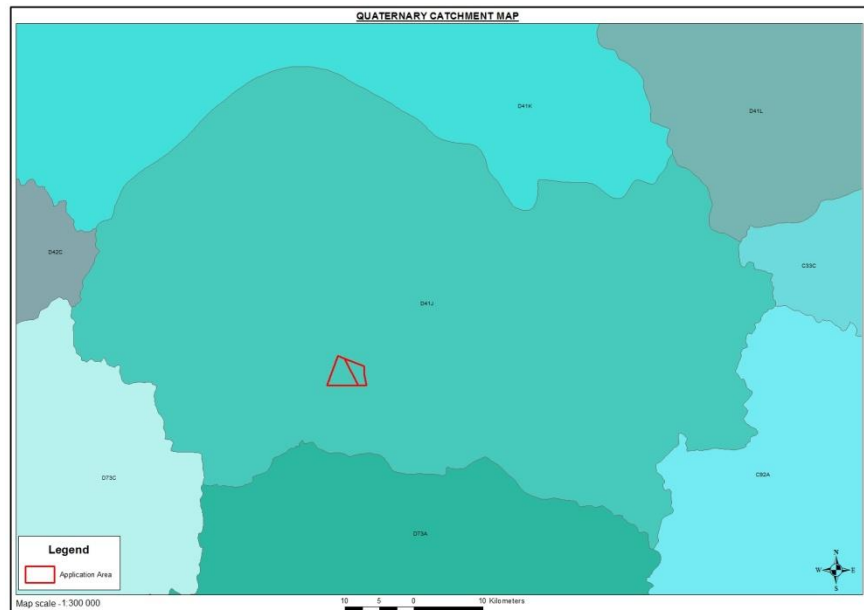


Figure 15 - Quaternary Catchment Map

- **Noise:**

The main current noise sources in the area include:

- Mining activities (blasting, hauling, crushing & screening) by mining operations situated in close proximity of the application area.
- Traffic noise from the surrounding road network.

- **Sensitive landscapes:**

"Sensitive environments" that have statutory protection are the following:

- Limited development areas (section 23 of the Environment Conservation Act, 1989 (Act 73 of 1989).
- Protected natural environments and national heritage sites.
- National, provincial, municipal and private nature reserves.
- Conservation areas and sites of conservation significance.
- National monuments and gardens of remembrance.
- Archaeological and palaeontological sites.
- Graves and burial sites
- Lake areas, offshore islands and the admiralty reserve.
- Estuaries, lagoons, wetlands and lakes.
- Streams and river channels, and their banks.
- Dunes and beaches.
- Caves and sites of geological significance.
- Battle and burial sites.
- Habitat and /or breeding sites of Red Data Book species.
- Areas or sites of outstanding natural beauty.
- Areas or sites of special scientific interest.
- Areas or sites of special social, cultural or historical interest.
- Declared national heritage sites
- Mountain catchment areas.
- Areas with eco-tourism potential

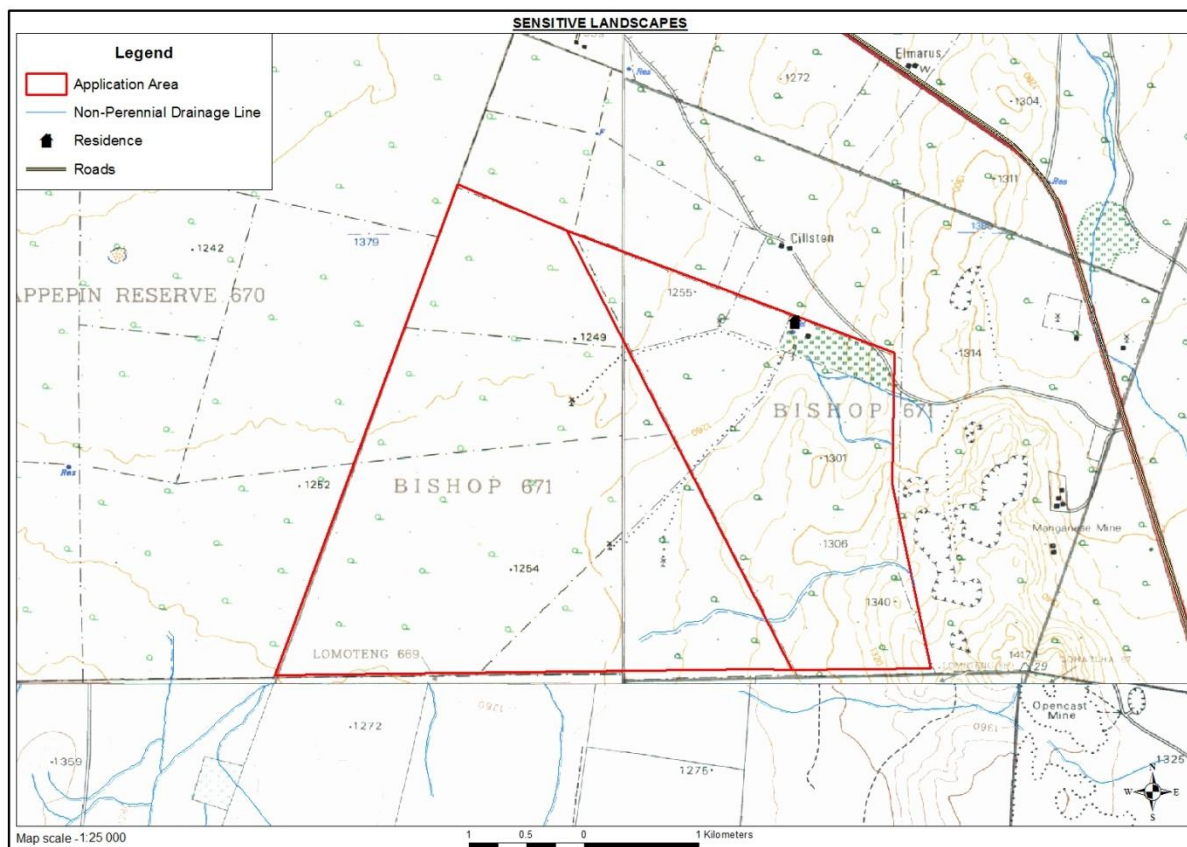


Figure 16 - Sensitive landscapes

There are three minor non-perennial drainage lines at Bishop.

There is a single family graveyard at the farm homestead, however this area will not be affected by the proposed development and as such the development does not pose any significant threat to this heritage site.

- **Socio-Economic:**

The last Census was held in 2011. The following section was compiled using data from Census 2001 and 2011. A Community Survey was done in 2016, however the information provided on the Stats SA site in this regard is not as comprehensive as the Census data.

The Tsantsabane Local Municipality is located within the north-eastern parts of the Northern Cape Province, and falls within the boundaries of the Siyanda District Municipality. The nearest business centre is Kimberley, which is about 200km away. The municipality's main town is Postmasburg. Three main traffic routes provide access to other cities, namely Johannesburg via Kuruman and the Kalahari and Cape Town via Kimberley. The rest of the Tsantsabane Municipality area comprises of Boichoko, Postdene, New Town, Stasie, Groen Water, Skyfontein, Jenn Haven, Glosam, the new established settlement brought about by the land redistribution called Maremane, and the well-known Lohatlha Army Base.

Economically Tsantsabane is known for being rich in minerals, and for its mining, agriculture, manufacturing and farming sectors. Tsantsabane has reinvented itself over the years as one of the leading investment hotspots in the Northern Cape.

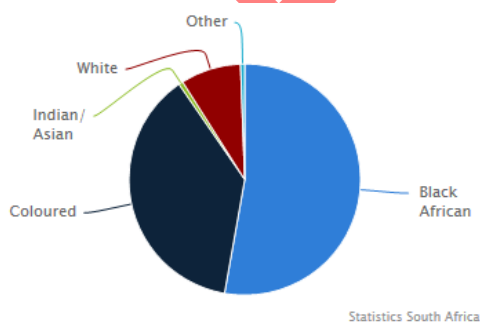
Key statistics:

Description	Census 2011	Census 2001
Total population	35 093	27 082
Young (0 – 14)	27.9%	31.4%
Working age (15 – 64)	67.6%	67.6%
Elderly (65+)	4.4%	4.7%
Dependency ratio	47.8%	56.4%
Growth rate	2.59%	0.38%
Population density	2 persons / km ²	-
Unemployment rate	26.1%	33.9%
Youth unemployment rate	32.3%	43.1%
No schooling aged 20+	13.7%	24.2%
Higher education aged 20+	6.3%	4.1%
Matric aged 20+	25.3%	16.7%
Number of households	9 839	6 800
Average household size	3.5	3.9
Female headed household	31.3%	33.1%
Formal dwellings	71.8%	81.4%
Housing owned/paying off	44.7%	53.9%
Flush toilet connected to sewerage	66.7%	61.7%
Weekly refuse removal	57.4%	67.5%
Piped water inside dwelling	45.3%	35.5%
Electricity for lighting	83.5%	74.4%

○ People

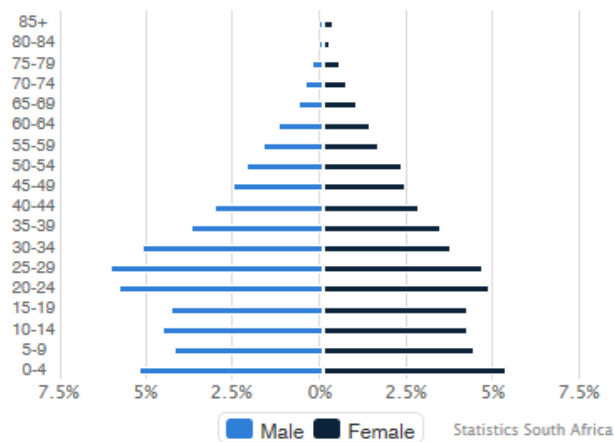
▪ Population groups:

According to Census 2011 there are 35 093 people in the Municipality. Of these, 52.8% are African black, 37.6% are coloured and 8.4% are white. Other population groups make up the remaining 1.2% of the population.



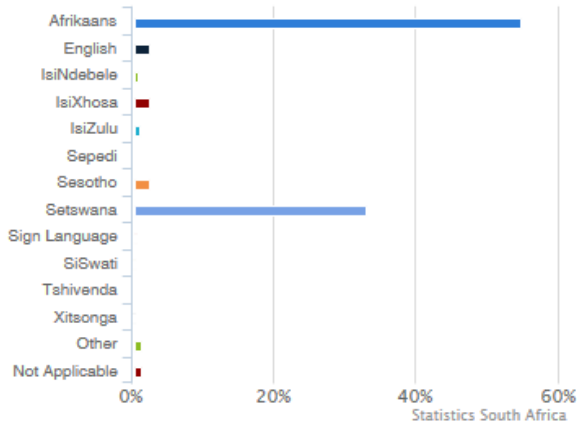
Group	Percentage
Black African	52,8%
Coloured	37,6%
Indian/Asian	0,6%
White	8,4%
Other	0,6%

▪ Sex and age distribution:



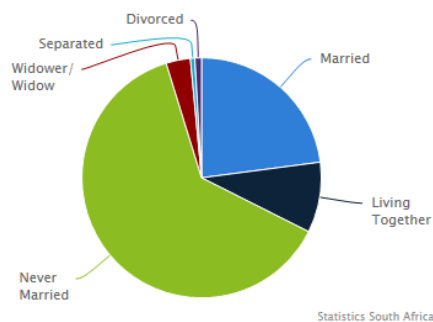
Age	Males	Females
0-4	5,3%	5,3%
5-9	4,3%	4,4%
10-14	4,6%	4,2%
15-19	4,4%	4,2%
20-24	5,9%	4,8%
25-29	6,1%	4,6%
30-34	5,2%	3,7%
35-39	3,8%	3,4%
40-44	3,1%	2,8%
45-49	2,6%	2,6%
50-54	2,2%	2,3%
55-59	1,7%	1,6%
60-64	1,3%	1,4%
65-69	0,7%	1%
70-74	0,5%	0,7%
75-79	0,3%	0,5%
80-84	0,1%	0,2%
85+	0,1%	0,3%

▪ Languages:



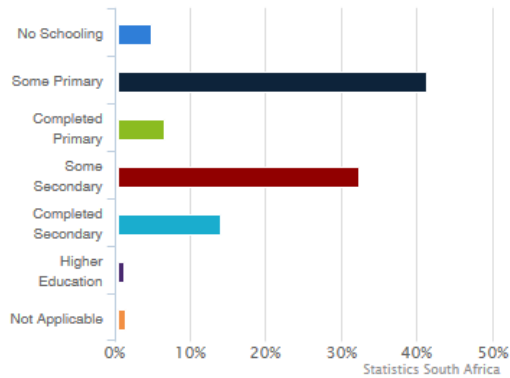
Language	Percentage
Afrikaans	54,5%
English	2,3%
IsiNdebele	0,7%
IsiXhosa	2,4%
IsiZulu	1,1%
Sepedi	0,4%
Sesotho	2,3%
Setswana	32,8%
Sign Language	0,5%
SiSwati	0,1%
Tshivenda	0,3%
Xitsonga	0,2%
Other	1,3%
Not Applicable	1,3%

▪ Marital status:



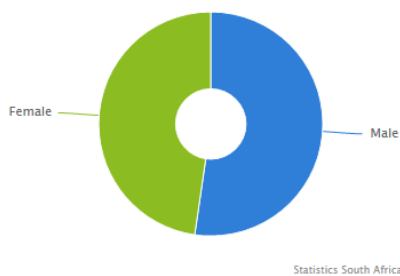
Group	Percentage
Married	22,9%
Living together like married partners	9,5%
Never married	62,8%
Widower/Widow	3,3%
Separated	0,6%
Divorced	0,9%

- Highest education levels:
Of those aged 20 years and older, 13.9% had some primary schooling, 5.3% had completed primary, 35.4% had some secondary and 25.4% had matric. Only 6.4% had a higher qualification and 13.7% no form of schooling.



Group	Percentage
No Schooling	4,6%
Some Primary	41%
Completed Primary	6,4%
Some Secondary	32,1%
Completed Secondary	13,7%
Higher Education	1%
Not Applicable	1,2%

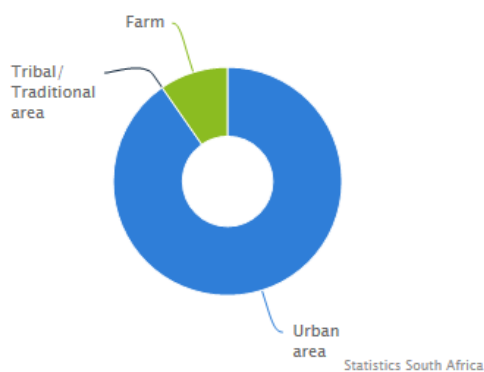
- Sex:



Sex	Percentage
Female	47,7%
Male	52,3%

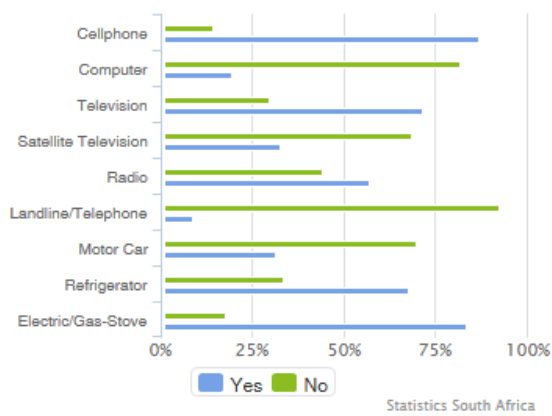
- Living conditions

- Settlement type



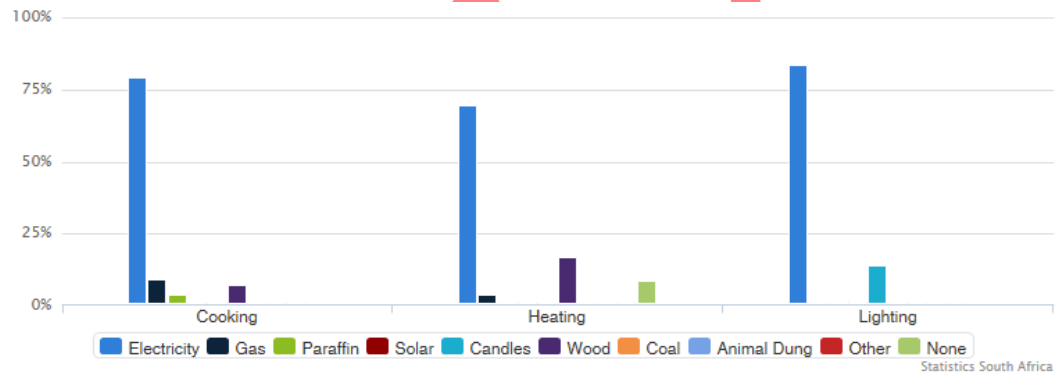
Area	Percentage
Urban	90,3%
Tribal/Traditional	0%
Farm	9,7%

▪ Household goods



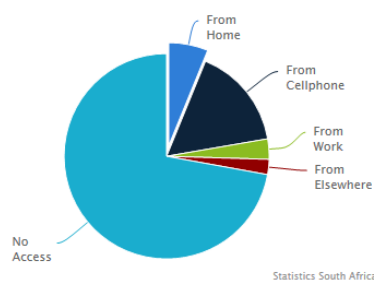
Item	Yes	No
Cellphone	86,1%	13,9%
Computer	18,8%	81,2%
Television	71%	29%
Satellite Television	32%	68%
Radio	56,4%	43,6%
Landline / Telephone	8,2%	91,8%
Motor Car	30,9%	69,1%
Refrigerator	67,1%	32,9%
Electric / Gas-Stove	82,7%	17,3%

▪ Energy or fuel for cooking, heating & lighting



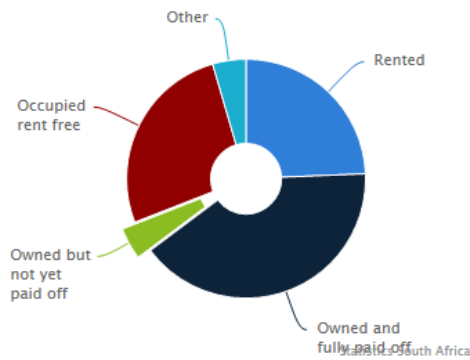
Energy Source	Cooking	Heating	Lighting
Electricity	79,1%	69,1%	83,5%
Gas	8,7%	3,4%	0,4%
Paraffin	3,8%	1,4%	0,7%
Solar	0,3%	0,4%	1,3%
Candles	0%	0%	13,8%
Wood	7,1%	16,6%	0%
Coal	0,1%	0,3%	0%
Animal Dung	0%	0,1%	0%
Other	0,1%	0%	0%
None	0,9%	8,6%	0,5%

▪ Access to internet



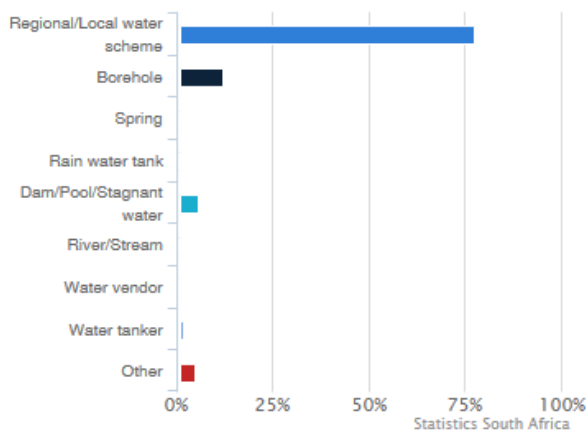
Access	Percentage
From Home	6,2%
From Cellphone	16,1%
From Work	3,2%
From Elsewhere	2,4%
No Access	72,2%

▪ Tenure status



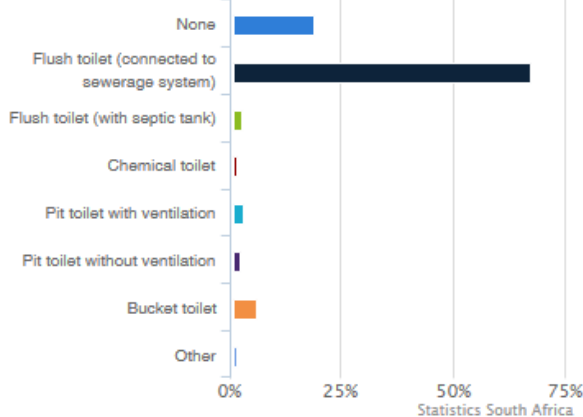
Tenure Status	Percentage
Rented	24,3%
Owned and fully paid off	40,4%
Owned but not yet paid off	4,3%
Occupied rent free	26,4%
Other	4,5%

▪ Source of water



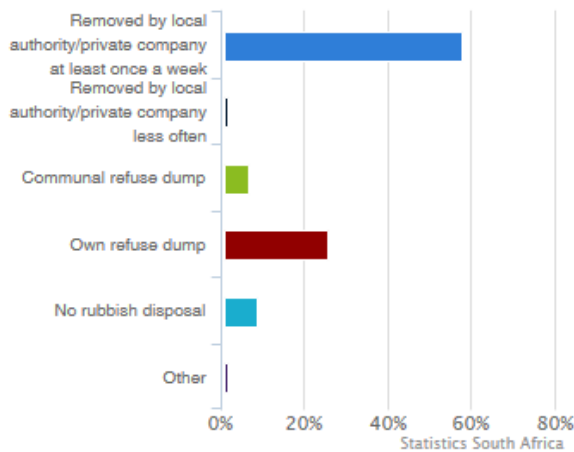
Source of water	Percentage
Regional/Local water scheme (operated by municipality or other water services provider)	76,7%
Borehole	11,7%
Spring	0,1%
Rain water tank	0,1%
Dam/Pool/Stagnant water	5,1%
River/Stream	0,1%
Water vendor	0,2%
Water tanker	1,5%
Other	4,4%

▪ Toilet facilities



Toilet Facility	Percentage
None	18,3%
Flush toilet (connected to sewerage system)	66,7%
Flush toilet (with septic tank)	2,2%
Chemical toilet	1,2%
Pit toilet with ventilation	2,6%
Pit toilet without ventilation	2%
Bucket toilet	5,6%
Other	1,4%

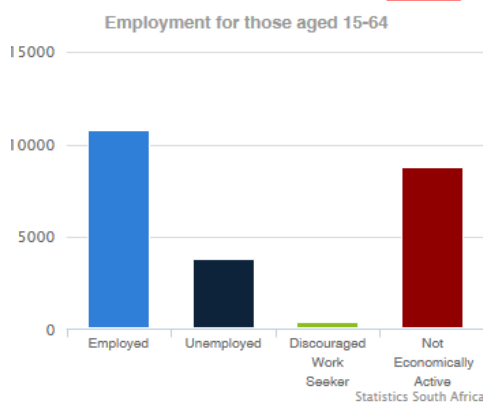
▪ Refuse disposal



Refuse Disposal	Percentage
Removed by local authority/private company at least once a week	57,4%
Removed by local authority/private company less often	1,3%
Communal refuse dump	6,4%
Own refuse dump	25,4%
No rubbish disposal	8,3%
Other	1,3%

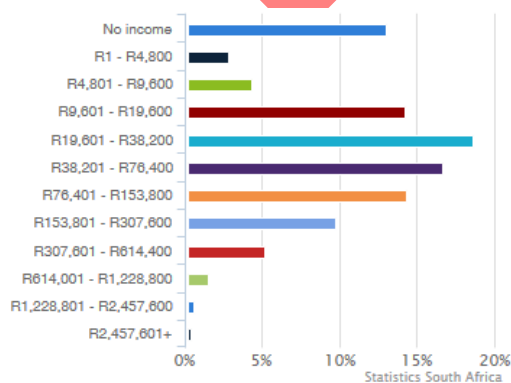
- Economy
Economically Tsantsabane is known for being rich in minerals, and for its mining, agriculture, manufacturing and farming sectors. Tsantsabane has reinvented itself over the years as one of the leading investment hot spots in the Northern Cape.

▪ Employment



Employment Status	Number
Employed	10760
Unemployed	3795
Discouraged Work Seeker	419
Not Economically Active	8764

▪ Average household income



Income	Percentage
None income	12,9%
R1 - R4,800	2,7%
R4,801 - R9,600	4,2%
R9,601 - R19,600	14,1%
R19,601 - R38,200	18,5%
R38,201 - R76,400	16,5%
R76,401 - R153,800	14,2%
R153,801 - R307,600	9,6%
R307,601 - R614,400	5,1%
R614,001 - R1,228,800	1,4%
R1,228,801 - R2,457,600	0,5%
R2,457,601+	0,3%

- **Soil:**

The soils of Bishop are described per vegetation type:

Kuruman Thornveld: Red wind-blown (0.3 – 1.2m deep) sand. Most important land types Ae, Ai, Ag and Ah, with Hutton soil form.

Kurman Mountain Bushveld: Most common land type Ib, followed by Ae, Ic and Ag. Soils are shallow sandy soils, of the Hutton form.

Kathu Bushveld: Aeolian red sand and surface calcrete, deep (>1.2m) sandy soils of Hutton and Clovelly soil forms. Land types mainly Ah and Ae, with some Ag.

Olifantshoek Plains Thornveld: Red Aeolian sand of Tertiary to Recent age (Kalahari Group) with silcrete and calcrete and some andesitic and basaltic lava of the Griqualand West Supergroup. Hutton soil forms, deeper than 1.2m, on the overwhelmingly dominant Ae and to a far lesser extent Ah land types.

- **Surface water:**

There are three minor non-perennial drainage lines within the application area.

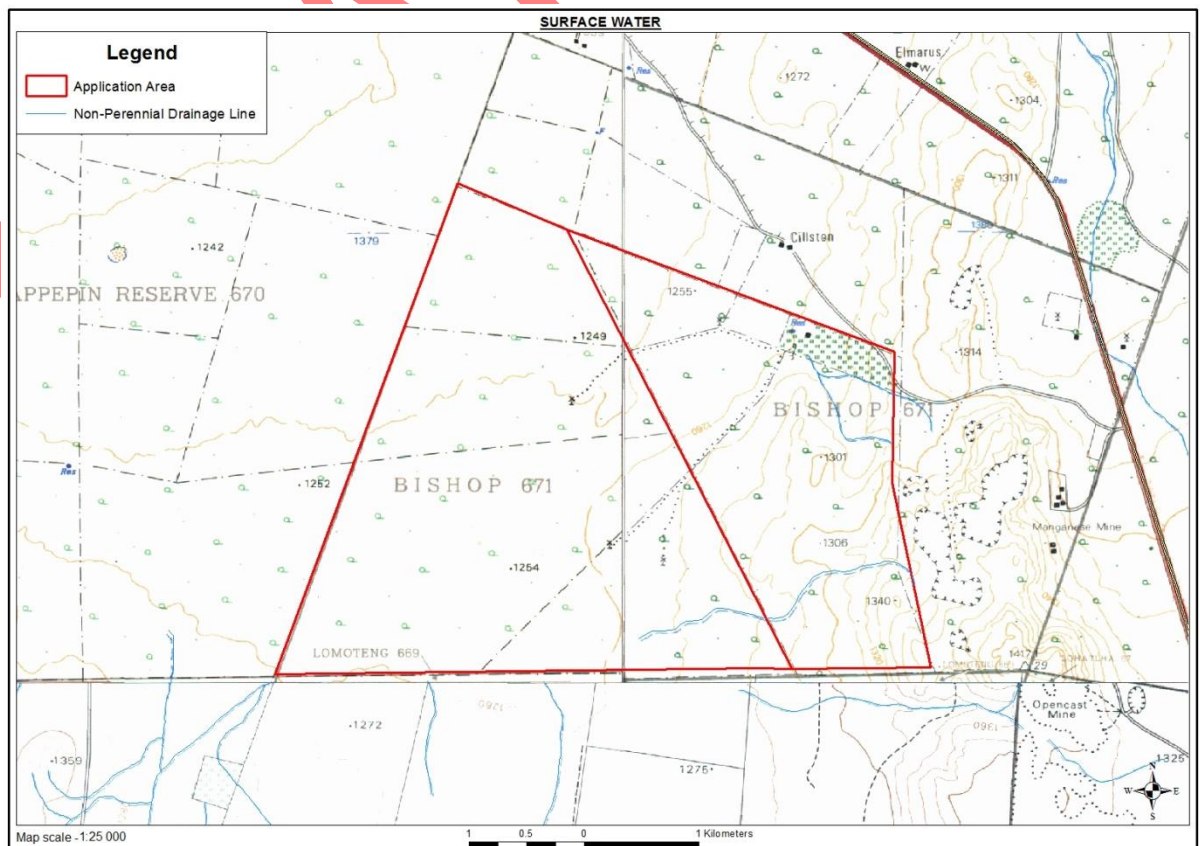


Figure 17 - Surface water map

- **Topography:**

The property varies in altitude from about 1 370 meters above sea level in the higher lying areas to about 1 255 meters above sea level in the lower lying areas. The surface topography is relatively flat in the lower lying areas.

(b) Description of the current land uses.

The two properties are currently utilized by the surface owner for livestock (cattle) farming activities.

(c) Description of specific environmental features and infrastructure on the site.

- Environmental:
 - There are three minor non-perennial drainage lines within the application area.

- Heritage:

In terms of the online PalaeoSensitivity Map as well as the Interim Comment from SAHRA a desktop PIA study should be undertaken before any prospecting activities may commence. Palaeontologist, Dr. John Almond, has been contacted to assist with the PIA Report. This report shall only be available in the middle of May 2020 as Dr. Almond is currently out of the country. K2019315211 (South Africa) (Pty) Ltd undertakes that the desktop study shall be undertaken before any prospecting activities commence.

Archaeologist, Stephan Gaigher of G&A Heritage Management Consultants, has been appointed to compile a Heritage Impact Assessment (HIA) Report for this project. Below is a summary of the findings of this report:

“The study area was found to be basically devoid of any significant heritage sites. Some stone tools were observed but for the most part these were out of context and none of the identified tools comprised an occupation or occupational site.

A single family graveyard was noted at the farm homestead, however this area will not be affected by the proposed development and as such the development does not pose any significant threat to this heritage site.

The palaeontological significance of the site is low since it is overlain in most part by the Kalahari Group which is not conducive to the formation and preservation of fossils. The manganese deposits in the northern corner of the study area could be more sensitive and if mining is proposed in that area, a field based PIA is recommended. Although the northern section has a higher paleontological value, the impacts of the prospecting would still be minimal, however it should be noted that no specialist Palaeontological Assessment was done.

Due to the small footprint of the proposed prospecting activities it is not anticipated that this will have any significant impact on heritage resources. The presence of scattered stone tools do however indicate the possible occurrence of such sites in other areas of the mining lease and should the prospecting lead to a mining rights application it is recommended that the whole area be subjected to a high resolution heritage impact assessment.”

- Infrastructure (Non-Mining):
 - Agricultural features such as windmills and livestock troughs;
 - Border fences;
 - Farm roads; and
 - Residence and associated infrastructure.

(d) Environmental and current land use map:
(Show all environmental and current land use features.)

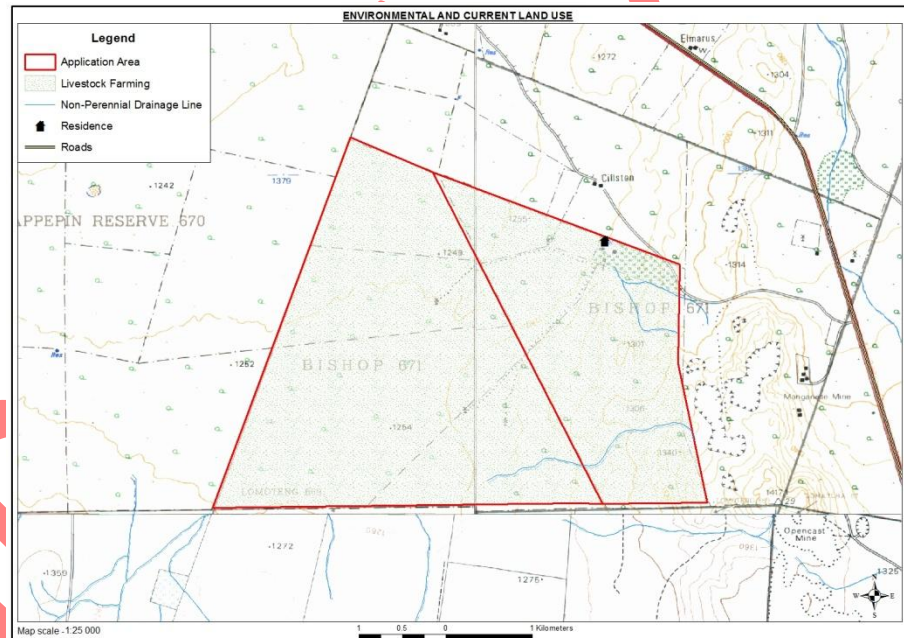


Figure 18 – Current land use and environmental map

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(v) Impacts and risks identified including the nature significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be managed:

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated.)

Impact	Description	Nature	Extent	Duration	Intensity	Probability	Significance	Management of impact
Air quality	<ul style="list-style-type: none"> Nuisance dust on roads will be created by the equipment hauling material between the open bulk sampling areas, the plant area, stockpile areas and waste dump areas on the site. Nuisance dust will be created during excavation (bulk sampling) activities. Nuisance dust will be created by the drilling and blasting activities. Vehicle and equipment emissions in workshop, stores and office areas. Nuisance dust will be created at the processing plant. Nuisance dust will be created in the residue deposition site, topsoil storage site, stockpile and waste dump areas when the material is dumped. Nuisance dust will be created when new infrastructure is established. Nuisance dust from the roads transecting the properties and surrounding area. Dust created by surrounding prospecting and mining activities. Fumes and noxious gases generated by blasting. Emissions from vehicles utilizing the road network in the area immediately surrounding the site. 	Negative	Regional	Short term	Low	Definite	Low	Avoided = Yes Cause irreplaceable loss of resource = No Managed = Yes Mitigated = Yes Reversed = Yes
Archaeological, cultural & heritage	<ul style="list-style-type: none"> Disturbance and/or destruction of archaeological artefacts Disturbance and/or destruction of burial grounds and graves Disturbance and/or destruction of buildings and structures older than sixty years Disturbance and/or destruction of palaeontological sites. 	Negative	Local	Permanent	High	Improbable	High	Potential impact can be avoided.☒
Fauna	<ul style="list-style-type: none"> Where new haulage roads will be created the natural habitat of the animals will be disturbed and/or destroyed. Road kills. Where the firebreak will be created the natural habitat of the animals will be disturbed and/or destroyed. Where new bulk sampling excavations will be created the natural habitat of the animals will be disturbed and/or destroyed. The natural habitat of the animals will be disturbed and/or destroyed where buildings and infrastructure will be built / established. The natural habitat of the animals will be disturbed and/or destroyed where the processing plant will be established. The natural habitat of the animals will be disturbed and/or destroyed where the residue deposition site, topsoil storage site, stockpile and waste dump areas will be established. The natural habitat of the animals will be disturbed and/or destroyed where new infrastructure will be established. Hunting & Snaring of animals 	Negative	Site	Long term	Medium	Definite	Medium	Avoided = Yes Cause irreplaceable loss of resource = No☒ Managed = Yes Mitigated = Yes Reversed = Yes

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Impact	Description	Nature	Extent	Duration	Intensity	Probability	Significance	Management of impact
Flora	<ul style="list-style-type: none"> Where new haulage roads will be created the vegetation will be disturbed and/or destroyed. Where the firebreak will be created the vegetation will be disturbed and/or destroyed. Where new bulk sampling excavations will be created the vegetation will be disturbed and/or destroyed. The vegetation cover will be disturbed and / or destroyed in the areas where the buildings and infrastructure will be built / established. The vegetation cover will be disturbed and / or destroyed where the processing plant will be established. The vegetation cover will be disturbed and / or destroyed where the residue deposition site, topsoil storage site, stockpile and waste dump areas will be established. The vegetation cover will be disturbed and / or destroyed where new infrastructure will be established. Runaway veld fires. 	Negative	Site	Long term	Medium	Definite	Medium	<p>Avoided = Yes</p> <p>Cause irreplaceable loss of resource = No</p> <p>Managed = Yes</p> <p>Mitigated = Yes</p> <p>Reversed = Yes</p>
Groundwater	<ul style="list-style-type: none"> Possible hydrocarbon spills which could infiltrate to groundwater. Possible abstraction of groundwater for use in the bulk sampling activities. 	Negative	Regional	Long term	Low	Probable	Low	<p>Avoided = Yes</p> <p>Cause irreplaceable loss of resource = No</p> <p>Managed = Yes</p> <p>Mitigated = Yes</p> <p>Reversed = Yes</p>
Noise	<ul style="list-style-type: none"> Noise from the equipment on the haulage roads. Noise from the equipment and vehicles during excavation (bulk sampling) activities. Noise from drilling and blasting activities. A high noise impact is expected in the immediate vicinity of the processing plant. Noise created by traffic on surrounding road network. 	Negative	Regional	Long term	Medium	Definite	Medium	<p>Potential impact can be avoided, managed and mitigated.</p>
Sensitive landscapes	<ul style="list-style-type: none"> Non-Perennial drainage lines 	Negative	Regional	Short term	Medium	Improbable	Medium	<p>Potential impact can be avoided, managed and mitigated.</p>
Soil	<ul style="list-style-type: none"> Compaction of soil is expected on the roads that are used by the operation and at the infrastructure areas. Possible hydrocarbon spills. Removal and disturbance of soil structure by excavation (bulk sampling) and drilling activities. Disturbance of soil structure where buildings and infrastructure will be built / established. Disturbance of soil structure where the residue deposition sites, topsoil storage sites, stockpile and waste dump sites will be created. Disturbance of soil structure where new infrastructure will be established. 	Negative	Site	Long term	Medium	Definite	Medium	<p>Avoided = Yes</p> <p>Cause irreplaceable loss of resource = No</p> <p>Managed = Yes</p> <p>Mitigated = Yes</p> <p>Reversed = Yes</p>

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Impact	Description	Nature	Extent	Duration	Intensity	Probability	Significance	Management of impact
Surface water	<ul style="list-style-type: none"> If roads are not properly maintained, water erosion after thunder storms can occur. Possible contamination of surface water by hydrocarbon spills during a rain event. Collection of water in open excavations during and after thunderstorms. 	Negative	Regional	Medium Term	Medium	Probable	Medium	Avoided = Yes Cause irreplaceable loss of resource = No Managed = Yes Mitigated = Yes Reversed = Yes
Topography	<ul style="list-style-type: none"> Changing of natural slopes will take place. Temporary stockpiles, topsoil storage sites and waste rock dumps will be created, temporarily altering the topography. 	Negative	Site	Permanent	Medium	Definite	Medium	Avoided = Yes Cause irreplaceable loss of resource = No Managed = Yes Mitigated = Yes Reversed = No
Visual	<ul style="list-style-type: none"> The prospecting operation will be visible to some extent from the immediate surroundings. Changing of natural aesthetic view of environment could take place from bulk sampling activities and related infrastructure. Breaking of natural skyline. 	Negative	Site	Long term	Low	Definite	Low	Avoided = Yes Cause irreplaceable loss of resource = No Managed = Yes Mitigated = Yes Reversed = No
Vibrations	<ul style="list-style-type: none"> Ground vibrations due to blasting activities. 	Negative	Site	Short term	Low	Definite	Low	Can be managed.

(vi) **Methodology used in determining and ranking the nature, significance, consequence, extent, duration and probability of potential environmental impacts and risks:**

(Describe how the significance, probability and duration of the aforesaid identified impacts that were identified through the consultation process were determined in order to decide the extent to which the initial site layout needs revision.)

The assessment of the impacts has been conducted according to a synthesis of criteria required by the integrated environmental management procedure.

Nature of impact

This is an appraisal of the type of effect the activity would have on the affected environmental component. Its description should include what is being affected, and how.

Extent

The physical and spatial size of the impact. This is classified as follows:

- **Local**
The impacted area extends only as far as the activity, e.g. a footprint.
- **Site**
The impact could affect the whole, or a measurable portion of the property/ies.
- **Regional**
The impact could affect the area including the neighbouring farms, transport routes and the adjoining towns.

Duration

The lifetime of the impact. This is classified as follows:

- **Short term**
The impact will either disappear with mitigation or will be mitigated through natural process in a short time period.
- **Medium term**
The impact will last up to the end of the prospecting period, where after it will be entirely negated.
- **Long term**
The impact will continue or last for the entire operational life of the operation, but will be mitigated by direct human action or by natural processes thereafter.
- **Permanent**
The only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.

Intensity

This describes how destructive, or benign, the impact is. Does it destroy the impacted environment, alter its functioning, or slightly alter it. These are rated as:

- **Low**
This alters the affected environment in such a way that the natural processes or functions are not affected.
- **Medium**
The affected environment is altered, but function and process continue, albeit in a modified way.

- **High**
Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

- **Improbable**
The possibility of the impact occurring is very low, due either to the circumstances, design or experience.
- **Probable**
There is a possibility that the impact will occur to the extent that provisions must be made therefore.
- **Highly probable**
It is most likely that the impacts will occur at some or other stage of the development.
- **Definite**
The impact will take place regardless of any preventative plans, and mitigation measures or contingency plans will have to be implemented to contain the impact.

Determination of significance

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The classes are rated as follows:

- **No significance**
The impact is not likely to be substantial and does not require any mitigatory action.
- **Low**
The impact is of little importance, but may require limited mitigation.
- **Medium**
The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.
- **High**
The impact is of great importance. Failure to mitigate, with the objective to reduce the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

(vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected:

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties.)

During the operational stages of the prospecting operation, there is a possibility of sterilisation of the mineral reserves and resources due to improper placement of infrastructure. The infrastructure and stockpiles/dumps will alter the topography by adding features to the landscape. Topsoil removal and excavations will unearth the natural topography. The construction of infrastructure and various facilities in the prospecting area can also result in loss of soil due to erosion. Vegetation will be stripped in preparation for placement of infrastructure and excavations, and therefore the areas will be bare and susceptible to erosion.

The topsoil that is stripped and piled on surrounding areas can be eroded by wind and rain. The soil will be carried away during runoff. The cleared areas will be rehabilitated, but full restoration of soils might only occur over a number of years, subsequent to the re-establishment of vegetation. Furthermore, improper stockpiling and soil compaction can result in soil sterilisation. Leaching can also occur, resulting in the loss of nutrients.

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

The loss of land capability and land use can occur in two ways. Firstly, through topsoil removal, disturbances and loss of soil fertility; and secondly through the improper placement of infrastructure. Most of the site has a land capability for grazing, but grazing activities can still be performed in areas not earmarked for the operation, and with proper rehabilitation the land capabilities and land use potential can be restored.

Groundwater could be directly affected if any deep excavations reach the primary aquifers. Furthermore, if any oil and fuel spillages occur during these scenarios and activities, then groundwater will be directly contaminated. Similarly, hazardous surface spillages will seep into the underlying aquifers and contaminate ground water. Improper handling of hazardous material will cause contamination of nearby surface water resources (non-perennial drainage lines) during runoff episodes. Lack of storm control structures will lead to erosion of stockpiles during heavy rains and runoff will carry suspended solids into the downstream environment. This might cause high silt load and affect stream flow. If no, or inadequate ablation facilities are available then workers might feel the need to use the veld for this purpose, which can contaminate natural resources.

Any excavations within the non-perennial drainage lines will impact on the surface water environment by altering their physical characteristics. These impacts include the alteration of flow patterns, ponding and an increase in the

concentration of suspended solids and sedimentation. Furthermore, species eggs/seeds that usually remain dormant due to their adaptations to ephemerality, will be lost when the top biological layer of the dry water course are removed during excavations.

Bulk sampling activities on site will reduce the natural habitat for ecological systems to continue their operation. It is not expected that the areas of high ecological function will rehabilitate following disturbance events. It is likely that the pristine vegetation and any protected species will be destroyed during the operation. While general clearing of the area and bulk sampling activities destroy natural vegetation, invasive plants can increase due to their opportunistic nature in disturbed areas. If invasive plants establish in disturbed areas, it may cause an impact beyond the boundaries of the prospecting site. These alien invasive species are thus a threat to surrounding natural vegetation and can result in the decrease of biodiversity and ecological value of the area. Therefore, if alien invasive species are not controlled and managed, their propagation into new areas could have a high impact on the surrounding natural vegetation in the long term. With proper mitigation, the impacts can be substantially reduced.

The transformation of natural habitats to bulk sampling and associated infrastructure will result in the loss of habitat affected individual species, and ecological processes. In turn this will result in the displacement of faunal species dependent upon such habitat. Increased noise and vibration due to operational activities will disturb and possibly displace birds and other wildlife. Fast moving vehicles take a heavy toll in the form of road kills of small mammals, birds, reptiles, amphibians and a large number of invertebrates. Associated infrastructure will result in the loss of connectivity and fragmentation of natural habitat. Fragmentation of habitat will lead to the loss of migration corridors, in turn resulting in degeneration of the affected populations genetic make-up. This results in a subsequent loss of genetic variability between meta-populations occurring within the study site. Pockets of fragmented natural habitats hinder the growth and development of populations.

During the operation the abovementioned activities have potential for dust generation. It is anticipated that the extent of dust emissions would vary substantially from day to day depending on the level of activity and the specific operations. The operation will typically have low to moderate levels of noise, along with man-influenced sounds such as traffic on the roads, activities on the farm and very occasional air traffic. The proposed operation will add a certain amount of noise to the existing noise in the area. However, levels of noise generated by prospecting activities especially with blasting can be substantial.

The impact of site generated trips on the traffic and infrastructure of the existing roads is expected to be moderate. Furthermore, if road safety is not administered it can have a high impact on the safety of fellow road users.

The activities on site have the potential to impact upon heritage resources. Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon these resources will be permanent and irreversible. Any movement of vehicles, equipment or personnel through

areas containing these artefacts could result in the permanent destruction of the artefacts and loss of heritage resources.

The operation will create a number of new employment opportunities and uplift the local community. The magnitude of this impact will depend on the number of people that will be employed and the number of contractors sourced. An influx of people into the area could possibly impact on safety and security of local farm residents. During the decommissioning and at closure of the site, staff will most likely be retrenched, resulting in people being unable to find new employment for a long period of time.

Economic slump of the local towns after site closure is not considered to be an associated potential impact, because there are numerous other mining operations in the region. However, income streams from wage bills as well as goods and services contracts (at all geographical levels) will come to an end, reducing the monetary income of individuals and operation-related businesses.

It is likely, however that there will be residual positive economic impacts that are not fully reversed with the closure of the site, and that the economy will not decline to its original level prior to the development of this project. This is because the operation will generate substantial income for the regional and local economy, both directly and indirectly, during its life.

(viii) The possible mitigation measures that could be applied and the level of risk:

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment / discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered.)

Impact	Mitigation	Risk
Air quality	<ul style="list-style-type: none"> • Speed limits; • Spraying of surfaces with water; • Avoidance of unnecessary removal of vegetation; • Re-vegetation; • Monitoring; • Backfilling and rehabilitation of disturbed areas; and • Controlled drilling and blasting operations, preferably on wind-free days. 	Low
Archaeological, cultural & heritage	<ul style="list-style-type: none"> • Buffer zones to be established and implemented should an archaeological and/or palaeontological site be identified. • Adhering to the recommendations and Chance Find Protocol of the Heritage Impact Assessment as well as the Chance Fossil Finds Procedure of the Palaeontological Heritage Report. • Adhering to any conditions set by the South African Heritage Resources Agency (SAHRA) in their Final Comment. 	High
Fauna	<ul style="list-style-type: none"> • Speed limits; • Continuous backfilling of open 	Medium

	<ul style="list-style-type: none"> excavations; • Low angle access ramp in excavations; • Continuous rehabilitation of disturbed areas; • Snares & traps removed and destroyed; and • Maintenance of firebreaks. 	
Flora	<ul style="list-style-type: none"> • Continuous backfilling of open excavations; • Continuous rehabilitation of disturbed areas; • Maintenance of firebreaks; • No trees felled for firewood; • Obtain relevant permit before removal of protected tree or plant species; and • Re-seeding where necessary. 	Medium
Ground water	<ul style="list-style-type: none"> • Immediate removal of any hydrocarbon spill; • Maintenance in dedicated area; • Re-fuelling in dedicated area; • Drip pans; • Storage of hydrocarbons in dedicated areas; • Monitoring of groundwater abstraction and quality; • Clean & Dirty water system; and • Maintenance of conservancy tanks and chemical toilets. 	Low
Noise	<ul style="list-style-type: none"> • Hearing protection; • Non-metallic washers to join infrastructure; • Controlled drilling & blasting operations; • Silencers on equipment and vehicles; • Acoustic enclosure for generators; and • Distance from residence of surface owner. 	Medium
Sensitive landscapes	<ul style="list-style-type: none"> • Buffer zones to be established and implemented. 	Medium
Soil	<ul style="list-style-type: none"> • Continuous backfilling of open excavations; • Continuous rehabilitation of disturbed areas; • Ripping of compacted areas; • Replacing layer of topsoil over backfilled areas; • Maintenance & refuelling in dedicated areas; • Drip pans; • Storage of hydrocarbons in dedicated areas; and • Immediate removal of any hydrocarbon spill. 	Medium
Surface water	<ul style="list-style-type: none"> • Storm water control; 	Medium

	<ul style="list-style-type: none"> • Immediate removal of any hydrocarbon spill; • Maintenance & re-fuelling in dedicated areas; • Drip pans; • Storage of hydrocarbons in dedicated areas; and • Clean & dirty water plan. 	
Topography	<ul style="list-style-type: none"> • Continuous backfilling of open excavations; • Replacing layer of topsoil over backfilled areas; • Sloping of rehabilitated and disturbed areas; and • Sloping of topsoil dumps, stockpiles and waste rock dumps. 	Medium
Visual	<ul style="list-style-type: none"> • Continuous backfilling of open excavations; • Replacing layer of topsoil over backfilled areas; • Sloping of rehabilitated and disturbed areas; • Sloping of topsoil dumps, stockpiles and waste rock dumps; and • Removal of all infrastructure upon closure. 	Low

(ix) Motivation where no alternative sites were considered:

The final site layout can only be determined during active prospecting as set out below:

- The first phase of the proposed prospecting activities entails a reconnaissance visit, desktop study and geological mapping.
- The second phase of the proposed prospecting activities entails percussion drilling.
- The exact locality of the proposed bulk sampling trenches, and associated infrastructure, can only be determined after the percussion boreholes were drilled and the samples analysed.

(x) Statement motivating the alternative development location within the overall site:

(Provide a statement motivating the final site layout that is proposed.)

The conceptual locality of the infrastructure was decided upon after taking into account of the following:-

- Locality of the ore bodies;
- Topography of the area;
- Environmental features;
- Operational requirements; and
- Discussions with the surface owner.

The final design and layout of the infrastructure can only be decided upon by the management team after granting and execution of the Prospecting Right and after the first two phases of the Prospecting Work Programme has been completed.

h) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final site layout plan) through the life of the activity.

(Including (i) a description of all environmental issues and risks that were identified during the environmental assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

The methodology for the predication and assessment of impacts has been in accordance with *DEA Guideline 5: Assessment of Alternatives and Impacts*. Potential impacts have been rated in terms of the direct, indirect and cumulative impacts.

Criteria taken into account:

- Spatial extent – The size of the area that will be affected by the impact.
- Intensity – The anticipated severity of the impact.
- Duration – The timeframe during which the impact will be experienced.

Using the criteria above, the impacts have further been assessed in terms of the following:

- Probability – The probability of the impact occurring.
- Significance – Will the impact cause a notable alteration of the environment?
- Status - Whether the impact on the overall environment will be positive, negative or neutral.
- Confidence – The degree of confidence in predictions based on available information and specialist knowledge.

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Impact	Description	Nature	Extent	Duration	Intensity	Probability	Significance	Action
Air quality	<ul style="list-style-type: none"> Nuisance dust on roads will be created by the equipment hauling material between the open bulk sampling areas, the plant area, stockpile areas and waste dump areas on the site. Nuisance dust will be created during excavation (bulk sampling) activities. Nuisance dust will be created by the drilling and blasting activities. Vehicle and equipment emissions in workshop, stores and office areas. Nuisance dust will be created at the processing plant. Nuisance dust will be created in the residue deposition site, topsoil storage site, stockpile and waste dump areas when the material is dumped. Nuisance dust will be created when new infrastructure is established. Nuisance dust from the roads transecting the properties and surrounding area. Dust created by surrounding prospecting and mining activities. Fumes and noxious gases generated by blasting. Emissions from vehicles utilizing the road network in the area immediately surrounding the site. 	Negative	Regional	Short term	Low	Definite	Low	<ul style="list-style-type: none"> Speed limits Spraying of surfaces with water Avoidance of unnecessary removal of vegetation. Re-vegetation Monthly monitoring & reporting Backfilling and rehabilitation on a continuous basis. Controlled drilling & blasting operations
Archaeological, cultural & heritage	<ul style="list-style-type: none"> Disturbance and/or destruction of archaeological artefacts Disturbance and/or destruction of burial grounds and graves Disturbance and/or destruction of buildings and structures older than sixty years Disturbance and/or destruction of palaeontological sites. 	Negative	Local	Permanent	High	Improbable	High	<ul style="list-style-type: none"> Buffer zones to be established and implemented. Adhering to recommendations and Chance Find Protocol of HIA Adhering to any conditions set by SAHRA.
Fauna	<ul style="list-style-type: none"> Where new haulage roads will be created the natural habitat of the animals will be disturbed and/or destroyed. Road kills. Where the firebreak will be created the natural habitat of the animals will be disturbed and/or destroyed. Where new bulk sampling excavations will be created the natural habitat of the animals will be disturbed and/or destroyed. The natural habitat of the animals will be disturbed and/or destroyed where buildings and infrastructure will be built / established. The natural habitat of the animals will be disturbed and/or destroyed where the processing plant will be established. The natural habitat of the animals will be disturbed and/or destroyed where the residue deposition site, topsoil storage site, stockpile and waste dump areas will be established. The natural habitat of the animals will be disturbed and/or destroyed where new infrastructure will be established. Hunting & Snaring of animals 	Negative	Site	Long term	Medium	Definite	Medium	<ul style="list-style-type: none"> Speed limits Continuous backfilling of open excavations Low angle escape ramp in excavations Continuous rehabilitation of disturbed areas. Snares and traps removed Maintenance of firebreaks

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Impact	Description	Nature	Extent	Duration	Intensity	Probability	Significance	Action
Flora	<ul style="list-style-type: none"> Where new haulage roads will be created the vegetation will be disturbed and/or destroyed. Where the firebreak will be created the vegetation will be disturbed and/or destroyed. Where new bulk sampling excavations will be created the vegetation will be disturbed and/or destroyed. The vegetation cover will be disturbed and / or destroyed in the areas where the buildings and infrastructure will be built / established. The vegetation cover will be disturbed and / or destroyed where the processing plant will be established. The vegetation cover will be disturbed and / or destroyed where the residue deposition site, topsoil storage site, stockpile and waste dump areas will be established. The vegetation cover will be disturbed and / or destroyed where new infrastructure will be established. Runaway veld fires. 	Negative	Site	Long term	Medium	Definite	Medium	<ul style="list-style-type: none"> Continuous backfilling of open excavations Continuous rehabilitation of disturbed areas Re-seeding where necessary Maintenance of firebreaks No trees will be felled for firewood Relevant permits will be obtained before removal of protected tree and/or plant species Speed limits
Groundwater	<ul style="list-style-type: none"> Possible hydrocarbon spills which could infiltrate to groundwater. Possible abstraction of groundwater for use in the bulk sampling activities. 	Negative	Regional	Long term	Low	Probable	Low	<ul style="list-style-type: none"> Immediate removal of any hydrocarbon spill Maintenance & re-fuelling in dedicated areas Drip pans Storage of hydrocarbons in dedicated areas Monitoring of groundwater abstraction Clean & Dirty Water System Maintenance of conservancy tanks and chemical toilets.
Noise	<ul style="list-style-type: none"> Noise from the equipment on the haulage roads. Noise from the equipment and vehicles during excavation (bulk sampling) activities. Noise from drilling and blasting activities. A high noise impact is expected in the immediate vicinity of the processing plant. Noise created by traffic on surrounding road network. 	Negative	Regional	Long term	Medium	Definite	Medium	<ul style="list-style-type: none"> Hearing protection Non-metallic washers to join infrastructure Working hours Controlled drilling & blasting operations Distance from residence.
Sensitive landscapes	<ul style="list-style-type: none"> Non-Perennial drainage lines 	Negative	Regional	Short term	Medium	Improbable	Medium	<ul style="list-style-type: none"> Buffer zones to be established and implemented.
Soil	<ul style="list-style-type: none"> Compaction of soil is expected on the roads that are used by the operation and at the infrastructure areas. Possible hydrocarbon spills. Removal and disturbance of soil structure by excavation (bulk sampling) and drilling activities. Disturbance of soil structure where buildings and infrastructure will be built / established. Disturbance of soil structure where the residue deposition sites, topsoil storage sites, stockpile and waste dump sites will be created. Disturbance of soil structure where new infrastructure will be established. 	Negative	Site	Long term	Medium	Definite	Medium	<ul style="list-style-type: none"> Continuous rehabilitation of disturbed areas Continuous rehabilitation of open excavation Ripping of compacted areas Replacing layer of topsoil over backfilled areas Maintenance & re-fuelling in dedicated areas Drip pans Storage of hydrocarbons in dedicated areas Immediate removal of any hydrocarbon spill

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Impact	Description	Nature	Extent	Duration	Intensity	Probability	Significance	Action
Surface water	<ul style="list-style-type: none"> If roads are not properly maintained, water erosion after thunder storms can occur. Possible contamination of surface water by hydrocarbon spills during a rain event. Collection of water in open excavations during and after thunderstorms. 	Negative	Regional	Medium Term	Medium	Probable	Medium	<ul style="list-style-type: none"> Storm water control Immediate removal of any hydrocarbon spill Maintenance & re-fuelling in dedicated areas Drip pans Storage of hydrocarbons in dedicated areas Clean & Dirty Water System
Topography	<ul style="list-style-type: none"> Changing of natural slopes will take place. Temporary stockpiles, topsoil storage sites and waste rock dumps will be created, temporarily altering the topography. 	Negative	Site	Permanent	Medium	Definite	Medium	<ul style="list-style-type: none"> Continuous backfilling of open excavations with overburden Replacing layer of topsoil over backfilled areas Sloping of topsoil dumps, stockpiles and waste rock dump Sloping of rehabilitated and disturbed areas
Visual	<ul style="list-style-type: none"> The prospecting operation will be visible to some extent from the immediate surroundings. Changing of natural aesthetic view of environment could take place from bulk sampling activities and relating infrastructure. Breaking of natural skyline. 	Negative	Site	Long term	Low	Definite	Low	<ul style="list-style-type: none"> Continuous backfilling of open excavations. Replacing layer of topsoil over backfilled areas Sloping of topsoil dumps, stockpiles and waste rock dumps Removal of all infrastructure upon closure.
Vibrations	<ul style="list-style-type: none"> Ground vibrations due to blasting activities 	Negative	Site	Short term	Low	Definite	Low	<ul style="list-style-type: none"> Monitoring of blast by competent person.

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i) Assessment of each identified potentially significant impact and risk:

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by interested and affected parties.)

ACTIVITY Whether listed or not listed. (e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc...)	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts) (e.g. dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc...)	ASPECTS AFFECTED	PHASE In which impact is anticipated. (e.g. Construction, commissioning, operational, decommissioning, closure, post-closure)	SIGNIFICANCE If not mitigated	MITIGATION TYPE modify, remedy, control or stop through: (e.g. noise control measures, stormwater control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc...) (e.g. modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation.)	SIGNIFICANCE If mitigated
Ablution Facilities (Chemical toilets)	<ul style="list-style-type: none"> • Soil contamination • Groundwater contamination 	Groundwater Soil	Construction Commissioning Operational Decommissioning Closure	Low	<ul style="list-style-type: none"> • Maintenance of ablution facilities / conservancy tanks on regular basis. • Removal of ablution facilities upon closure. 	Very Low
Blasting	<ul style="list-style-type: none"> • Dust • Fly-rock • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance • Surface water contamination 	Air quality Fauna Flora Noise Surface water Topography Safety	Operational	High	<ul style="list-style-type: none"> • Dust control and monitoring • Noise control and monitoring • Access control. • Continuous rehabilitation. • Stormwater run-off control. 	Medium
Boreholes	<ul style="list-style-type: none"> • Dust • Noise 	Air quality Fauna	Operational	Medium	<ul style="list-style-type: none"> • Dust control and monitoring 	Low

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	<ul style="list-style-type: none"> • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	Flora Noise			<ul style="list-style-type: none"> • Noise control and monitoring • Continuous rehabilitation 	
Diesel tanks	<ul style="list-style-type: none"> • Groundwater contamination • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance 	Groundwater Soil Surface water	Construction Commissioning Operational Decommissioning Closure	Medium	<ul style="list-style-type: none"> • Maintenance of diesel tanks and bund walls. • Oil traps. • Groundwater quality monitoring. • Drip tray at re-fuelling point. • Immediately clean hydrocarbon spill. 	Low
Excavations	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance • Surface water contamination 	Air quality Fauna Flora Groundwater Noise Soil Surface water Topography Safety	Operational Decommissioning Closure	High	<ul style="list-style-type: none"> • Access control • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring • Continuous rehabilitation • Stormwater run-off control • Immediately clean hydrocarbon spill • Drip trays • Rock stability control and monitoring • Erosion control 	Medium
Generator	<ul style="list-style-type: none"> • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural 	Air quality Groundwater Noise Soil	Construction Commissioning Operational Decommissioning	High	<ul style="list-style-type: none"> • Access control • Maintenance of generator and bund walls 	Medium

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	<ul style="list-style-type: none"> habitat of fauna Soil contamination Surface disturbance 	Surface water Safety	Closure		<ul style="list-style-type: none"> Noise control and monitoring Oil traps Groundwater quality monitoring Immediately clean hydrocarbon spill 	
Office – mobile container	<ul style="list-style-type: none"> Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance 	Fauna Flora Groundwater Soil	Construction Commissioning Operational Decommissioning Closure	Low	<ul style="list-style-type: none"> Immediately clean hydrocarbon spill Rip disturbed areas to allow re-growth of vegetation cover 	Very low
Processing plant	<ul style="list-style-type: none"> Dust Noise Potential groundwater usage Potential groundwater contamination Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance 	Air quality Fauna Flora Groundwater Noise Soil Surface water Safety	Construction Commissioning Operational Decommissioning Closure	High	<ul style="list-style-type: none"> Access control Maintenance of processing plant Dust control and monitoring Groundwater quality and level monitoring Noise control and monitoring Drip trays Stormwater run-off control. Immediately clean hydrocarbon spills Rip disturbed areas to allow re-growth of vegetation cover 	Medium
Roads	<ul style="list-style-type: none"> Dust Groundwater contamination Noise Removal and disturbance of vegetation cover and natural 	Air quality Fauna Flora Groundwater Noise	Construction Commissioning Operational Decommissioning Closure	Medium	<ul style="list-style-type: none"> Maintenance of roads Dust control and monitoring Groundwater quality monitoring 	Low

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	<ul style="list-style-type: none"> habitat of fauna Soil contamination Surface disturbance 	<p>Soil Surface water</p>			<ul style="list-style-type: none"> Noise control and monitoring Speed limits Stormwater run-off control. Erosion control Immediately clean hydrocarbon spills Rip disturbed areas to allow re-growth of vegetation cover 	
Salvage yard	<ul style="list-style-type: none"> Groundwater contamination Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance Surface water contamination 	<p>Fauna Flora Groundwater Soil Surface water</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	Medium	<ul style="list-style-type: none"> Access control Maintenance of fence. Groundwater quality monitoring Stormwater run-off control Immediately clean hydrocarbon spill 	Low
Security access control point – mobile container	<ul style="list-style-type: none"> Dust Groundwater contamination Noise Removal and disturbance of vegetation cover and natural habitat of fauna Surface disturbance 	<p>Air quality Fauna Flora Groundwater Soil</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	Medium	<ul style="list-style-type: none"> Access control Maintenance of boom gates and container. Dust control and monitoring Noise control and monitoring Groundwater quality monitoring Immediately clean hydrocarbon spill Rip disturbed areas to allow re-growth of vegetation cover 	Low

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Stockpile area	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	<p>Air quality Fauna Flora Groundwater Noise Soil Surface water</p>	<p>Commissioning Operational Decommissioning Closure</p>	Medium	<ul style="list-style-type: none"> • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring • Drip trays • Stormwater run-off control. • Immediately clean hydrocarbon spills • Rip disturbed areas to allow re-growth of vegetation cover 	Low
Storage facility – mobile containers	<ul style="list-style-type: none"> • Removal and disturbance of vegetation cover and natural habitat of fauna • Groundwater contamination • Soil contamination • Surface disturbance 	<p>Fauna Flora Groundwater Soil Surface water</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	Low	<ul style="list-style-type: none"> • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover 	Very low
Topsoil storage area	<ul style="list-style-type: none"> • Dust • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil disturbance • Surface disturbance 	<p>Air quality Fauna Flora Groundwater Noise Soil Surface water</p>	<p>Commissioning Operational Decommissioning Closure</p>	Medium	<ul style="list-style-type: none"> • Dust control and monitoring • Stormwater run-off control. • Continuous rehabilitation • Rip disturbed areas to allow re-growth of vegetation cover • Backfilling of topsoil during rehabilitation 	Low
Washbay	<ul style="list-style-type: none"> • Groundwater contamination and usage • Removal and disturbance of 	<p>Groundwater Soil Surface water</p>	<p>Construction Commissioning Operational</p>	Medium	<ul style="list-style-type: none"> • Groundwater quality and level monitoring • Concrete floor with 	Low

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	<ul style="list-style-type: none"> vegetation cover and natural habitat of fauna Soil contamination 		Decommissioning Closure		<ul style="list-style-type: none"> oil/water separator Stormwater run-off control Immediately clean hydrocarbon spills 	
Waste rock dumps	<ul style="list-style-type: none"> Dust Groundwater contamination Noise Removal and disturbance of vegetation cover and natural habitat of fauna Surface disturbance 	Air quality Fauna Flora Groundwater Noise Soil Surface water Topography	Commissioning Operational Decommissioning Closure	Medium	<ul style="list-style-type: none"> Dust control and monitoring Groundwater quality monitoring Noise control and monitoring Stormwater run-off control. Rip disturbed areas to allow re-growth of vegetation cover 	Low
Water tank	<ul style="list-style-type: none"> Groundwater abstraction and usage Surface disturbance 	Fauna Flora Groundwater Surface water	Construction Commissioning Operational Decommissioning Closure	Low	<ul style="list-style-type: none"> Maintain water tanks and structures. Groundwater levels and quality monitoring. 	Very Low
Weighbridge	<ul style="list-style-type: none"> Dust Groundwater contamination Noise Removal and disturbance of vegetation cover and natural habitat of fauna Surface disturbance 	Air quality Fauna Flora Groundwater Noise Soil Surface water	Construction Commissioning Operational Decommissioning Closure	Medium	<ul style="list-style-type: none"> Access control Maintenance of weighbridge Dust control and monitoring Noise control and monitoring Groundwater quality monitoring Immediately clean hydrocarbon spill Rip disturbed areas to allow re-growth of 	Low

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Weighbridge control room – mobile container	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	Fauna Flora Groundwater Soil Surface water	Construction Commissioning Operational Decommissioning Closure	Low	vegetation cover <ul style="list-style-type: none"> • Access control • Maintenance of weighbridge control room • Dust control and monitoring • Noise control and monitoring • Groundwater quality monitoring • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover 	Very Low
Workshop	<ul style="list-style-type: none"> • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	Air quality Fauna Flora Groundwater Noise Soil Surface water	Construction Commissioning Operational Decommissioning Closure	Medium	<ul style="list-style-type: none"> • Access control • Concrete floor with oil/water separator • Maintenance of mobile containers • Noise control and monitoring • Groundwater quality monitoring • Immediately clean hydrocarbon spill 	Low

j) Summary of specialist reports.

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):-

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
Archaeological Impact Assessment (Appendix 8)	<p>Archaeologist, Stephan Gaigher of G&A Heritage Management Consultants, has been appointed to compile a Heritage Impact Assessment (HIA) Report for this project. Below is a summary of the findings of this report:</p> <p>“The study area was found to be basically devoid of any significant heritage sites. Some stone tools were observed but for the most part these were out of context and none of the identified tools comprised an occupation or occupational site.</p> <p>A single family graveyard was noted at the farm homestead, however this area will not be affected by the proposed development and as such the development does not pose any significant threat to this heritage site.</p> <p>The palaeontological significance of the site is low since it is overlain in most part by the Kalahari Group which is not conducive to the formation and preservation of fossils. The manganese deposits in the northern corner of the study area could be more sensitive and if mining is proposed in that area, a field based PIA is recommended. Although the</p>	X	Page 72

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	<p>northern section has a higher paleontological value, the impacts of the prospecting would still be minimal, however it should be noted that no specialist Palaeontological Assessment was done.</p> <p>Due to the small footprint of the proposed prospecting activities it is not anticipated that this will have any significant impact on heritage resources. The presence of scattered stone tools do however indicate the possible occurrence of such sites in other areas of the mining lease and should the prospecting lead to a mining rights application it is recommended that the whole area be subjected to a high resolution heritage impact assessment.”</p>		
<p>Palaeontological Impact Assessment</p>	<p>Palaeontologist, Dr. John Almond, has been contacted to assist with the PIA Report. This report shall only be available in the middle of May 2020 as Dr. Almond is currently out of the country.</p> <p>K2019315211 (South Africa) (Pty) Ltd undertakes that the desktop study shall be undertaken before any prospecting activities commence.</p>		

Attach copies of Specialist Reports as appendices.

k) Environmental impact statement

(i) Summary of the key findings of the environmental impact assessment;

- Ablution facilities (chemical toilets) may have a very low impact on groundwater and soil after mitigation.
- Blasting may have a medium impact on air quality, fauna, flora, noise, surface water and topography after mitigation.
- Boreholes may have a low impact on air quality, fauna, flora and noise.
- The diesel tanks may have a low impact on groundwater, soil and surface water after mitigation.
- The excavations may have a medium impact on air quality, fauna, flora, groundwater, noise, soil, surface water and topography after mitigation.
- The generators may have a medium impact on air quality, groundwater, noise, soil and surface water after mitigation.
- The office (mobile container) may have a very low impact on fauna, flora, groundwater and soil after mitigation.
- The processing plant may have a medium impact on air quality, fauna, flora, groundwater, noise, soil and surface water after mitigation.
- The roads may have a low impact on air quality, fauna, flora, groundwater, noise, soil and surface water after mitigation.
- The salvage yard may have a low impact on fauna, flora, groundwater, soil and surface water after mitigation.
- The security access point (mobile container) may have a low impact on air quality, fauna, flora, groundwater and soil after mitigation.
- The stockpile area may have a low impact on air quality, fauna, flora, groundwater, noise, soil and surface water after mitigation.
- The storage facility (mobile container) may have a very low impact on air quality, fauna, flora, groundwater, soil and surface water after mitigation.
- The topsoil storage site may have a low impact on air quality, fauna, flora, groundwater, noise, soil and surface water after mitigation.
- The washbay may have a low impact on groundwater, soil and surface water after mitigation.
- The waste rock dumps may have a low impact on air quality, fauna, flora, groundwater, noise, soil, surface water and topography after mitigation.
- The water tank may have a very low impact on fauna, flora, groundwater and surface water after mitigation.
- The weighbridge may have a low impact on air quality, fauna, flora, groundwater, noise, soil and surface water after mitigation.
- The weighbridge control room may have a very low impact on fauna, flora, groundwater, soil and surface water after mitigation.
- The workshop (mobile containers) may have a low impact on air quality, fauna, flora, groundwater, noise, soil and surface water.

(ii) Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. Attach as Appendix.

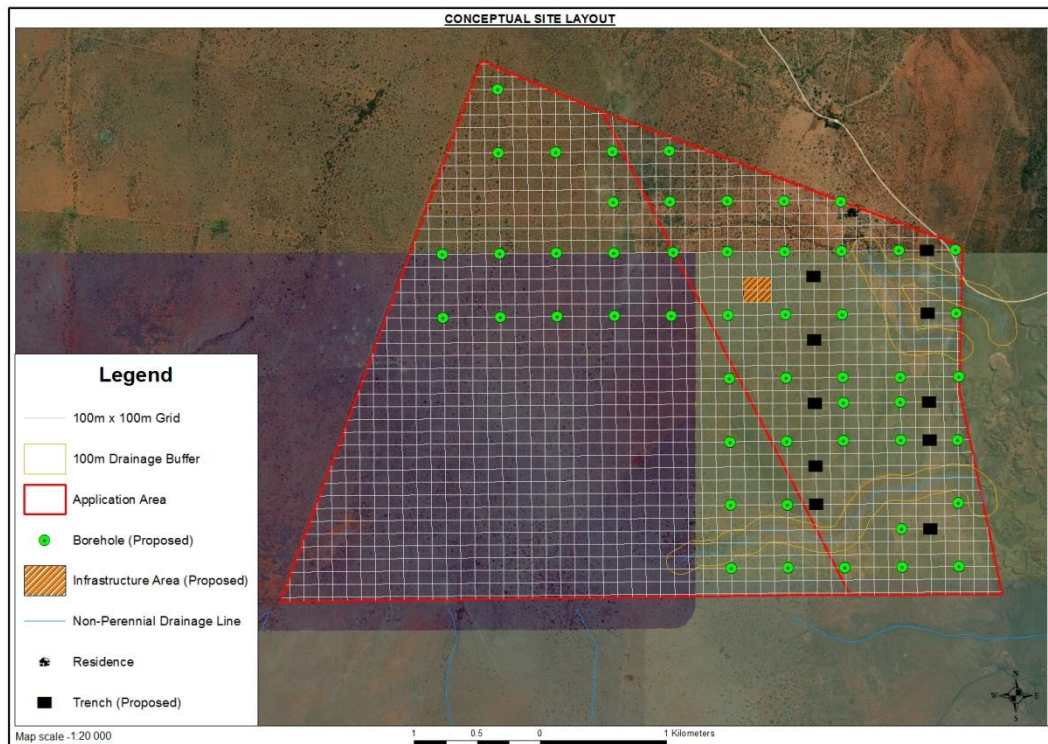


Figure 19 – Site layout with buffer zones

(iii) Summary of the positive and negative implications and risks of the proposed activity and identified alternatives;

During the operational stages of the prospecting operation, there is a possibility of sterilisation of the mineral reserves and resources due to improper placement of infrastructure. The infrastructure and stockpiles/dumps will alter the topography by adding features to the landscape. Topsoil removal and excavations will unearth the natural topography. The construction of infrastructure and various facilities in the prospecting area can also result in loss of soil due to erosion. Vegetation will be stripped in preparation for placement of infrastructure and excavations, and therefore the areas will be bare and susceptible to erosion.

The topsoil that is stripped and piled on surrounding areas can be eroded by wind and rain. The soil will be carried away during runoff. The cleared areas will be rehabilitated, but full restoration of soils might only occur over a number of years, subsequent to the re-establishment of vegetation. Furthermore, improper stockpiling and soil compaction can result in soil sterilisation. Leaching can also occur, resulting in the loss of nutrients.

There is also a possibility that equipment might leak oil, thus causing surface spillages. The hydrocarbon soil contamination will render the soil useless unless they are decontaminated. The storage of fuels on site might have an impact on soil if the tanks that are available on site are not properly monitored and maintained to avoid leakages. Then there is the potential that contaminated soil can be carried through runoff to contaminate water resources and soil stockpiled

for rehabilitation. Soil pollution is therefore possible, but through mitigation it can be minimised.

The loss of land capability and land use can occur in two ways. Firstly, through topsoil removal, disturbances and loss of soil fertility; and secondly through the improper placement of infrastructure. Most of the site has a land capability for grazing, but grazing activities can still be performed in areas not earmarked for the operation, and with proper rehabilitation the land capabilities and land use potential can be restored.

Groundwater could be directly affected if any deep excavations reach the primary aquifers. Furthermore, if any oil and fuel spillages occur during these scenarios and activities, then groundwater will be directly contaminated. Similarly, hazardous surface spillages will seep into the underlying aquifers and contaminate ground water. Improper handling of hazardous material will cause contamination of nearby surface water resources (non-perennial drainage lines) during runoff episodes. Lack of storm control structures will lead to erosion of stockpiles during heavy rains and runoff will carry suspended solids into the downstream environment. This might cause high silt load and affect stream flow. If no, or inadequate ablution facilities are available then workers might feel the need to use the veld for this purpose, which can contaminate natural resources.

Any excavations within the non-perennial drainage lines will impact on the surface water environment by altering their physical characteristics. These impacts include the alteration of flow patterns, ponding and an increase in the concentration of suspended solids and sedimentation. Furthermore, species eggs/seeds that usually remain dormant due to their adaptations to ephemerality, will be lost when the top biological layer of the dry water course are removed during excavations.

Bulk sampling activities on site will reduce the natural habitat for ecological systems to continue their operation. It is not expected that the areas of high ecological function will rehabilitate following disturbance events. It is likely that the pristine vegetation and any protected species will be destroyed during the operation. While general clearing of the area and bulk sampling activities destroy natural vegetation, invasive plants can increase due to their opportunistic nature in disturbed areas. If invasive plants establish in disturbed areas, it may cause an impact beyond the boundaries of the prospecting site. These alien invasive species are thus a threat to surrounding natural vegetation and can result in the decrease of biodiversity and ecological value of the area. Therefore, if alien invasive species are not controlled and managed, their propagation into new areas could have a high impact on the surrounding natural vegetation in the long term. With proper mitigation, the impacts can be substantially reduced.

The transformation of natural habitats to bulk sampling and associated infrastructure will result in the loss of habitat affected individual species, and ecological processes. In turn this will result in the displacement of faunal species dependent upon such habitat. Increased noise and vibration due to operational activities will disturb and possibly displace birds and other wildlife. Fast moving vehicles take a heavy toll in the form of road kills of small mammals, birds, reptiles, amphibians and a large number of invertebrates. Associated infrastructure will result in the loss of connectivity and fragmentation of natural habitat. Fragmentation of habitat will lead to the loss of migration corridors, in turn resulting in degeneration of the affected populations genetic make-up. This

results in a subsequent loss of genetic variability between meta-populations occurring within the study site. Pockets of fragmented natural habitats hinder the growth and development of populations.

During the operation the abovementioned activities have potential for dust generation. It is anticipated that the extent of dust emissions would vary substantially from day to day depending on the level of activity and the specific operations. The operation will typically have low to moderate levels of noise, along with man-influenced sounds such as traffic on the roads, activities on the farm and very occasional air traffic. The proposed operation will add a certain amount of noise to the existing noise in the area. However, levels of noise generated by prospecting activities especially with blasting can be substantial.

The impact of site generated trips on the traffic and infrastructure of the existing roads is expected to be moderate. Furthermore, if road safety is not administered it can have a high impact on the safety of fellow road users.

The activities on site have the potential to impact upon heritage resources. Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon these resources will be permanent and irreversible. Any movement of vehicles, equipment or personnel through areas containing these artefacts could result in the permanent destruction of the artefacts and loss of heritage resources.

The operation will create a number of new employment opportunities and uplift the local community. The magnitude of this impact will depend on the number of people that will be employed and the number of contractors sourced. An influx of people into the area could possibly impact on safety and security of local farm residents. During the decommissioning and at closure of the site, staff will most likely be retrenched, resulting in people being unable to find new employment for a long period of time.

Economic slump of the local towns after site closure is not considered to be an associated potential impact, because there are numerous other mining operations in the region. However, income streams from wage bills as well as goods and services contracts (at all geographical levels) will come to an end, reducing the monetary income of individuals and operation-related businesses.

It is likely, however that there will be residual positive economic impacts that are not fully reversed with the closure of the site, and that the economy will not decline to its original level prior to the development of this project. This is because the operation will generate substantial income for the regional and local economy, both directly and indirectly, during its life.

I) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.

- **Air quality:**
To limit the creation of nuisance dust the following management guidelines must be followed:
 - Avoidance of unnecessary removal of vegetation.
 - Routine spraying of unpaved site areas and roads utilized by the bulk sampling operation with water.
 - Speed limits of vehicles inside the prospecting right area must be strictly controlled to avoid excessive dust or the excessive deterioration of the roads to be used.
 - Continuous backfilling and rehabilitation of disturbed areas.
 - All cleared, disturbed or exposed areas must be re-vegetated as soon as practically possible to prevent the formation of additional sources of dust.
 - Drilling and blasting activities preferably to take place on wind-free days.

- **Archaeology:**
 - Buffer zones to be established and implemented should any archaeological sites be identified.
 - Adhering to any conditions set by SAHRA:
 - **Await Final Comment from SAHRA ...**
 - Adhering to the following recommendations and Chance Find Protocol of the Heritage Impact Assessment:
 - Chance Finds Protocol:
 - It is important to note that, although unlikely, sub-surface remains of heritage sites could still be encountered during construction of the project. Such sites would offer no surface indication of their presence due to the high state of alterations in some areas as well as heavy vegetation cover in other areas. The following indicators of unmarked sub-surface sites could be encountered:
 - Ash deposits
 - Bone concentrations, either animal or human
 - Ceramic fragments such as pottery shards either historic or pre-contact
 - Stone concentrations of any formal nature
 - The following recommendations are given should any sub-surface remains of heritage sites be identified as indicated above:
 - All operators of excavation equipment should be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures should they be encountered.
 - All construction in the immediate vicinity (50m radius of the site) should cease.
 - The heritage practitioner should be informed as soon as possible.
 - In the event of obvious human remains the SAPS should be notified.
 - Mitigation measures should not be attempted.
 - The area in a 50m radius of the find should be cordoned off with hazard tape.

- Public access should be limited.
- The area should be placed under guard.
- No media statements should be released until such time as the heritage practitioner has had enough time to analyze the finds.

- Fauna:
To ensure a minimum of impact to animals the following management guidelines will be followed:
 - Speed limits of vehicles inside the prospecting right area must be strictly controlled to avoid road kills.
 - Continuous backfilling of open excavations (created by the bulk sampling activities).
 - Operational areas must be low angled as a preventative measure to ensure an escape route for animals.
 - No hunting (snares) must be allowed at the prospecting right area or in the surrounding area.
 - Maintenance of firebreaks.

- Flora
 - No trees or shrubs must be felled or damaged for the purpose of obtaining firewood.
 - Management must take responsibility to control declared invader or exotic species on the site. The following control methods must be used:
 - "The plants will be uprooted, felled or cut off and can be destroyed completely."
 - "The plants will be treated with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide."
 - Valid permits from DAFF must be obtained before any protected plant species are removed or damaged.
 - Continuous backfilling of open excavations (created by bulk sampling activities) and spreading of previously stored topsoil over the rehabilitated areas.
 - All rehabilitated areas, where applicable and possible, must be seeded with a vegetation seed mix adapted to reflect the local indigenous flora that was present prior to bulk sampling activities commenced, if the natural succession of vegetation is unacceptably slow.
 - Fires may only be allowed in facilities or equipment specially constructed for this purpose. A firebreak must be cleared around the perimeter of the site.
 - The end objective of the re-vegetation program must be to achieve a stable self-sustaining habitat unit.

- Groundwater
 - Vehicle- and equipment maintenance must only be allowed within the maintenance area. Only emergency breakdowns may be allowed in other areas.
 - The following procedure must be followed if a vehicle or piece of equipment would break down inside an excavation and outside of the maintenance area.
 - Drip pans must be placed at all points where diesel, oil or hydraulic fluid may drip and in so doing contaminate the soil.
 - All efforts must be made to move the broken down vehicle or piece of equipment to the maintenance area.
 - If the vehicle/piece of equipment cannot be moved, the broken part must firstly be drained of all fluid. The part must then be removed and taken to the maintenance area.

- No repairs may be allowed outside the maintenance area except for emergencies.
- Equipment used as part of the proposed operation must be adequately maintained so as to ensure that oil, diesel, grease or hydraulic fluid does not leak during operation.
- Fuel and other petrochemicals must be stored in steel receptacles that comply with SANS 10089-1:2003 (SABS 089-1:2003) standards. An adequate bund wall, 150% of volume of the largest storage receptacle, must be provided for fuel and diesel areas to accommodate any spillage or overflow of these substances. The area inside the bund wall must be lined with an impervious lining to prevent infiltration of the fuel into the soil (and ultimately groundwater).
- Proper sanitation facilities must be provided for employees. No person may pollute the workings with faeces or urine, misuse the facilities provided or inappropriately foul the surrounding environment with faeces or urine. Acceptable hygienic and aesthetic practices must be adhered to.
- The workshops, washing bays and conservancy tanks should be constructed far away from significant aquifer systems.
- Conservancy tanks must be adequately maintained.
- Groundwater levels and water quality must be measured monthly.
- Rainfall must be recorded.
- Data must be analysed by a qualified hydrogeologist annually.
- SOP for storage, handling and transport of different hazardous materials.
- Place oil traps (drip trays) under stationary vehicles, only re-fuel at fuelling stations, construct structures to trap fuel spills at fuelling stations, immediately clean oil and fuel spills and dispose of contaminated material at licensed sites only.
- Ensure good housekeeping rules.
- Noise
 - As a minimum, ambient noise levels emanating from the prospecting activities may not exceed 45dBA at the site boundary.
 - The Company must comply with the Occupational Noise Regulations of the Occupational Health and Safety Act, Act 85 of 1993.
 - The Company must comply with the measures for good practice with regard to management of noise related impacts during construction and operation.
 - The management objective must be to reduce any level of noise, shock and lighting that may have an effect on persons or animals, both inside the plant area and that which may migrate outside the plant area.
 - When the equivalent noise exposure, as defined in the South African Bureau of Standards Code of Practice for the Measurement and Assessment of Occupational Noise for Hearing Conservation Purposes, SABS 083 as amended, in any place or in any mine or works where persons may travel or work, exceeds 82 dB (A), the site manager will take the necessary steps to reduce the noise below this level.
 - Hearing protection must be provided to all employees where attenuation cannot be implemented.
 - A buffer zone of 1.5km must be placed around all residential areas, in which buffer zone no plant may be established.
 - If any complaints are received from the public or state department regarding noise levels the levels will be monitored at prescribed monitoring points.
 - Blasting noise and vibrations must be monitored during each blast.

Mechanical equipment:

- All mechanical equipment must be in good working order and vehicles must adhere to the relevant noise requirements of the Road Traffic Act.
- All vehicles in operation must be equipped with a silencer on its exhaust system.
- Safety measures, which generate noise such as reverse gear alarms on large vehicles, must be appropriately calibrated / adjusted.

Screening / Migration control:

- Appropriate measures must specifically be installed and / or employed at the plant to act as screen and to reflect/reduce the noise.
- Appropriate non-metallic washers/insulation must be used with any joining of apparatus made from materials such as corrugated iron. Such apparatus must be maintained in a fixed position.

- Palaeontology:

- The ECO responsible for the mineral prospecting programme should be aware of the potential for exposure of well-preserved stromatolites through trenching and in borehole cores. A Chance Fossil Finds Procedure for this development is outlined in tabular form at the end of the report. Recommended mitigation of chance fossil finds during prospecting involves safeguarding of the fossils (preferably *in situ*) by the responsible ECO and reporting of all significant finds to the SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Phone: +27 (0)21 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za). Where appropriate, judicious sampling and recording of fossil material and associated geological data by a qualified palaeontologist, appointed by the developer, may be required. Any fossil material collected should be curated within an approved repository (museum / university fossil collection).
- Chance Fossil Finds Procedure:
 - Once alerted to fossil occurrence: alert site foreman, stop work immediately, safeguard site with security tape / fence / sand bags if necessary.
 - Record key data while fossil remains are still *in situ*:
 - Accurate geographic location – describe and mark on site map / 1:50 000 map / satellite image / aerial photo
 - Context – describe position of fossils within stratigraphy, depth below surface.
 - Photograph fossils *in situ* with scale, from different angles, including images showing context.
 - If possible to leave fossils *in situ*:
 - Alert Heritage Resources Authority and project palaeontologist who will advise on any necessary mitigation.
 - Ensure fossil site remains safeguarded until clearance is given by the Heritage Resources Authority for work to resume.
 - If not feasible to leave fossils *in situ*:
 - Carefully remove fossils, as far as possible still enclosed within the original sedimentary matrix.
 - Photograph fossils against a plain, level background, with scale.
 - Carefully wrap fossils in several layers of newspaper / tissue paper / plastic bags.

- Safeguard fossils together with locality and collection data in a box in a safe place for examination by a palaeontologist.
 - Alert Heritage Resources Authority and project palaeontologist who will advise on any necessary mitigation.
 - If required by Heritage Resources Authority, ensure that a suitably-qualified specialist palaeontologist is appointed as soon as possible by the developer.
 - Implement any further mitigation measures proposed by the palaeontologist and Heritage Resources Authority.
- Safety
 - No employees may reside on the active prospecting site. Transport must be arranged for employees on a daily basis from Kathu to the site.
 - Access and haul roads must be maintained.
 - Security access point to ensure monitoring of access to the site.
 - Soil
 - In all places of development the first 300mm of loose or weathered material found will be classified as a growth medium. The topsoil must be removed, where possible, from all areas where physical disturbance of the surface will occur.
 - In all areas where the above growth medium will be impacted on, it must be removed and stockpiled on a dedicated area. The maximum height of stockpiles may not exceed 2 meters.
 - The growth medium/topsoil must be used during the rehabilitation of any impacted areas, after sloping in order to re-establish the same land capability.
 - If any soil is contaminated during the life of the prospecting operation, it must either be treated on site or be removed together with the contaminant and placed in acceptable containers to be removed with the industrial waste to a recognized facility or company.
 - Erosion control in the form of re-vegetation and contouring of slopes must be implemented on disturbed areas in and around the site.
 - Topsoil must be kept separate from overburden and may not be used for building or maintenance of access roads.
 - The stored topsoil must be adequately protected from being blown away or being eroded.
 - Compacted areas must be ripped to a depth of 300mm, where possible, during the continuous rehabilitation, decommissioning and closure phases of the operation in order to establish a growth medium for vegetation.
 - Vehicle movement must be confined to established roads for as far as practical in order to prevent the compaction of soils.
 - Surface water
 - The disposal of oil, grease and related industrial waste must be transported to the stores area where it will be stored in steel containers supplied by an oil recycling contractor. All oil and grease must be removed on a regular basis from the operation by a registered approved contractor.
 - All refuse and waste from the different sections must be handled according to NEMA Guidelines. Recycling of waste is encouraged in all the consumer sections of the operation, where recyclable materials must be collected before dumping them in the domestic waste storage area.
 - All non-biodegradable (recyclable) refuse such as glass bottles, plastic bags and metal scrap must be stored in a container in the waste area and collected on a regular basis and disposed of at a recognized disposal facility.

- Erosion and storm water control measures must be implemented.
- An application for an Integrated Water Use License must be submitted at the Department of Water Affairs for all actions to be performed which requires authorization in terms of water uses.
- Vehicle repairs must only take place within the maintenance area for vehicles. Repairs within open excavations must be limited to emergency break downs with drip trays.
- Re-fuelling must only take place in the re-fuelling area. If this is found not be practical, drip trays must be used whenever re-fuelling takes place outside of this area.
- During rehabilitation the applicant must endeavour to reconstruct flow patterns in such a way that surface water flow is in accordance with the natural drainage of the area as far as practically possible.
- Buffer zones must be placed around all non-perennial drainage lines in which no bulk sampling activities may take place.
- Topography
 - All open excavations must be backfilled if and when possible and made safe so as to reflect as far as possible the pre-prospecting topography of the area.
 - All temporary features, e.g. plant, containers and stockpiling, must be removed and handled in the prescribed manner during rehabilitation.
- Visual
 - Lights must be fixed at an angle to ensure that it does not cause a disturbance to the surrounding environment at night.
 - Open excavations must be subject to progressive backfilling and made safe (including the re-establishment of vegetation).
 - Permanent structures or features that are part of the proposed prospecting operation must be kept neat and well presented.
 - Waste material of any description must be removed from the prospecting area on a regular basis and be disposed of at a recognized landfill facility.

m) Final proposed alternatives.

(Provide an explanation for the final layout of the infrastructure and activities on the overall site as shown on the final site map together with the reasons why they are the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment.)

The locality of the infrastructure was decided upon after taking into account of the following:-

- Locality of the ore bodies;
- Topography of the area;
- Environmental features;
- Operational requirements; and
- Discussions with the surface owner.

n) Aspects for inclusion as conditions of Authorisation.

(Any aspects which have not formed part of the EMPr that must be made conditions of the Environmental Authorisation.)

The general conditions; including management of activity, monitoring, recording and reporting to the Department, commissioning of the activity, operation of the activity, site closure and decommissioning as well as non-compliances; as required in terms of the Environmental Impact Assessment Regulations promulgated in terms of NEMA (Act 107 of 1998) as well as objectives and requirements of relevant legislation, policies and guidelines must be included in the Authorisation.

o) Descriptions of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed.)

The abovementioned mitigation measures are tried and tested over many years in the iron ore and manganese ore mining industry. The Company must monitor the potential impacts throughout the life of operation, and mitigate any deviations detected. This has been proven to be very effective in existing operations.

The EAP who compiled this document and the specialists who compiled the respective specialist reports have extensive knowledge in their field and it is hereby assumed that the above assumptions are adequate and that the information provided is in the region of 85% - 95% correct.

p) Reasoned opinion as to whether the proposed activity should or should not be authorised

i) Reasons why the activity should be authorized or not.

Five measures of economic impacts can be used to demonstrate the potential effect of the proposed prospecting operation on the local economy:

- Employment - The extent of employment can be measured as number of jobs or in terms of full time equivalents.
- Payroll income - The gross remuneration of employees in terms of salaries and wages.
- Capital Expenditure (CAPEX) - The total amount spent on the purchasing of fixed assets and total spent on construction.
- Operating expenditure and maintenance (OPEX) - The total amount spent locally by businesses on goods and services, excluding salaries and wages as well as rents or interest.
- Revenue - The total value of sales arising from business activity at the prospecting operation.

The abovementioned positive impacts will be lost if the proposed prospecting project is not developed.

It is recommended that the activity should be authorized for the above reasons.

ii) Conditions that must be included in the authorisation

(1) Specific conditions to be included into the compilation and approval of EMPr:

The general conditions; including management of activity, monitoring, recording and reporting to the Department, commissioning of the activity, operation of the activity, site closure and decommissioning as well as non-compliances; as required in terms of the Environmental Impact Assessment Regulations promulgated in terms of NEMA (Act 107 of 1998) as well as objectives and requirements of relevant legislation, policies and guidelines must be included in the Authorisation.

(2) Rehabilitation requirements:

The applicant must provide to the DMR, before execution of the Prospecting Right, a financial rehabilitation guarantee to the amount as calculated in terms of the Financial Quantum Guideline and approved by the DMR.

q) Period for which the Environmental Authorisation is required.

Two Years

r) Undertaking

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic Assessment Report and the Environmental Management Programme Report.

The Company's undertaking to meet the requirements of the Environmental Impact Assessment and Environmental Management Programme Report is attached at the end of the EMPr and is applicable to both documents.

s) Financial Provision

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

(i) Explain how the aforesaid amount was derived.

The Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) requires a holder of a right to provide to the Department of Mineral Resources (DMR) sufficient financial provision for environmental rehabilitation and closure requirements of mining operations. Regulation 54 of the MPRDA, 'Quantum of financial provision', as well as the 'Guideline document for evaluation of the quantum of closure-related financial provision provided by a mine' has been used to calculate the required financial provision for the Ringside Project.

Furthermore, the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires a Right Holder to make financial provision for rehabilitation and remediation; decommissioning and closure activities as well as remediation and management of latent or residual environmental impacts. The 'Regulations pertaining to the financial provision for prospecting, exploration, mining or production operations' as published on 20 November 2015 under Government Notice R. 1147 of Government Gazette 39425 has also been used to guide the calculations in this report.

• **Section A.1, number 1.2:**

In terms of the guideline document 'the Master Rates in Section B will be updated on an annual basis, based on CPIX or similar approved method. The first of these updates will take place during 2005.'

The 2004 Master Rates were updated annually in terms of the published STATS SA CPI rates.

Table B2 – CPI headline year-on-year rates³

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
2004	0,2	0,7	0,4	0,2	0,6	1,2	1,6	1,0	1,3	2,4	3,7	3,4	1,4
2005	3,0	2,6	3,0	3,4	3,3	2,8	3,4	3,9	4,4	4,0	3,4	3,6	3,4
2006	4,0	3,9	3,4	3,3	3,9	4,9	5,0	5,4	5,3	5,4	5,4	5,8	4,7
2007	6,0	5,7	6,1	7,0	6,9	7,0	7,0	6,7	7,2	7,9	8,4	9,0	7,1
2008	9,3	9,8	10,6	11,1	11,7	12,2	13,4	13,7	13,1	12,1	11,8	9,5	11,5
2009	8,1	8,6	8,5	8,4	8,0	6,9	6,7	6,4	6,1	5,9	5,8	6,3	7,1
2010	6,2	5,7	5,1	4,8	4,6	4,1	3,7	3,5	3,2	3,4	3,6	3,5	4,3
2011	3,7	3,7	4,1	4,2	4,6	5,0	5,3	5,3	5,7	6,0	6,1	6,1	5,0
2012	6,3	6,1	6,0	6,1	5,7	5,5	4,9	5,0	5,5	5,6	5,6	5,7	5,6
2013	5,4	5,9	5,9	5,9	5,6	5,5	6,3	6,4	6,0	5,5	5,3	5,4	5,7
2014	5,8	5,9	6,0	6,1	6,6	6,6	6,3	6,4	5,9	5,9	5,8	5,3	6,1
2015	4,4	3,9	4,0	4,5	4,6	4,7	5,0	4,6	4,6	4,7	4,8	5,2	4,6
2016	6,2	7,0	6,3	6,2	6,1	6,3	6,0	5,9	6,1	6,4	6,6	6,8	6,4
2017	6,6	6,3	6,1	5,3	5,4	5,1	4,6	4,8	5,1	4,8	4,6	4,7	5,3
2018	4,4	4,0	3,8	4,5	4,4	4,6	5,1	4,9	4,9	5,1	5,2	4,5	4,7
2019	4,0	4,1											

³ Rates shown in Table B2 show the official inflation rates as published in the monthly CPI release.

• **Section B.1 – Process followed:**

- **Step 1: Determine primary mineral and saleable mineral by-products:**
In terms of Table B.12 the mineral prospected for falls under base metals (iron ore and manganese ore) for a small mine with mine, mine waste, plant and plant waste.

- **Step 2A: Determine primary risk class:**
The primary risk class is 'C' in terms of Table B.12.

- **Step 2B: Revise primary risk class (if applicable) based on saleable by-products:**
Not applicable. There are no saleable by-products.

- **Step 3: Determine environmental sensitivity of mine area:**
The criteria in terms of Table B.4 were used to determine the area sensitivity:

Sensitivity	Sensitivity criteria		
	Biophysical	Social	Economic
Low		X	
Medium	X		X
High			

The area sensitivity has been determined as 'Medium'.

- **Step 4: For Class A or B mining operations:**
Even though the primary risk class has been determined as 'C' (Low Risk) in terms of Table B. 12, the Company has opted to follow the calculations as per the quantum guideline to ensure they optimally provide for any impact they will have on the environment.

▪ **Step 4.1: Determine level of information available:**
The level of information available for the operation is classified as 'limited' as this is a calculation based on the proposed footprints for the prospecting operation. The Company has not yet received a Prospecting Right and thus they have not commenced with the construction phase of its operation.

▪ **Step 4.2: Identify closure components:**
The bulk sampling will be open-cast.

All closure components in terms of Table B.5 for open-cast operations are applicable to the quantum calculation.

▪ **Step 4.3: Identify unit rates for closure components:**

Component	Risk Class	Sensitivity	Multiplication Factor	Unit	Master Rate 2004	Master Rate 2019
1	C	Medium	1.00	m ³	6.82	15.33
2(A)	C	Medium	1.00	m ²	95.00	213.51
2(B)	C	Medium	1.00	m ²	140.00	314.65
3	C	Medium	1.00	m ²	17.00	38.21
4(A)	C	Medium	1.00	m	165.00	370.84
4(B)	C	Medium	1.00	m	90.00	202.28
5	C	Medium	1.00	m ²	190.00	427.03
6	C	Medium	0.52	Ha	96,700.00	217,333.98

7	N/A	N/A	N/A	N/A	N/A	N/A
8(A)	C	Medium	1.00	Ha	66,400.00	144,739.49
8(B)	C	Medium	1.00	Ha	82,700.00	185,868.87
8(C)	C	Medium	0.66	Ha	240,200.00	539,851.31
9	C	Medium	1.00	Ha	55,600.00	124,961.42
10	C	Medium	1.00	Ha	52,600.00	118,218.90
11	C	Medium	1.00	Ha	52,600.00	118,218.90
12	C	Medium	1.00	-	60.00	134.85
13	C	Medium	0.25	-	20,000.00	44,950.15
14	C	Medium	1.00	-	7,000.00	15,732.55

▪ **Step 4.4: Identify and apply weighting factors:**

Weighting Factor 1 = 1.00

The nature of the terrain has been determined as Flat: Generally flat over the mine area.

Weighting Factor 2 = 1.05

The proximity to urban area where goods and services are to be supplied has been determined as Peri-urban: Less than 150km from a developed urban area.

▪ **Step 4.5: Identify areas of disturbance:**

No	Description	Quantity
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines) - Iron Ore (~20m x 30m footprint) x 5m average height = 3 000m ³ - Manganese Ore (~20m x 30m footprint) x 5m average height = 3 000m ³	<u>6 000m³</u>
2(A)	Demolition of steel buildings and structures - Diesel tank - Generator - Office - Weighbridge - Weighbridge control room - Workshop	200m ² 25m ² 18m ² 60m ² 18m ² 18m ² <u>339m²</u>
2(B)	Demolition of reinforced concrete buildings and structures Not applicable – The Company will not establish any reinforced concrete buildings or structures	<u>0m²</u>
3	Rehabilitation of access roads Provision is made for 500m x 10m wide roads	<u>5 000m²</u>
4(A)	Demolition and rehabilitation of electrified railway lines There are no electrified railway lines on the site.	<u>0m</u>
4(B)	Demolition and rehabilitation of non-electrified railway lines There are no non-electrified railway lines on the site.	<u>0m</u>
5	Demolition of housing and/or administration facilities - Washbay	<u>600m²</u>

6	Opencast rehabilitation including final voids and ramps Bulk sampling excavations *Note: Provision is made for a maximum footprint of 0.38 hectares of open excavations at any one time.	<u>0.38Ha</u>
7	Sealing of shafts adits and inclines Not applicable	<u>0m³</u>
8(A)	Rehabilitation of overburden and spoils - Stockpile area (0.2 Ha) - Waste rock dumps (0.1 Ha)	<u>0.3Ha</u>
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential) Not applicable	<u>0Ha</u>
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential) Not applicable	<u>0Ha</u>
9	Rehabilitation of subsided areas There are no subsided areas	<u>0Ha</u>
10	General surface rehabilitation: - Boreholes x 50 (10m x 10m surface disturbance each) = 0.5 Ha - Plant area (0.5Ha Fe & 0.5Ha Mn) - Salvage yard = 0.1 Ha	<u>1.6Ha</u>
11	River diversions There are no rivers on the site	<u>0Ha</u>
12	Fencing No provision is made for fencing	<u>0m</u>
13	Water management - Water tank (9m ²)	<u>0Ha</u>
14	2 to 3 years maintenance and aftercare Provision is made for 2 hectares aftercare and maintenance.	<u>2Ha</u>
15 (A) & 15(B)	Specialist study Provision is made for the following specialist studies upon closure of the operation: - Screening Level Risk Assessment	<u>R25 000</u>

▪ **Step 4.6: Identify closure costs from specialists studies**

The Company shall conduct a Screening Level Risk Assessment upon closure of its operation in accordance with Table B.9 of the Quantum Guideline.

▪ **Step 4.7: Calculate closure costs:**

CALCULATION OF THE QUANTUM - 2019

Applicant:

K2019315211 (SOUTH AFRICA) (PTY) LTD

Ref No:

NC12395 PR

Date:

NOVEMBER 2019

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate (2019)	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	6 000.00	15.33	1	1	91 968.01
2 (A)	Demolition of steel buildings and structures	m2	339.00	213.51	1	1	72 380.98
2(B)	Demolition of reinforced concrete buildings and structures	m2	0.00	314.65	1	1	0.00
3	Rehabilitation of access roads	m2	5 000.00	38.21	1	1	191 038.14
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0.00	370.84	1	1	0.00
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0.00	202.28	1	1	0.00
5	Demolition of housing and/or administration facilities	m2	600.00	427.03	1	1	256 215.86
6	Opencast rehabilitation including final voids and ramps	ha	0.380	217 333.98	0.52	1	42 945.19
7	Sealing of shaft adits and inclines	m3	0.00	114.62	0	1	0.00
8 (A)	Rehabilitation of overburden and spoils	ha	0.300	144 739.49	1	1	43 421.85
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0.00	185 868.87	1	1	0.00
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0.00	539 851.31	0.66	1	0.00
9	Rehabilitation of subsided areas	ha	0.00	124 961.42	1	1	0.00
10	General surface rehabilitation	ha	1.60	118 218.90	1	1	189 150.24
11	River diversions	ha	0.00	118 218.90	1	1	0.00
12	Fencing	m	0.00	134.85	1	1	0.00
13	Water management	ha	0.00	44 950.15	0.25	1	0.00
14	2 to 3 years of maintenance and aftercare	ha	2.00	15 732.55	1	1	31 465.11
15 (A)	Specialist study	Sum	25 000.00			1	25 000.00
15 (B)	Specialist study	Sum				1	0.00
Total of 1 - 15 above							943 585.37

weighting factor 2
1.05

Subtotal 1	990 764.64
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1	Preliminary and General	56 615.12	56 615.12
2	Contingencies	94 358.54	94 358.54
Subtotal 2		1 141 738.30	

VAT (15%)	171 260.75
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Grand Total	1 312 999.05
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(ii) Confirm that this amount can be provided for from operating expenditure.

(Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining Work Programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be.)

The Company has made provision in the Prospecting Work Programme for environmental rehabilitation. The calculation above indicates a 'worst-case scenario' whereby all surface disturbances will be open at any one time.

The Company undertakes to, upon request of DMR, provide a financial guarantee, as per the quantum calculations to the amount of R1 312 999.05 to cover the financial costs related to rehabilitation.

t) Deviations from the approved scoping report and plan of study:

i) Deviations from the methodology used in determining the significance of potential environmental impacts and risks

(Provide a list of activities in respect of which the approved scoping report was deviated from, the reference in this report identifying where the deviation was made, and a brief description of the extent of the deviation.)

Not applicable – No deviations from the methodology proposed in the Scoping Report.

ii) Motivation for the deviation

Not applicable – No deviations from the methodology proposed in the Scoping Report.

u) Other information required by the competent Authority:

i) Compliance with the provisions of Sections 24(4)(a) and (b) read with Section 24(3)(a) and (7) of the National Environmental Management Act (Act 107 of 1998). The EIA report must include the:-

(1) Impact on the socio-economic conditions of any directly affected person.

(Provide the results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an Appendix and confirm that the applicable mitigation is reflected in this document.)

- Impact on landowner:
Positive: Compensation of land lost to prospecting.
Negative: Loss of grazing land.
- Impact on other I&AP:
Five measures of economic impacts can be used to demonstrate the potential effect of the proposed prospecting operation on the local economy:
 - Employment - The extent of employment can be measured as number of jobs or in terms of full time equivalents.
 - Payroll income - The gross remuneration of employees in terms of salaries and wages.
 - Capital Expenditure (CAPEX) - The total amount spent on the purchasing of fixed assets and total spent on construction.
 - Operating expenditure and maintenance (OPEX) - The total amount spent locally by businesses on goods and services, excluding salaries and wages as well as rents or interest.
 - Revenue - The total value of sales arising from business activity at the prospecting operation.

The abovementioned positive impacts will be lost if the proposed prospecting project is not developed.

(2) Impact on any national estate referred to in Section 3(2) of the National Heritage Resources Act.

Archaeologist, Stephan Gagher of G&A Heritage Management Consultants, has been appointed to compile a Heritage Impact Assessment (HIA) Report for this project. Below is a summary of the findings of this report:

“The study area was found to be basically devoid of any significant heritage sites. Some stone tools were observed but for the most part these were out of context and none of the identified tools comprised an occupation or occupational site.

A single family graveyard was noted at the farm homestead, however this area will not be affected by the proposed development and as such the development does not pose any significant threat to this heritage site.

The palaeontological significance of the site is low since it is overlain in most part by the Kalahari Group which is not conducive to the formation and preservation of fossils. The manganese deposits in the northern corner of the study area could be more sensitive and if mining is proposed in that area, a field based PIA is recommended. Although the northern section has a higher paleontological value, the impacts of the prospecting would still be minimal, however it should be noted that no specialist Palaeontological Assessment was done.

Due to the small footprint of the proposed prospecting activities it is not anticipated that this will have any significant impact on heritage resources. The presence of scattered stone tools do however indicate the possible occurrence of such sites in other areas of the mining lease and should the prospecting lead to a mining rights application it is recommended that the whole area be subjected to a high resolution heritage impact assessment.”

v) Other matters required in terms of Sections 24(4)(a) and (b) of the Act.

(The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by Section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as Appendix.)

No viable alternatives were found.

DRAFT

PART B
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

a) Details of the EAP

(Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, Section 1(a) herein as required.)

Refer to Part A, page 4 of this document for the details of EAP, Ms. T. Jooste.

b) Description of the Aspects of the Activity

(Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in Part A, Section 1(h) herein as required.)

The aspects of the activity have been included in Part A.

c) Composite Map

(Provide a map (Attached as an Appendix) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities on the preferred site, indicating any areas that should be avoided, including buffers.)

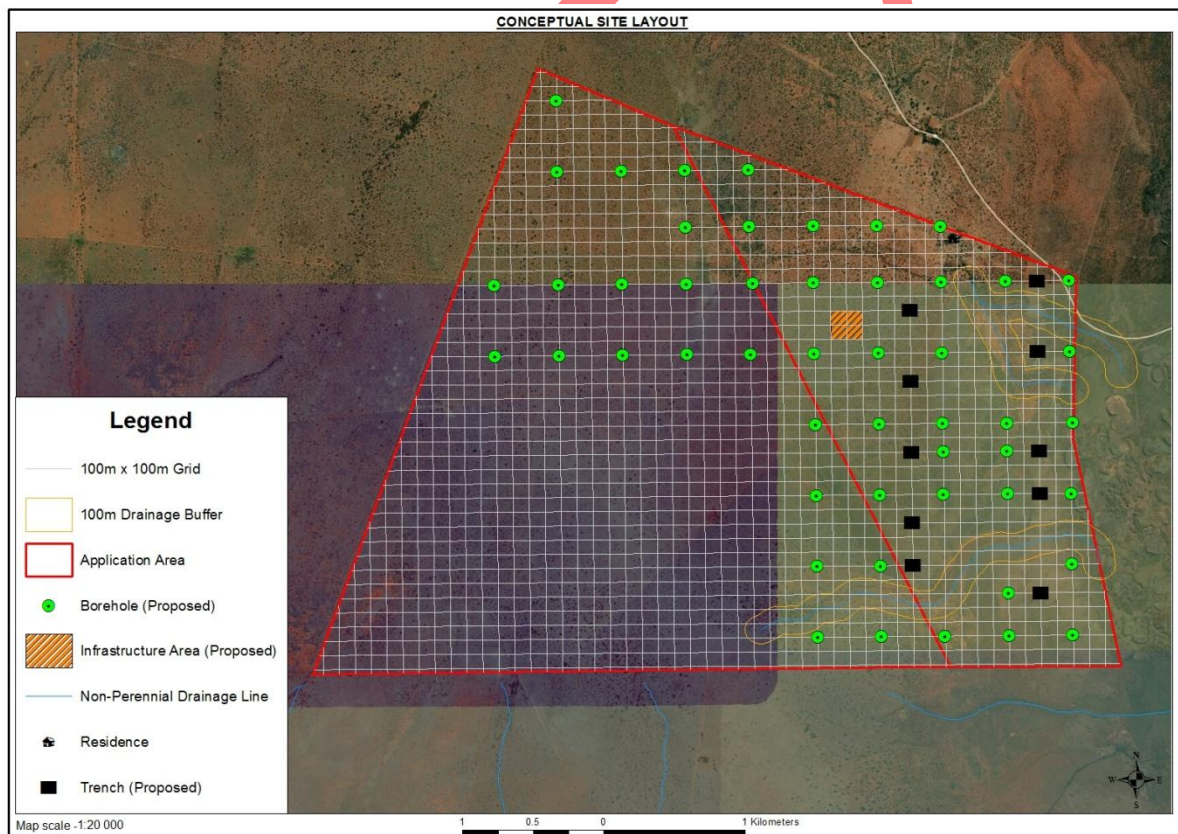


Figure 20 – Site layout, including buffer zones

d) Description of Impact Management Objectives including management statements

(i) Determination of closure objectives

(Ensure that the closure objectives are informed by the type of environment described.)

The main closure objectives of the Company's planned prospecting operation are:

- To restore the site to its pre-prospecting land capability in a sustainable matter.
- To prevent the sterilization of any ore reserves.
- To prevent the establishment of any permanent structures or features.

- To manage and limit any impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued.
- To establish a stable and self sustainable vegetation cover.
- To limit and rehabilitate any erosion features and prevent any permanent impact to the soil capability.
- To limit and manage the visual impact of the prospecting activities.
- To safeguard the safety and health of humans and animals on the site.
- To close the prospecting operation efficiently, cost effectively and in accordance with Government Policy.

(ii) The process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity:

Environmental management on the site must be conducted in terms of the Company's Environmental Management System. This system must be used to develop and implement its environmental policy. The environmental policy must:

- be in line with the nature, scale and environmental impacts of the organizations activities;
- include a commitment to continual improvement and prevention of pollution;
- include a commitment to comply with applicable legal requirements or other codes of good practice;
- provide a framework for setting and reviewing environmental objectives and targets;
- be documented, implemented, maintained and reviewed at least annually;
- be available to the public;
- establish, maintain and implement procedures to identify the environmental aspects of future or planned new developments or modified activities;
- establish, maintain, and implement a procedure to identify and have access to applicable legal and other requirements to which the organization subscribes related to its environmental aspects;
- establish and maintain documented environmental objectives and targets; establish, maintain and implement a programme for achieving the objectives and targets by designating responsibilities and setting timeframes, and provide the necessary evidence that the said targets and objectives have been achieved;
- ensure the availability of resources;
- document and communicate defined roles, responsibilities and authorities;
- provide training and awareness;
- establish and maintain communication procedures;
- keep record of all EMS documentation;
- identify and plan those operations that are associated with the identified significant environmental aspects consistent with the environmental policy, objectives and targets;
- establish, implement and maintain a procedure for emergency preparedness and response;
- establish, implement and maintain a procedure for dealing with actual and potential nonconformities, taking corrective and preventative action;
- conduct internal audits at planned intervals; and
- review the EMS at planned intervals.

(iii) Potential risk of Acid Mine Drainage:

(Indicate whether or not the mining can result in acid mine drainage.)

The prospecting activities of the Company will not result in acid mine drainage.

(iv) Steps taken to investigate, assess, and evaluate the impact of acid mine drainage:

The mineral Pyrite, with a chemical composition of iron disulfide (FeS_2), is the most common sulphide mineral which causes acid mine drainage. It is highly unlikely that this occurs in the geological formation of the prospecting right area. However, should this mineral be found (in minimal quantities at most), the very low rainfall of the Kathu area will not be sufficient to cause the chemical reaction of the mineral which causes mine acid drainage.

(v) Engineering or mine design solutions to be implemented to avoid or remedy acid mine drainage:

Not applicable

(vi) Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage:

Not applicable

(vii) Volumes and rate of water use required for the mining, trenching or bulk sampling operation.

The only water use will be for domestic use calculated at 100 litres per day / employee.

(viii) Has a water use license been applied for?

The Acting Director-General of Water and Sanitation has, in terms of Section 39 of the National Water Act, published the revised General Authorisation (GNR 538 of 02 September 2016) pertaining to the taking and storing of water, water uses in terms of Section 21(a) and 21(b) of the National Water Act respectively.

The General Authorisation came into effect on 1 March 2017 and replaced the General Authorisation for the taking and storing of water contained in GNR399 of 26 March 2004.

In terms of clause 7.2 of the Schedule to the 2017 General Authorisations, registration of a water use is only required if more than 10m^3 of water is taken from a groundwater resource per day on average over a year on a property.

The Company's water use shall not exceed 10 000 litres (10m^3) per day.

Accordingly, the Company is not required to apply for a water use license or register its water use after 3 March 2017 with the responsible authority by virtue of clause 7 of the 2017 General Authorisations.

(ix) Impacts to be mitigated in their respective phases

Measures to rehabilitate the environment affected by the undertaking of any listed activity.

ACTIVITY (e.g. For prospecting – drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access rout etc...etc...etc e.g. For mining - excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc...)	PHASE Of operation in which activity will take place State: Planning and design, pre-construction, construction, operational, rehabilitation, closure, post-closure	SIZE AND SCALE of disturbances Volumes, tonnages and hectares or m ²)	MITIGATION MEASURES (describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants.)	COMPLIANCE WITH STANDARDS (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to rehabilitation specifically this must take place at the earliest opportunity. With regard to rehabilitation, therefore state either: <ul style="list-style-type: none"> - Upon cessation of the individual activity, or - Upon cessation of the mining, bulk sampling or alluvial diamond prospecting as the case may be.
Blasting	Operational	The size of the blasts will be directly affected by the geology of the deposit.	<ul style="list-style-type: none"> • Dust control and monitoring • Noise control and monitoring • Access control. • Continuous rehabilitation. • Stormwater run-off control. 	The following must be placed at the site and is applicable to all activities: <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's 	Upon cessation of the individual activity.
Boreholes x 20	Operational Decommissioning	100m ² surface disturbance each	<ul style="list-style-type: none"> • Dust control and monitoring • Noise control and 	Management and staff	Upon cessation of the individual activity.

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			<ul style="list-style-type: none"> monitoring • Continuous rehabilitation 	<p>must be trained to understand the contents of these documents, and to adhere thereto.</p> <p>Environmental Awareness Training must be provided to employees.</p>	
Chemical toilets	Construction Commissioning Operational Decommissioning Closure	6m ² each	<ul style="list-style-type: none"> • Maintenance of toilets on regular basis. 		Removal of toilets upon closure of prospecting right.
Diesel tanks	Construction Commissioning Operational Decommissioning Closure	200m ² each	<ul style="list-style-type: none"> • Maintenance of diesel tanks and bund walls. • Oil traps. • Groundwater quality monitoring. • Drip tray at re-fuelling point. • Immediately clean hydrocarbon spill. 	<p>The operation must have a rehabilitation and closure plan. Management and staff must be trained to understand the contents of these documents, and to adhere to thereto.</p>	Removal of diesel tanks upon closure of prospecting right.
Excavations	Operational Decommissioning Closure	Provision is made for a maximum footprint of 0.55 hectares open excavations at any given time.	<ul style="list-style-type: none"> • Access control • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring • Continuous rehabilitation • Stormwater run-off control • Immediately clean hydrocarbon spill • Drip trays • Rock stability control and monitoring • Erosion control 	<p>Annual Performance Assessment Reports and Quantum Calculations must be done to ensure that the operation adheres to the contents of the EIA & EMPR documents.</p>	Upon cessation of the individual activity (continuous rehabilitation).

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Generator	Construction Commissioning Operational Decommissioning Closure	25m ² each	<ul style="list-style-type: none"> • Access control • Maintenance of generator and bund walls • Noise control and monitoring • Oil traps • Groundwater quality monitoring • Immediately clean hydrocarbon spill 		Removal of generator and generator building upon closure of prospecting right.
Office – mobile container	Construction Commissioning Operational Decommissioning Closure	18m ² each	<ul style="list-style-type: none"> • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover • Dust control and monitoring • Noise control and monitoring 		Removal of container upon closure of prospecting right.
Processing plant	Construction Commissioning Operational Decommissioning Closure	Provision is made for a maximum footprint of 1 hectare plant area at any given time.	<ul style="list-style-type: none"> • Access control • Maintenance of processing plant • Dust control and monitoring • Groundwater quality and level monitoring • Noise control and monitoring • Drip trays • Stormwater run-off control. • Immediately clean hydrocarbon spills 		Removal of processing plant and ripping of compacted area upon closure of prospecting right.

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			<ul style="list-style-type: none"> • Rip disturbed areas to allow re-growth of vegetation cover 	
Roads	Construction Commissioning Operational Decommissioning Closure	0.5Ha	<ul style="list-style-type: none"> • Maintenance of roads. • Dust control and monitoring • Noise control and monitoring • Speed limits 	Ripping of roads upon closure.
Salvage yard	Construction Commissioning Operational Decommissioning Closure	0.1Ha	<ul style="list-style-type: none"> • Access control • Maintenance of fence. • Groundwater quality monitoring • Stormwater run-off control • Immediately clean hydrocarbon spill 	Removal of fence of salvage yard and ripping of salvage yard upon closure of prospecting right.
Stockpile area	Commissioning Operational Decommissioning Closure	0.2Ha	<ul style="list-style-type: none"> • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring • Drip trays • Stormwater run-off control. • Immediately clean hydrocarbon spills • Rip disturbed areas to allow re-growth of vegetation cover 	Ripping of stockpile area upon closure of prospecting right.
Washbay	Construction Commissioning	600m ²	<ul style="list-style-type: none"> • Groundwater quality and level monitoring 	Removal of washbay equipment, breaking

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	Operational Decommissioning Closure		<ul style="list-style-type: none"> • Concrete floor with oil/water separator • Stormwater run-off control • Immediately clean hydrocarbon spills 		and removal of rubble from the concrete floors and bund walls upon closure of prospecting right.
Waste rock dumps	Commissioning Operational Decommissioning Closure	0.1 Ha	<ul style="list-style-type: none"> • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring • Stormwater run-off control. • Rip disturbed areas to allow re-growth of vegetation cover 		Backfilling of waste rock into open excavations. Ripping of disturbed areas upon closure of prospecting right.
Water tank	Construction Commissioning Operational Decommissioning Closure	9m ² each	<ul style="list-style-type: none"> • Maintain water tanks and structures. • Groundwater levels and quality monitoring. 		Removal of water tank and steel structure upon closure of prospecting right.
Weighbridge	Construction Commissioning Operational Decommissioning Closure	60m ²	<ul style="list-style-type: none"> • Access control • Maintenance of weighbridge • Dust control and monitoring • Noise control and monitoring • Groundwater quality monitoring • Immediately clean hydrocarbon spill • Rip disturbed areas to 		Removal of weighbridge and ripping of disturbed area upon closure of prospecting right.

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			allow re-growth of vegetation cover		
Weighbridge control room – mobile container	Construction Commissioning Operational Decommissioning Closure	18m ²	<ul style="list-style-type: none"> • Access control • Maintenance of weighbridge control room • Dust control and monitoring • Noise control and monitoring • Groundwater quality monitoring • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover 		Removal of container upon closure of prospecting right.
Workshop	Construction Commissioning Operational Decommissioning Closure	18m ²	<ul style="list-style-type: none"> • Access control • Concrete floor with oil/water separator • Maintenance of mobile containers • Noise control and monitoring • Groundwater quality monitoring • Immediately clean hydrocarbon spill 		Removal of container upon closure of prospecting right.

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e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph.)

ACTIVITY (whether listed or not listed) (e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc...)	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts) (e.g. dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc...)	ASPECTS AFFECTED	PHASE In which impact is anticipated. (e.g. Construction, commissioning, operational, decommissioning, closure, post-closure)	MITIGATION TYPE modify, remedy, control or stop through: (e.g. noise control measures, stormwater control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc...) (e.g. modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation.)	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc.)
Blasting	<ul style="list-style-type: none"> • Dust • Fly-rock • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance • Surface water contamination 	Air quality Fauna Flora Noise Surface water Topography Safety	Operational	<ul style="list-style-type: none"> • Dust control and monitoring • Noise control and monitoring • Access control. • Continuous rehabilitation. • Stormwater run-off control. 	<ul style="list-style-type: none"> • Dust levels minimized. • Noise levels minimized. • Safety ensured. • Rehabilitation standards and closure objectives met. • Erosion potential minimized.
Boreholes	<ul style="list-style-type: none"> • Dust • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	Air quality Fauna Flora Noise	Operational	<ul style="list-style-type: none"> • Dust control and monitoring • Noise control and monitoring • Continuous rehabilitation 	<ul style="list-style-type: none"> • Dust levels minimized. • Noise levels minimized. • Rehabilitation standards and closure objectives met.
Chemical toilets	<ul style="list-style-type: none"> • Soil contamination 	Groundwater Soil	Construction Commissioning	<ul style="list-style-type: none"> • Maintenance of toilets on regular 	<ul style="list-style-type: none"> • Minimize the potential for a chemical spill on

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	<ul style="list-style-type: none"> • Groundwater contamination 		Operational Decommissioning Closure	<ul style="list-style-type: none"> • basis. • Removal of toilets upon closure. 	soil, which could infiltrate to groundwater.
Diesel tanks	<ul style="list-style-type: none"> • Groundwater contamination • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance 	Groundwater Soil Surface water	Construction Commissioning Operational Decommissioning Closure	<ul style="list-style-type: none"> • Maintenance of diesel tanks and bund walls. • Oil traps. • Groundwater quality monitoring. • Drip tray at re-fuelling point. • Immediately clean hydrocarbon spill. 	<ul style="list-style-type: none"> • Minimize potential for hydrocarbon spills to infiltrate into groundwater. • Rehabilitation standards and closure objectives met.
Excavations	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance • Surface water contamination 	Air quality Fauna Flora Groundwater Noise Soil Surface water Topography Safety	Operational Decommissioning Closure	<ul style="list-style-type: none"> • Access control • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring • Continuous rehabilitation • Stormwater run-off control • Immediately clean hydrocarbon spill • Drip trays • Rock stability control and monitoring • Erosion control • Low angle access ramp for fauna. 	<ul style="list-style-type: none"> • Safety ensured. • Dust levels minimized. • Minimize potential for hydrocarbon spills to infiltrate into groundwater. • Noise levels minimized. • Rehabilitation standards and closure objectives met. • Erosion potential minimized.
Generator	<ul style="list-style-type: none"> • Groundwater contamination • Noise 	Air quality Groundwater	Construction Commissioning	<ul style="list-style-type: none"> • Access control • Maintenance of 	<ul style="list-style-type: none"> • Safety ensured. • Minimize potential for

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	<ul style="list-style-type: none"> • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance 	<p>Noise Soil Surface water Safety</p>	<p>Operational Decommissioning Closure</p>	<p>generator and bund walls</p> <ul style="list-style-type: none"> • Noise control and monitoring • Oil traps • Groundwater quality monitoring • Immediately clean hydrocarbon spill 	<p>hydrocarbon spills to infiltrate into groundwater.</p> <ul style="list-style-type: none"> • Noise levels minimized. • Rehabilitation standards and closure objectives met.
Office – mobile container	<ul style="list-style-type: none"> • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance 	<p>Fauna Flora Groundwater Soil</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover 	<ul style="list-style-type: none"> • Minimize potential for hydrocarbon spills to infiltrate into groundwater. • Rehabilitation standards and closure objectives met.
Processing plant	<ul style="list-style-type: none"> • Dust • Noise • Groundwater usage • Potential groundwater contamination • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance 	<p>Air quality Fauna Flora Groundwater Noise Soil Surface water Safety</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> • Access control • Maintenance of processing plant • Dust control and monitoring • Groundwater quality and level monitoring • Noise control and monitoring • Drip trays • Stormwater run-off control. • Immediately clean hydrocarbon spills • Rip disturbed areas to allow re-growth of vegetation cover 	<ul style="list-style-type: none"> • Safety ensured. • Dust levels minimized. • Minimize potential for hydrocarbon spills to infiltrate into groundwater. • Noise levels minimized. • Rehabilitation standards and closure objectives met. • Erosion potential minimized.

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Roads	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance 	<p>Air quality Fauna Flora Groundwater Noise Soil Surface water</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> • Maintenance of roads • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring • Speed limits • Stormwater run-off control. • Erosion control • Immediately clean hydrocarbon spills • Rip disturbed areas to allow re-growth of vegetation cover 	<ul style="list-style-type: none"> • Dust levels minimized. • Minimize potential for hydrocarbon spills to infiltrate into groundwater. • Noise levels minimized. • Rehabilitation standards and closure objectives met. • Erosion potential minimized.
Salvage yard	<ul style="list-style-type: none"> • Groundwater contamination • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance • Surface water contamination 	<p>Fauna Flora Groundwater Soil Surface water</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> • Access control • Maintenance of fence. • Groundwater quality monitoring • Stormwater run-off control • Immediately clean hydrocarbon spill 	<ul style="list-style-type: none"> • Minimize potential for hydrocarbon spills to infiltrate into groundwater. • Rehabilitation standards and closure objectives met. • Erosion potential minimized.
Security access control point – mobile container	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	<p>Air quality Fauna Flora Groundwater Soil</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> • Access control • Maintenance of boom gates and container. • Dust control and monitoring • Noise control and monitoring • Groundwater quality monitoring 	<ul style="list-style-type: none"> • Safety ensured. • Dust levels minimized. • Minimize potential for hydrocarbon spills to infiltrate into groundwater. • Noise levels minimized. • Rehabilitation

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				<ul style="list-style-type: none"> • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover 	<p>standards and closure objectives met.</p> <ul style="list-style-type: none"> • Erosion potential minimized.
Stockpile area	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	<p>Air quality Fauna Flora Groundwater Noise Soil Surface water</p>	<p>Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring • Drip trays • Stormwater run-off control. • Immediately clean hydrocarbon spills • Rip disturbed areas to allow re-growth of vegetation cover 	<ul style="list-style-type: none"> • Dust levels minimized. • Minimize potential for hydrocarbon spills to infiltrate into groundwater. • Noise levels minimized. • Rehabilitation standards and closure objectives met. • Erosion potential minimized.
Storage facility – mobile containers	<ul style="list-style-type: none"> • Removal and disturbance of vegetation cover and natural habitat of fauna • Groundwater contamination • Soil contamination • Surface disturbance 	<p>Fauna Flora Groundwater Soil Surface water</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover 	<ul style="list-style-type: none"> • Minimize potential for hydrocarbon spills to infiltrate into groundwater. • Rehabilitation standards and closure objectives met.
Topsoil storage area	<ul style="list-style-type: none"> • Dust • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil disturbance • Surface disturbance 	<p>Air quality Fauna Flora Groundwater Noise Soil Surface water</p>	<p>Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> • Dust control and monitoring • Stormwater run-off control. • Continuous rehabilitation • Rip disturbed areas to allow re-growth of 	<ul style="list-style-type: none"> • Dust levels minimized. • Minimize potential for hydrocarbon spills to infiltrate into groundwater. • Rehabilitation standards and closure objectives met.

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				<ul style="list-style-type: none"> vegetation cover Backfilling of topsoil during rehabilitation 	<ul style="list-style-type: none"> Erosion potential minimized.
Washbay	<ul style="list-style-type: none"> Groundwater contamination and usage Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination 	<p>Groundwater Soil Surface water</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> Groundwater quality and level monitoring Concrete floor with oil/water separator Stormwater run-off control Immediately clean hydrocarbon spills 	<ul style="list-style-type: none"> Minimize potential for hydrocarbon spills to infiltrate into groundwater. Rehabilitation standards and closure objectives met. Erosion potential minimized.
Waste rock dumps	<ul style="list-style-type: none"> Dust Groundwater contamination Noise Removal and disturbance of vegetation cover and natural habitat of fauna Surface disturbance 	<p>Air quality Fauna Flora Groundwater Noise Soil Surface water Topography</p>	<p>Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> Dust control and monitoring Groundwater quality monitoring Noise control and monitoring Stormwater run-off control. Rip disturbed areas to allow re-growth of vegetation cover 	<ul style="list-style-type: none"> Dust levels minimized. Minimize potential for hydrocarbon spills to infiltrate into groundwater. Noise levels minimized. Rehabilitation standards and closure objectives met. Erosion potential minimized.
Water tank	<ul style="list-style-type: none"> Groundwater abstraction and usage Surface disturbance 	<p>Fauna Flora Groundwater Surface water</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> Maintain water tanks and structures. Groundwater levels and quality monitoring. 	<ul style="list-style-type: none"> Safety ensured. Rehabilitation standards and closure objectives met.
Weighbridge	<ul style="list-style-type: none"> Dust Groundwater contamination Noise Removal and disturbance of vegetation cover and natural 	<p>Air quality Fauna Flora Groundwater Noise</p>	<p>Construction Commissioning Operational Decommissioning Closure</p>	<ul style="list-style-type: none"> Access control Maintenance of weighbridge Dust control and monitoring 	<ul style="list-style-type: none"> Safety ensured. Dust levels minimized. Minimize potential for hydrocarbon spills to infiltrate into

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	<ul style="list-style-type: none"> habitat of fauna Surface disturbance 	Soil Surface water		<ul style="list-style-type: none"> Noise control and monitoring Groundwater quality monitoring Immediately clean hydrocarbon spill Rip disturbed areas to allow re-growth of vegetation cover 	groundwater. <ul style="list-style-type: none"> Noise levels minimized. Rehabilitation standards and closure objectives met. Erosion potential minimized.
Weighbridge control room – mobile container	<ul style="list-style-type: none"> Dust Groundwater contamination Noise Removal and disturbance of vegetation cover and natural habitat of fauna Surface disturbance 	Fauna Flora Groundwater Soil Surface water	Construction Commissioning Operational Decommissioning Closure	<ul style="list-style-type: none"> Access control Maintenance of weighbridge control room Dust control and monitoring Noise control and monitoring Groundwater quality monitoring Immediately clean hydrocarbon spill Rip disturbed areas to allow re-growth of vegetation cover 	<ul style="list-style-type: none"> Safety ensured. Dust levels minimized. Minimize potential for hydrocarbon spills to infiltrate into groundwater. Noise levels minimized. Rehabilitation standards and closure objectives met. Erosion potential minimized.
Workshop	<ul style="list-style-type: none"> Groundwater contamination Noise Removal and disturbance of vegetation cover and natural habitat of fauna Surface disturbance 	Air quality Fauna Flora Groundwater Noise Soil Surface water	Construction Commissioning Operational Decommissioning Closure	<ul style="list-style-type: none"> Access control Concrete floor with oil/water separator Maintenance of mobile containers Noise control and monitoring Groundwater quality monitoring Immediately clean 	<ul style="list-style-type: none"> Safety ensured. Minimize potential for hydrocarbon spills to infiltrate into groundwater. Noise levels minimized. Rehabilitation standards and closure objectives met.

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				hydrocarbon spill	<ul style="list-style-type: none"> Erosion potential minimized.
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f) Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved.)

ACTIVITY (whether listed or not listed) (e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc...)	POTENTIAL IMPACT (e.g. dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc...)	MITIGATION TYPE (modify, remedy, control, or stop through e.g. noise control measures, stormwater control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc.)	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to rehabilitation specifically this must take place at the earliest opportunity. With regard to rehabilitation, therefore state either: - Upon cessation of the individual activity, or - Upon cessation of the mining, bulk sampling or alluvial diamond prospecting as the case may be.	COMPLIANCE WITH STANDARDS (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed management standards or practices that have been identified by Competent Authorities.)
Blasting	<ul style="list-style-type: none"> Dust Fly-rock Noise Removal and disturbance of vegetation cover and natural habitat of fauna Surface disturbance Surface water contamination 	<ul style="list-style-type: none"> Dust control and monitoring Noise control and monitoring Access control. Continuous rehabilitation. Stormwater run-off control. 	Upon cessation of the individual activity.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> Relevant Legislation; Acts; Regulations; COP's; and SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Boreholes	<ul style="list-style-type: none"> Dust Noise 	<ul style="list-style-type: none"> Dust control and monitoring 	Upon cessation of the individual activity.	The following must be placed at the site and is

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	<ul style="list-style-type: none"> • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	<ul style="list-style-type: none"> • Noise control and monitoring • Continuous rehabilitation 		<p>applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Chemical toilets	<ul style="list-style-type: none"> • Soil contamination • Groundwater contamination 	<ul style="list-style-type: none"> • Maintenance of toilets on regular basis. • Removal of toilets upon closure. 	Removal of toilets upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Diesel tanks	<ul style="list-style-type: none"> • Groundwater contamination • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance 	<ul style="list-style-type: none"> • Maintenance of diesel tanks and bund walls. • Oil traps. • Groundwater quality monitoring. • Drip tray at re-fuelling point. • Immediately clean 	Removal of diesel tanks upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's

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		hydrocarbon spill.		Management and staff must be trained to understand the contents of these documents, and to adhere thereto.
Excavations	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance • Surface water contamination 	<ul style="list-style-type: none"> • Access control • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring • Continuous rehabilitation • Stormwater run-off control • Immediately clean hydrocarbon spill • Drip trays • Rock stability control and monitoring • Erosion control 	Upon cessation of the individual activity (continuous rehabilitation).	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Generator	<ul style="list-style-type: none"> • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance 	<ul style="list-style-type: none"> • Access control • Maintenance of generator and bund walls • Noise control and monitoring • Oil traps • Groundwater quality monitoring • Immediately clean hydrocarbon spill 	Removal of generator upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>

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Office – mobile container	<ul style="list-style-type: none"> • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance 	<ul style="list-style-type: none"> • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover 	Removal of container upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Processing plant	<ul style="list-style-type: none"> • Dust • Noise • Groundwater usage • Potential groundwater contamination • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance 	<ul style="list-style-type: none"> • Access control • Maintenance of processing plant • Dust control and monitoring • Groundwater quality and level monitoring • Noise control and monitoring • Drip trays • Stormwater run-off control. • Immediately clean hydrocarbon spills • Rip disturbed areas to allow re-growth of vegetation cover 	Removal of processing plant upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Roads	<ul style="list-style-type: none"> • Dust • Groundwater contamination 	<ul style="list-style-type: none"> • Maintenance of roads • Dust control and monitoring. 	Upon cessation of prospecting.	The following must be placed at the site and is applicable to all activities:

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	<ul style="list-style-type: none"> • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna. • Soil contamination through hydrocarbon spills. • Surface disturbance 	<ul style="list-style-type: none"> • Groundwater quality monitoring • Noise control and monitoring • Speed limits. • Stormwater run-off control • Erosion control • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover. 		<ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Salvage yard	<ul style="list-style-type: none"> • Groundwater contamination • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance • Surface water contamination 	<ul style="list-style-type: none"> • Access control • Maintenance of fence. • Groundwater quality monitoring • Stormwater run-off control • Immediately clean hydrocarbon spill 	Removal of fence of salvage yard and ripping of salvage yard upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Security access control point – mobile container	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna 	<ul style="list-style-type: none"> • Access control • Maintenance of boom gates and container. • Dust control and monitoring • Noise control and monitoring • Groundwater quality 	Removal of container upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's

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	<ul style="list-style-type: none"> • Surface disturbance 	<ul style="list-style-type: none"> • monitoring • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover 		<p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Stockpile area	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	<ul style="list-style-type: none"> • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring • Drip trays • Stormwater run-off control. • Immediately clean hydrocarbon spills • Rip disturbed areas to allow re-growth of vegetation cover 	Ripping of stockpile area upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Storage facility – mobile containers	<ul style="list-style-type: none"> • Removal and disturbance of vegetation cover and natural habitat of fauna • Groundwater contamination • Soil contamination • Surface disturbance 	<ul style="list-style-type: none"> • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover 	Removal of container upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>

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<p>Topsoil storage area</p>	<ul style="list-style-type: none"> • Dust • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil disturbance • Surface disturbance 	<ul style="list-style-type: none"> • Dust control and monitoring • Stormwater run-off control. • Continuous rehabilitation • Rip disturbed areas to allow re-growth of vegetation cover • Backfilling of topsoil during rehabilitation 	<p>Spreading of all stored topsoil on rehabilitated areas and ripping of storage area upon closure of prospecting right.</p>	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
<p>Washbay</p>	<ul style="list-style-type: none"> • Groundwater contamination and usage • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination 	<ul style="list-style-type: none"> • Groundwater quality and level monitoring • Concrete floor with oil/water separator • Stormwater run-off control • Immediately clean hydrocarbon spills 	<p>Removal of washbay equipment, breaking and removal of rubble from the concrete floors and bund walls upon closure of prospecting right.</p>	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
<p>Waste rock dumps</p>	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of 	<ul style="list-style-type: none"> • Dust control and monitoring • Groundwater quality monitoring • Noise control and monitoring 	<p>Backfilling of waste rock into open excavations. Ripping of disturbed areas upon closure of prospecting right.</p>	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and

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	<ul style="list-style-type: none"> vegetation cover and natural habitat of fauna • Surface disturbance 	<ul style="list-style-type: none"> • Stormwater run-off control. • Rip disturbed areas to allow re-growth of vegetation cover 		<ul style="list-style-type: none"> ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Water tank	<ul style="list-style-type: none"> • Groundwater abstraction and usage • Surface disturbance 	<ul style="list-style-type: none"> • Maintain water tanks and structures. • Groundwater levels and quality monitoring. 	Removal of water tank and steel structure upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
Weighbridge	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	<ul style="list-style-type: none"> • Access control • Maintenance of weighbridge • Dust control and monitoring • Noise control and monitoring • Groundwater quality monitoring • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of 	Removal of weighbridge and ripping of disturbed area upon closure of prospecting right.	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>

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<p>Weighbridge control room – mobile container</p>	<ul style="list-style-type: none"> • Dust • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	<p style="text-align: center;">vegetation cover</p> <ul style="list-style-type: none"> • Access control • Maintenance of weighbridge control room • Dust control and monitoring • Noise control and monitoring • Groundwater quality monitoring • Immediately clean hydrocarbon spill • Rip disturbed areas to allow re-growth of vegetation cover 	<p>Removal of container upon closure of prospecting right.</p>	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>
<p>Workshop– mobile containers</p>	<ul style="list-style-type: none"> • Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	<ul style="list-style-type: none"> • Access control • Concrete floor with oil/water separator • Maintenance of mobile containers • Noise control and monitoring • Groundwater quality monitoring • Immediately clean hydrocarbon spill 	<p>Removal of containers upon closure of prospecting right.</p>	<p>The following must be placed at the site and is applicable to all activities:</p> <ul style="list-style-type: none"> ○ Relevant Legislation; ○ Acts; ○ Regulations; ○ COP's; and ○ SOP's <p>Management and staff must be trained to understand the contents of these documents, and to adhere thereto.</p>

g) Financial Provision

(1) Determination of the amount of Financial Provision.

- a. Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation 22(2)(d) as described in 2.4 herein.**

The main closure objectives of the Company's planned prospecting operation are:

- To restore the site to its pre-prospecting land capability in a sustainable matter.
- To prevent the sterilization of any ore reserves.
- To prevent the establishment of any permanent structures or features.
- To manage and limit any impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued.
- To establish a stable and self sustainable vegetation cover.
- To limit and rehabilitate any erosion features and prevent any permanent impact to the soil capability.
- To limit and manage the visual impact of the prospecting activities.
- To safeguard the safety and health of humans and animals on the site.
- To close the prospecting operation efficiently, cost effectively and in accordance with Government Policy.

- b. Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.**

Identified interested and/or affected parties were notified as follows:

- Notification letters were sent to all identified interested and / or affected parties on the 23rd of September 2019. Attached to each of these letters was a draft Scoping Report, containing information relating to the proposed project.
- A newspaper advert was placed in the 'Kathu Gazette' local newspaper on the 28th of September 2019.
- A newspaper advert was placed in the 'Volksblad' regional newspaper on the 27th of September 2019.

Proof of notification is attached as Appendix '5'.

Surface Owner:

- A meeting was held with Mr. Stanton on the 22nd of October 2019 to discuss the proposed prospecting activities. The following pertained from the meeting:
 - Compensation for surface use.
 - Mr. Stanton's lawyer, Da Silva, must be used for any contracts.
 - The geological report must be provided to Mr. Stanton before drilling or bulk sampling can take place.
 - Weighing of old dumps upon removal thereof from the site.

Proof of consultation with the surface owner is attached as Appendix '6'.

- PMG Mining:
 - PMG requested to be registered as an interested and/or affected party.
 - PMG requested a copy of the draft EIA/EMPR document to which they will provide comments. The EIA/EMPR document was provided.

- SAHRA:
 - Heritage Impact Assessment is required;
 - Assessment of impacts to heritage resources should be conducted as part of the EA process; and
 - Desktop Palaeontological Impact Assessment is required.

Responses received are attached as Appendix '7'.

- c. **Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.**

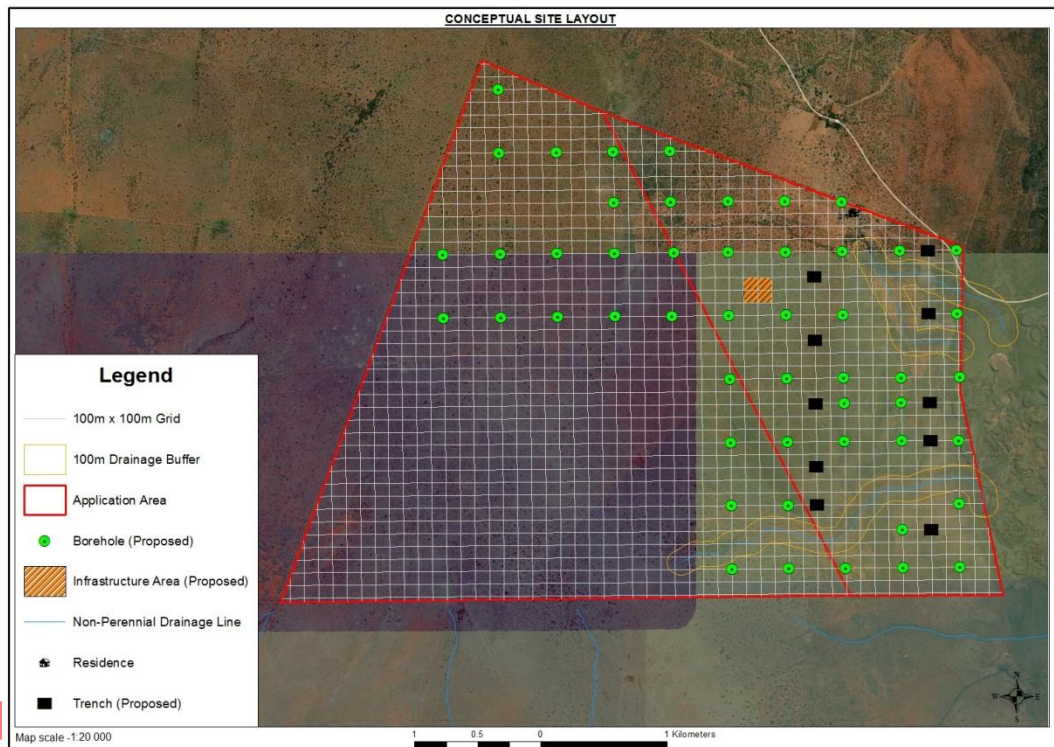


Figure 21 – Site layout map indicating prospecting activities

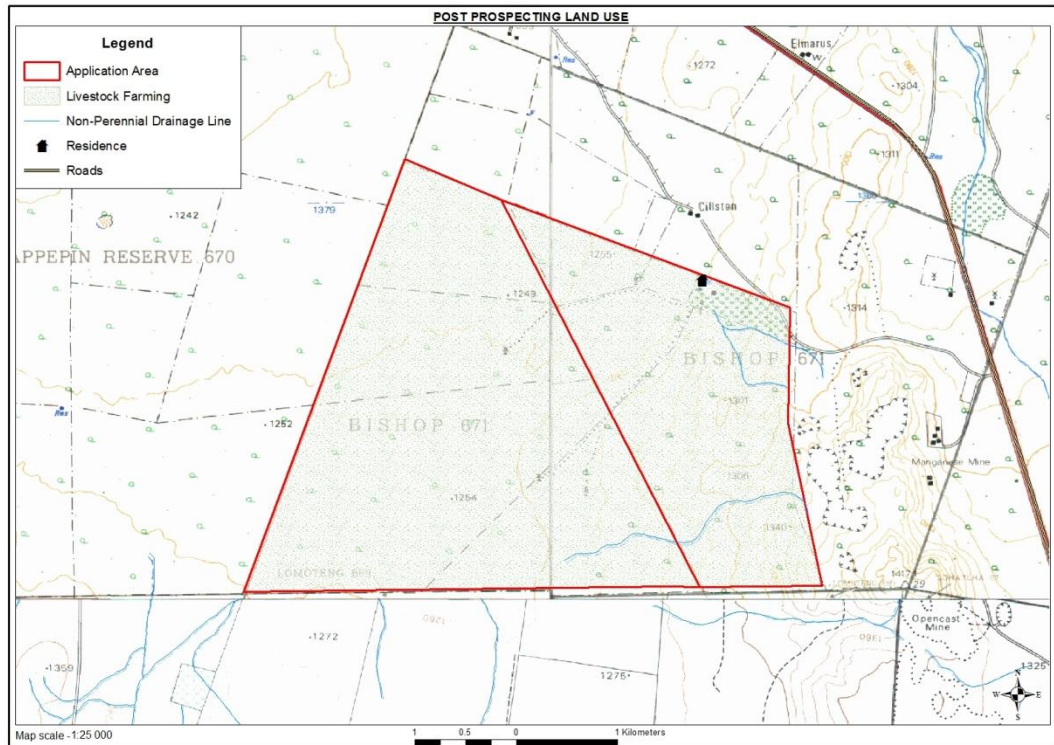


Figure 22 – Post prospecting land use map

Rehabilitation Plan:

This rehabilitation strategy has been developed to ensure that the post-prospecting land use supports agricultural / livestock farming activities.

The Company's closure objectives are:

- The main closure objective is to restore the site to its pre-prospecting land capability in a sustainable matter.
- To prevent the sterilization of any ore reserves.
- To prevent the establishment of any permanent structures or features.
- To manage and limit any impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued.
- To establish a stable and self sustainable vegetation cover.
- To limit and rehabilitate any erosion features and prevent any permanent impact to the soil capability of the site.
- To limit and manage the visual impact of the operation.
- To safeguard the safety and health of humans and animals on the site.
- That the operation is closed efficiently, cost effectively and in accordance with government policy.

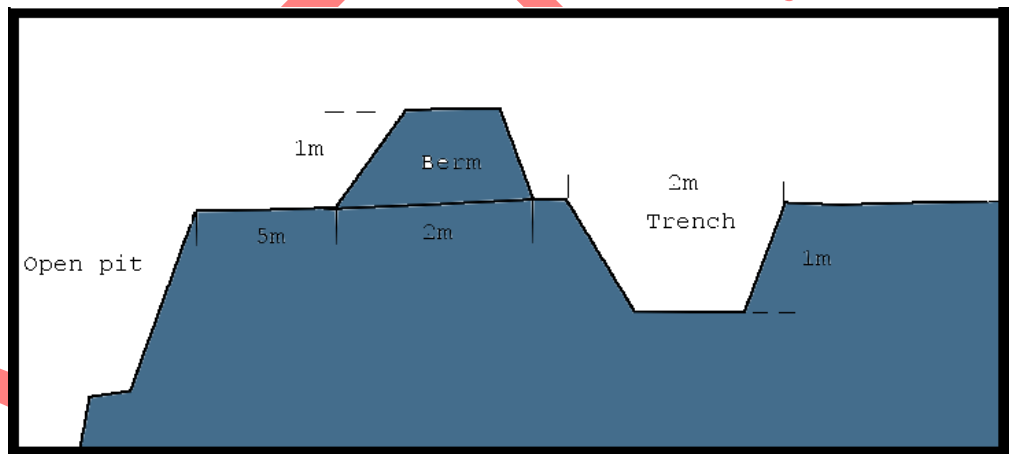
The proposed site has been divided into a range of different categories as each category will require a different rehabilitation methodology to achieve the intended post-prospecting land use. The categories are:

- Excavation (bulk sampling) areas
- Fencing
- General
- Infrastructure
- Residue deposits

- Processing plant
- Roads
- Water
- Excavation areas:
Continuous rehabilitation must be enforced to limit open excavations at any one time on the site.

Upon closure all available material, which includes fines stockpiles, on-grade stockpiles, sub-grade stockpiles and waste rock dumps must be used during backfilling to limit the existence of dangerous excavations. The backfilled excavation must be levelled and contoured to represent the pre-prospecting topography where after previously stored growth medium (topsoil) must be spread evenly over the area in order to re-establish vegetation growth.

If during closure it is determined that there is not sufficient material for backfilling to limit the existence of dangerous excavations a single 2m wide x 1m deep trench and 1m high berm must be constructed around the perimeter of these excavations to prevent easy access to open excavations. These excavations must also have an access ramp in order to provide an escape route for animals.



- Fencing:
All fencing erected during the operational phase of the prospecting operation must be dismantled and removed from site by either selling it to a scrap metal dealer or disposing thereof at the Municipal landfill area.
- General:
Areas where the vegetation- and soil structure has been disturbed by prospecting activities, but where no infrastructure has been established, must be rehabilitated by levelling of all safety berms. All compacted areas must then be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped.
- Infrastructure:
Upon closure, all buildings, structures or objects on the site must be dealt with in accordance with Regulation 44 of the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002), which states:

“Regulation 44:

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

▪ Temporary infrastructure:

All temporary infrastructure must be removed from the site. These may include:

- Mobile containers utilized as offices, security access point, storage facilities and workshops.
- Chemical toilets.

All compacted areas must then be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped.

▪ Permanent infrastructure:

Upon closure all permanent buildings / structures must be removed from the site. These may include:

- Buildings:

Content of all brick buildings must be removed from the site where after the buildings must be demolished and the rubble removed from the site either by re-selling of material or by disposal thereof at the Municipal landfill area. Any compacted areas must then be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped.

Should the surface owner request that some of the buildings remain; the surface owner must provide both the Company and DMR with such a request in writing.

- Concrete structures:

All concrete structures must be demolished and the rubble removed from the site either by re-selling of material or by disposal thereof at the Municipal landfill area. Any compacted areas must then be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped.

- Diesel tanks:

The diesel tanks must be emptied and removed from the site. The bund wall and concrete floor must be demolished, the rubble removed from the site and disposed of at the Municipal landfill area. The soil surrounding the storage facility must be removed to ensure that no contamination can take place after closure. Any compacted areas must then be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped.

- **Salvage yard:**
Upon closure of the operation the steel and metal must be removed from the site by either selling it to a scrap metal dealer or disposing thereof at the Municipal landfill area. Any other material must be removed from the site and dumped at the Municipal landfill area. The fence surrounding the salvage yard must be dismantled and removed from the site. Any compacted areas must then be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped.
- **Steel structures:**
All steel or metal structures must be dismantled and removed from the site by either selling it to a scrap metal dealer or disposing thereof at the Municipal landfill area.
- **Weighbridge:**
The weighbridge must be removed from the site. The concrete structures of the weighbridge must be demolished; the rubble removed from the site and disposed of at the Municipal landfill area. Any compacted areas must then be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped.
- **Residue deposits:**
Upon closure all available material, which includes fines stockpiles, on-grade stockpiles, sub-grade stockpiles and waste rock dumps must be used during backfilling to limit the existence of dangerous excavations.

The disturbed areas must be levelled and contoured to represent the pre-prospecting topography where after all compacted areas must then be ripped to a depth of 300mm and previously stored growth medium (topsoil) must be spread evenly over the area in order to re-establish vegetation growth.
- **Processing plant:**
The processing plants, including conveyor belts, metal- and other relating structures, must be dismantled and removed from the site either by selling it to a scrap metal dealer or disposing thereof at the Municipal landfill area. Any compacted areas must then be ripped to a depth of 300mm, where possible, the topsoil or growth medium returned and landscaped.
- **Roads:**
All haul roads utilized by the prospecting operation must be ripped upon closure. Should the surface owner request that some of the roads remain; the surface owner must provide both the Company and DMR with such a request in writing.
- **Waste:**
All domestic and industrial waste must be removed from the site and disposed of at the Municipal landfill area.

Any hazardous waste must be removed by a suitably qualified company and disposed of in the prescribed manner.

- Water:
 - Boreholes:
Any boreholes utilized by the operation shall remain after closure for use by the surface owner.
 - JoJo tanks:
The JoJo tanks must be emptied and removed from the site. All steel or metal structures must be dismantled and removed from the site by either selling it to a scrap metal dealer or disposing thereof at the Municipal landfill area.

- Maintenance (Aftercare)

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

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

The aim with the closure of the prospecting operation must be to create an acceptable post-prospecting environment and land-use. Therefore all agreed commitments must be implemented by Management.

- After-effects following closure

- Acid drainage
No potential for bad quality leachate or acid drainage development exists.
- Long term impact on ground water and / or surface water.
No after effect on the groundwater yield or quality or surface water quality is expected.
- Long-term stability of rehabilitated land
One of the main aims of any rehabilitated ground must be to obtain a self-sustaining and stable end result. As the open excavations will be backfilled these areas will have long term stability.

d. Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

The main closure objective of the Company's planned prospecting operation is to restore the site to its pre-prospecting capability in a sustainable matter. The rehabilitation activities proposed in the above rehabilitation plan will ensure that the land reverts back to grazing land upon closure of the prospecting right.

- e. Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.

CALCULATION OF THE QUANTUM - 2019

Applicant:

K2019315211 (SOUTH AFRICA) (PTY) LTD

Ref No:

NC12395 PR

Date:

NOVEMBER 2019

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate (2019)	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	m3	6 000.00	15.33	1	1	91 968.01
2 (A)	Demolition of steel buildings and structures	m2	339.00	213.51	1	1	72 380.98
2(B)	Demolition of reinforced concrete buildings and structures	m2	0.00	314.65	1	1	0.00
3	Rehabilitation of access roads	m2	5 000.00	38.21	1	1	191 038.14
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0.00	370.84	1	1	0.00
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0.00	202.28	1	1	0.00
5	Demolition of housing and/or administration facilities	m2	600.00	427.03	1	1	256 215.86
6	Opencast rehabilitation including final voids and ramps	ha	0.380	217 333.98	0.52	1	42 945.19
7	Sealing of shafts adits and inclines	m3	0.00	114.62	0	1	0.00
8 (A)	Rehabilitation of overburden and spoils	ha	0.300	144 739.49	1	1	43 421.85
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0.00	185 868.87	1	1	0.00
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0.00	539 851.31	0.66	1	0.00
9	Rehabilitation of subsided areas	ha	0.00	124 961.42	1	1	0.00
10	General surface rehabilitation	ha	1.60	118 218.90	1	1	189 150.24
11	River diversions	ha	0.00	118 218.90	1	1	0.00
12	Fencing	m	0.00	134.85	1	1	0.00
13	Water management	ha	0.00	44 950.15	0.25	1	0.00
14	2 to 3 years of maintenance and aftercare	ha	2.00	15 732.55	1	1	31 465.11
15 (A)	Specialist study	Sum	25 000.00			1	25 000.00
15 (B)	Specialist study	Sum				1	0.00
Total of 1 - 15 above							943 585.37

weighting factor 2
1.05

Subtotal 1	990 764.64
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1	Preliminary and General	56 615.12	56 615.12
2	Contingencies	94 358.54	94 358.54

Subtotal 2	1 141 738.30
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VAT (15%)	171 260.75
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Grand Total	1 312 999.05
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The calculations according to the DMR guidelines require the Company to provide an amount of R1 312 999.05 for rehabilitation and closure.

- f. Confirm that the financial provision will be provided as determined.

The Company undertakes to, upon request of DMR, provide a financial guarantee, as per the quantum calculations to the amount of R1 312 999.05 to cover the financial costs related to rehabilitation.

h) Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including:

- a. Monitoring of Impact Management Actions
- b. Monitoring and reporting frequency
- c. Responsible persons
- d. Time period for implementing impact management actions
- e. Mechanism for monitoring compliance

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
<ul style="list-style-type: none"> - Blasting - Boreholes - Excavations - Generator - Loading & hauling - Processing plant - Roads - Salvage yard - Security access point - Stockpile areas - Topsoil storage - Waste rock dump - Weighbridge - Workshop 	Air quality	A single bucket monitoring system must be placed on the site during the operational phase to measure the air quality levels and to ensure that the Company's operation adheres to the Management Standards as set out in the National Environmental Management: Air Quality Amendment Act, 2014 (20 of 2014), the Regulations of the MPRDA (28 of 2002) and the Mine, Health and Safety Act (29 of 1996).	Management Environmental Officer / Contractor	Monthly fall-out dust sampling and annual reporting to DMR during operational phase.
<ul style="list-style-type: none"> - Blasting - Boreholes - Diesel tanks - Excavations - Office containers - Processing plant - Roads 	Flora	A registered mine surveyor must conduct measurements of open excavations, deposition sites, rehabilitated areas and any other infrastructure developments. The measurements must be plotted on plans and kept for life of operation.	Management Environmental Officer / Contractor	Quarterly surveys and submitted to the DMR annually.

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<ul style="list-style-type: none"> - Salvage yard - Security access point - Stockpile area - Storage facility - Topsoil storage - Waste rock dump - Weighbridge & control room - Workshop 				
<ul style="list-style-type: none"> - Blasting - Boreholes - Chemical toilets - Diesel tanks - Excavations - Generator - Office - Processing plant - Roads - Salvage yard - Security access point - Stockpile areas - Storage facilities - Topsoil storage site - Waste rock dumps - Washbay - Water tank - Weighbridge & control room - Workshop 	Groundwater	<p>Water samples must be taken and analysed to ensure that they comply with the SANS 241-1:2011 drinking water quality.</p> <p>Water levels must be measured.</p> <p>Water abstraction must be documented.</p>	Management Environmental Officer / Contractor	<p>Quarterly analysis and submitted to the DMR annually.</p>
<ul style="list-style-type: none"> - Blasting - Boreholes - Excavations - Generator - Processing plant 	Noise	<p>Noise readings must be taken at pre-determined noise monitoring points with sufficient, calibrated sound level meter.</p>	Management Environmental Officer / Contractor	<p>Monthly analysis and submitted to the DMR annually.</p>

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<ul style="list-style-type: none">- Roads- Security access point- Stockpile areas- Storage facilities- Topsoil storage- Waste rock dumps- Weighbridge- Workshop				
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DRAFT

i) Indicate the frequency of the submission of the performance assessment / environmental audit report.

An Audit Report will be conducted annually in terms of Regulation 34 of the Environmental Impact Assessment Regulations, 2014 of the National Environmental Management Act, 1998 (Act no 107 of 1998).

j) Environmental Awareness Plan

(1) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.

The Company shall provide and discuss the Environmental Awareness Plan with each employee during pre-employment induction. Monthly Environmental Awareness training shall be provided during life of operation.

(2) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

The Company shall ensure that there is an Emergency Response Plan on site, clearly indicating the different procedures to potential incidents.

k) Specific information required by the Competent Authority

(Amongst others, confirm that the financial provision will be reviewed annually.)

The financial quantum will be reviewed annually as is prescribed by Regulation 54 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) and Regulations pertaining to the financial provision for prospecting, exploration, mining or production operations of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

The Company shall provide the DMR with an annual Environmental Audit Report in terms of Appendix 7 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

Application for additional Environmental Authorisation if scope of activities changes as well as a Section 102 application at DMR.

UNDERTAKING

The EAP herewith confirms:

- a) The correctness of the information provided in the reports
- b) The inclusion of comments and inputs from stakeholders and I&APs
- c) The inclusion of inputs and recommendations from the specialist reports where relevant; and
- d) The acceptability of the project in relation to the finding of the assessment and level of mitigation proposed

Signature of Environmental Assessment Practitioner

Name of company

Date

- END -