



mineral resources

Department:

Mineral Resources

REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

FOR LISTED ACTIVITIES ASSOCIATED WITH MINING RIGHT AND/OR BULK SAMPLING ACTIVITIES INCLUDING TRENCHING IN CASES OF ALLUVIAL DIAMOND MINING

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: Kimswa Mining (Pty) Ltd
TEL NO: 087 527 0713
CEL NO: 082 576 5549 (Lohan); 0790728391 (Louis)
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POSTAL ADDRESS: PO Box 2189; Kimberley; 8300
PHYSICAL ADDRESS: 57 Kenilworth Road, De Beers, Kimberley, 8301

FILE REFERENCE NUMBER SAMRAD: (NC) 30/5/1/3/2/13217 PR

IMPORTANT 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 a 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 therefore 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 SCOPING PROCESS

The objective of the scoping report is to, through a consultative process—

- (a) identify the relevant policies and legislation relevant to the activity;
- (b) motivate 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 and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
- (d) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
- (e) identify the key issues to be addressed in the assessment phase;
- (f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
- (g) identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT

2) Contact Person and Correspondence Address

a) Details of:-

i) Details of the EAP who prepared the report:

Name of the Practitioner:	ROELIEN OOSTHUIZEN
Tel No.:	084 208 9088
Fax No.:	086 510 7120
E-mail address:	roosthuizen950@gmail.com
Physical Address:	Farm Oberon; Kimberley; 8301
Postal Address:	P.O. Box 110823, Hadisonpark; 8306

ii) Appointed by:

Kimswa Mining (Pty) Ltd

iii) Expertise of the EAP

(1) The qualifications of the EAP

Masters in Environmental Management (UFS)
B-Comm in Human and Industrial- Psychology (NWU)
(with evidence attached as **Appendix 1**)

(2) Summary of the EAP's past experience

(In carrying out the Environmental Impact Assessment Procedure)

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.
See attached CV. (with evidence attached as **Appendix 2**)

b) Description of the property

Farm Name:	Portion 3 (Beatrys) of the Farm Lanyon Vale no. 376, Hay
Application area (Ha)	~ 2841.2985 ha (Two thousand eight hundred and forty-one comma two nine eight five hectares).
Magisterial district:	Hay
Distance and direction from nearest town	The Beatrys project is located along the northern bank of the middle Orange River between Douglas and Prieska in the Northern Cape Province of South Africa, some 100 km southwest of Douglas and some 200km from Kimberley.
21-digit Surveyor General Code for each farm portion	C03100000000037600003

c) Locality map

(show nearest town, scale not smaller than 1:250000)

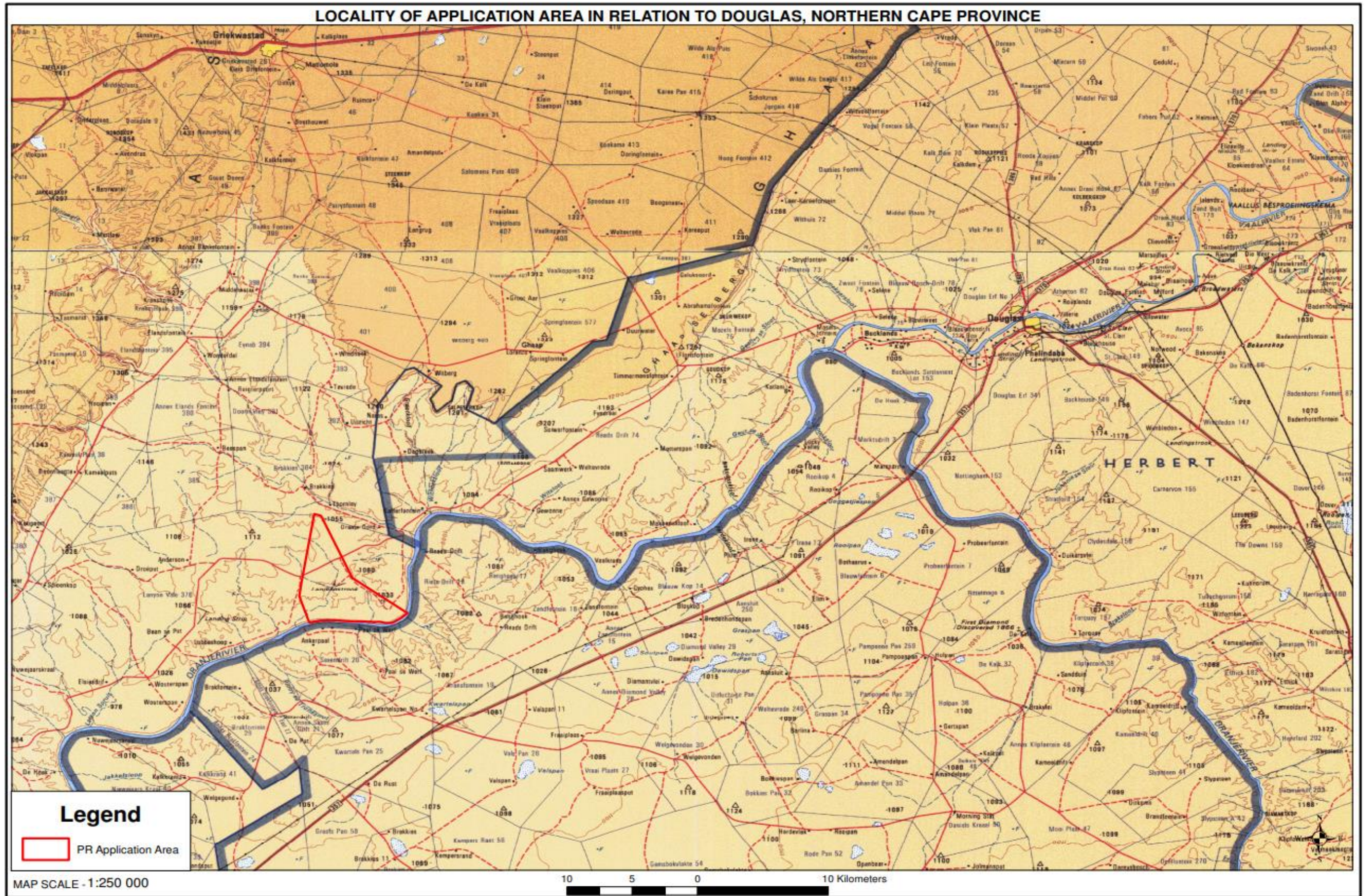


Figure 1. 1:250 000 topocadastral map KIMBERLEY 2824 indicating the application areas in red.

d) Description of the scope of the proposed overall activity

i) Listed and specified activities

(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)

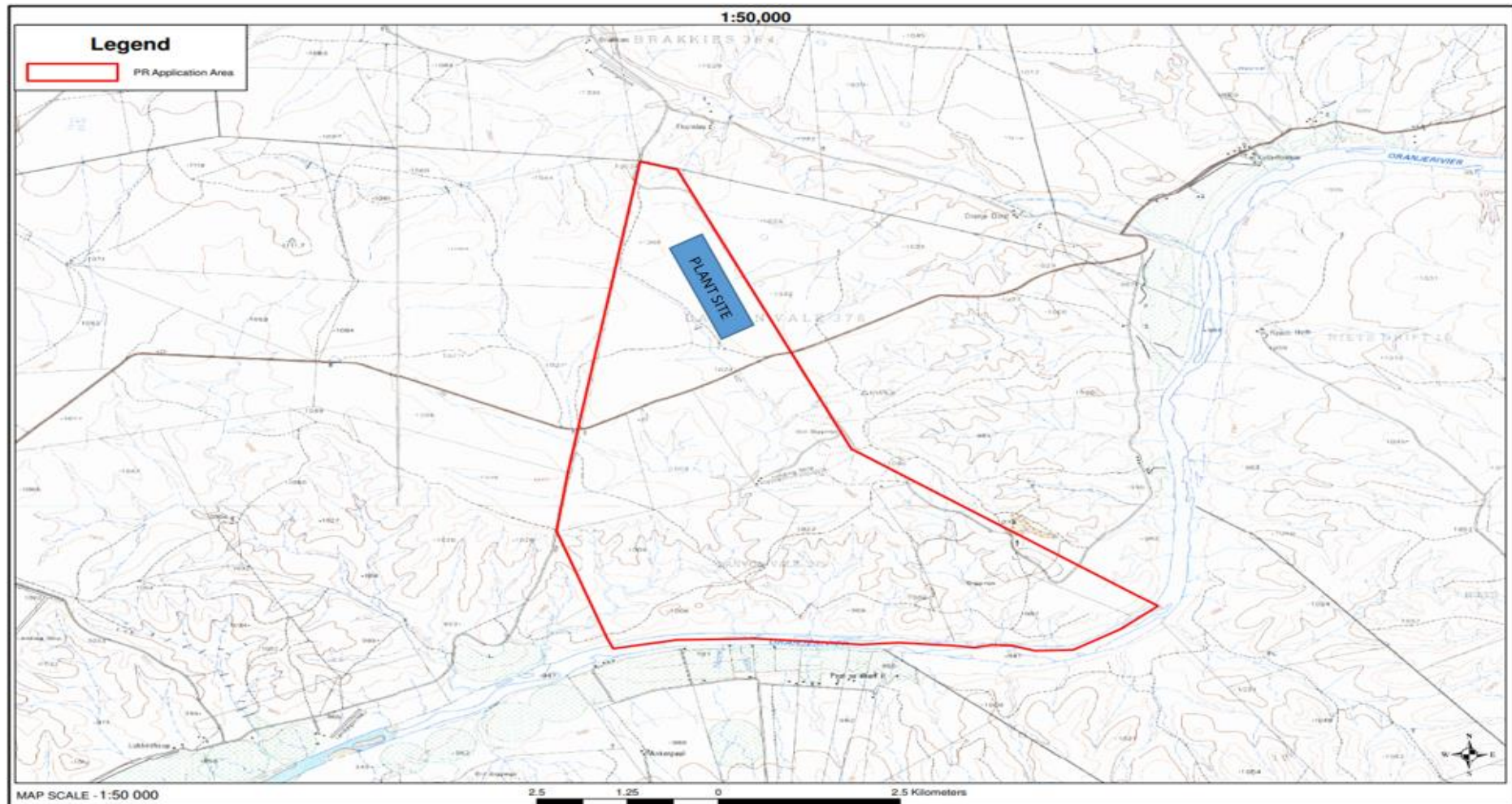


Figure 2. 1:50 000 MAP OF APPLICATION AREA AND PROVISIONAL PLANT SITE DRILL HOLES AS WELL AS PITS AND TRENCHES LOCATIONS
WILL ONLY BE DETERMINED AFTER THE FIRST PHASE AND DESKTOP STUDIES

PHASE 1**Review of Past Exploration Results**

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

Imagery Analysis & Geological Mapping

High-resolution satellite images will be studied and used to geologically map the application area. Contacts between various lithologies will be mapped and specific attention will be given to delineate and define areas underlain by alluvial gravels.

Location of drilling pitting and trenching will only be determined after the Imagery Analysis & Geological Mapping.

PHASE 2

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

PHASE 3**Invasive Prospecting Pits**

100 pits 2m X 3m X 0.5 - 5m

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

PHASE 4**Bulk Sampling**

30 trenches 100m X 50m X 0.5 – 5m

Table 1. Listed and Specified Activities

NAME OF ACTIVITY e.g. for prospecting – drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, 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.	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY Mark with an X where applicable or affected	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)/NOT LISTED
Activity 9 of Listing Notice 1 "The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water- (i) with an internal diameter of 0.36 metres or more; or (ii) with a peak throughput of 120 litres per second or more;	Pumping of water or storm water on the prospecting site.	X	GNR 327 Listing Notice 1
Activity 12 of Listing Notice 1 The development of – (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs— (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse" Regulation GN R704, published on 4 June 1999 in terms of the National Water Act (Use of water for mining and related activities)	Clean and dirty water systems on the site. It is anticipated that the operations will establish storm water control berms and trenches to separate clean and dirty water on the prospecting site.	X	GNR 327 Listing Notice 1
Activity 20 of Listing Notice 1	2841.2985ha application lodged for the farm	X	GNR 327 Listing Notice 1

Any activity including the operations 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- (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, (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, reductio, refining, calcining or gasification of a mineral resource in which case activity 6 in listing notice 2 applies.															
Activity 24(ii) of NEMA Listing Notice 1 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 metres;	±2 500 m² on the Area.	X	GNR327 Listing Notice 1												
Activity 25 of Listing Notice 1 “The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15000 cubic metres.”	Chemical toilets for the site Washbays for the site		GNR 327 Listing Notice 1												
Activity 30 of NEMA Listing Notice 1 “Any process or activity identified in terms of section 53(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).”	To be determined by the Ecological specialist study in terms of screening the property falls into: <table><tr><th>Sensitivity</th><th>Feature(s)</th></tr><tr><td>Low</td><td>Low Sensitivity</td></tr><tr><td>Very High</td><td>Critical biodiveristy area 1</td></tr><tr><td>Very High</td><td>Critical biodiveristy area 2</td></tr><tr><td>Very High</td><td>Ecological support area</td></tr><tr><td>Very High</td><td>FEPA Subcatchments</td></tr></table>	Sensitivity	Feature(s)	Low	Low Sensitivity	Very High	Critical biodiveristy area 1	Very High	Critical biodiveristy area 2	Very High	Ecological support area	Very High	FEPA Subcatchments	X	GNR327 Listing Notice 1
Sensitivity	Feature(s)														
Low	Low Sensitivity														
Very High	Critical biodiveristy area 1														
Very High	Critical biodiveristy area 2														
Very High	Ecological support area														
Very High	FEPA Subcatchments														

Activity 56(ii) of NEMA Listing Notice 1 The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre- (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres; excluding where widening or lengthening occur inside urban areas.	±2 500m ² on the Area.	X	GNR327 Listing Notice 1
Activity 15 of NEMA Listing Notice 2 The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of vegetation is required for – (i) The undertaking of a linear activity; or (ii) Maintenance purposes undertaken in accordance with a maintenance management plan.	Pits+Trenches COMBINED is ±20 ha	X	GNR 325 Listing Notice 2
Activity 19 of Listing Notice 2 The removal and disposal of minerals contemplated in terms of Section 20 of the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including (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 a mineral resource in which case activity 6 in listing notice 2 applies.	2841.2985ha application lodged for the farm	X	GNR 325 Listing Notice 2
Activity 10 of NEMA Listing Notice 3	± 80 m ³	X	GNR 324 Listing Notice 3

The development of infrastructure for the storage and handling of dangerous goods (fuel), in containers with a combined capacity of between 30 and 80 m3.															
Activity 12(g) i & ii of NEMA Listing Notice 3 The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critically biodiversity areas identified in bioregional plans;	To be determined by the Ecological specialist study in terms of screening the property falls into: <table><tr><th>Sensitivity</th><th>Feature(s)</th></tr><tr><td>Low</td><td>Low Sensitivity</td></tr><tr><td>Very High</td><td>Critical biodiveristy area 1</td></tr><tr><td>Very High</td><td>Critical biodiveristy area 2</td></tr><tr><td>Very High</td><td>Ecological support area</td></tr><tr><td>Very High</td><td>FEPA Subcatchments</td></tr></table>	Sensitivity	Feature(s)	Low	Low Sensitivity	Very High	Critical biodiveristy area 1	Very High	Critical biodiveristy area 2	Very High	Ecological support area	Very High	FEPA Subcatchments	X	GNR 324 LISTING NOTICE 3
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Low	Low Sensitivity														
Very High	Critical biodiveristy area 1														
Very High	Critical biodiveristy area 2														
Very High	Ecological support area														
Very High	FEPA Subcatchments														
Activity 15 of Category A under the National Environmental Management: Waste Act 59 of 2008 The continuous establishment and reclamation of temporary stockpiles resulting from activities which require a Prospecting Right.	The continuous establishment and reclamation of temporary stockpiles resulting from activities which require a prospecting right. Product stockpiles Tailing Stockpiles Topsoil Stockpiles		GNR 633 NEMWA												
OTHER ACTIVITIES (Associated infrastructure not considered to be listed activities) Temporary Workshop Facilities	±0.04 ha		Not Listed												

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)

The entire proposed prospecting project will be conducted in five phases as described below over a period of 60 months. This prospecting will consist of non-invasive and invasive (Bulk sampling) activities. The review of available information that exists over the area of interest will be undertaken by means of conducting a literature review from satellite images and other available information.

PHASE 1**Review of Past Exploration Results**

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

Imagery Analysis & Geological Mapping

High-resolution satellite images will be studied and used to geologically map the application area. Contacts between various lithologies will be mapped and specific attention will be given to delineate and define areas underlain by alluvial gravels.

PHASE 2**Drilling**

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

PHASE 3**Invasive Prospecting Pits**

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

PHASE 4

Bulk Sampling

Table 2. Bulk Sampling Activities

ACTIVITY		DETAILS		
Number of pits/trenches planned		100 pits/ 30 trenches		
	Number of pits/trenches	Length Depth	Breadth	
	100 pits	2m	3m	0.5 - 5m
	30 trenches	100m	50m	0.5 – 5m
Locality		The location of the trenches will be verified during a site reconnaissance visit and after the pre-feasibility studies has been compiled.		
Volume Overburden (Waste)		Pits 1200m ³ Trenches 300 000m ³		
Volume Ore		Pits 1200 m ³ Trenches 300 000 m ³		
Density Overburden		2.2		
Density Ore		2.2		
Phase(s) when bulk sampling will be required		Month 13 – 49 Phase 3, 4 and 5		
Timeframe(s)		From time to time during Month 13 - 49		

PHASE 5

Analytical Desktop Study

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

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

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

e) Policy and Legislative Context

Table 3. Applicable legislation and guidelines used to compile the report

Applicable Legislation and Guidelines used to compile the report (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.)	Reference where applied	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT (E.g In terms of the National Water Act:-Water Use License has/has not been applied for).
Conservation of Agricultural Resources Act (Act 43 of 1983) and Regulations (CARA)	<ul style="list-style-type: none"> - Section 5: Implementation of control measures for alien and invasive plant species; - Section 6: Control measures. - Regulation GN R1048, published on 25 May 1984, in terms of CARA 	- Control measures are to be implemented upon the approval of the EMPR.
Constitution of South Africa (Act 108 of 1996)	<ul style="list-style-type: none"> - Section 24: Environmental right - Section 25: Rights in Property - Section 27: Water and sanitation right 	- To be implemented upon the approval of the EMPR.
Environment Conservation Act (Act 73 of 1989) and Regulations (ECA)	<ul style="list-style-type: none"> - Sections 21, 22, 25, 26 and 28: EIA Regulations, including listed activities that still relate to the existing section of ECA. - Section 28A: Exemptions. 	- To be implemented upon the approval of the EMPR.
Fencing Act (Act 31 of 1963)	- 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.	- Control measures are to be implemented upon the approval of the EMPR.
Hazardous Substances Act (Act 15 of 1973) and Regulations read together with NEMA and NEMWA	- Definition, classification, use, operation, modification, disposal or dumping of hazardous substances.	- Noted and Considered measures are to be implemented upon the approval of the EMPR.

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"> - Entire Act. 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.
Mineral and Petroleum Resources Development Act (Act 28 of 2002) and Regulations as amended	<ul style="list-style-type: none"> - Entire Act. - Regulations GN R527 	<ul style="list-style-type: none"> - A Prospecting Right has been applied for (NC) 30/5/1/1/2/13217PR. - Rights and obligations to be adhered to.
National Environmental Management Act (Act 107 of 1998) and Regulations as amended	<ul style="list-style-type: none"> - Section 2: Strategic environmental management principles, goals and objectives. - Section 24: Foundation for Environmental Management frameworks. - Section 24N: - Section 24O: - Section 28: The developer has a general duty to care for the environment and to institute such measures to demonstrate such care. - Regulations GN R547, more specifically Chapters 5 and 7, where applicable (the remainder was repealed) published on 18 June 2010 in terms of NEMA (Environmental Management Framework Regulations) - Regulations GN R982 to R985, published on 4 December 2014 in terms of NEMA (Listed Activities) - Regulations GN R993, published on 8 December 2014 in terms of NEMA (Appeal) - Regulations GN R994, published on 8 December 2014 in terms of NEMA (exemption) - Regulations GN R205, published on 12 March 2015 in terms of NEMA (National appeal Amendment Regulations) 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.

	<ul style="list-style-type: none"> - Regulations GN R1147, published on 20 November 2015 in terms of NEMA (Financial Provision) 	
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 - Regulation GN R551, published on 12 June 2015 (amended Categories 1 to 5 of GN 983) in terms of NEM:AQA (Atmospheric emission which have a significant detrimental effect on the environment) - Regulation GN R283, published on 2 April 2015 in terms of NEM:AQA (National Atmospheric Emissions Reporting Regulations) (Group C-Mines) 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR. - This is also legislated by Mine Health and Safety from DMR and is to be adhered to.
National Environmental Management: Biodiversity Act (Act 10 of 2004)	<ul style="list-style-type: none"> - Section 52 of The National Environmental Management Act: Biodiversity Act (NEMBA) (Act 10 of 2004) states that the MEC/Minister is to list ecosystems that are threatened and in need of protection. - Section 53 states that the Minister may identify any process or activity in such a listed ecosystem as a threatening process. - A list of threatened and protected species has been published in terms of Section 56(1) GG 29657 GNR 151 and GNR 152, Threatened or Protected Species Regulations. <p>Commencement of Threatened or Protected Species Regulations 2007 : 1 June 2007 GNR 150/GG 29657/23-02-2007</p> <p>Publication of lists of critically endangered, vulnerable and protected species GNR 151/GG 29657/23-02-2007 *</p>	<ul style="list-style-type: none"> - A permit application regarding protected plant species needs to be lodged with DENC if any protected species is encountered. Control measures are to be implemented upon the approval of the EMPR.

	<p>Threatened or Protected Species Regulations GNR 152/GG 296547/23-02-2007 *</p> <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.- Regulation GN R151, published on 23 February 2007 (List fo Critically Endangered, Vulnerable and Protected Species, 2007) in terms of NEM: BA- Regulation GN R152, published on 23 February 2007 (TOPS) in terms of NEM:BA- Regulations GN R507 to 509 of 2013 and GN 599 of 2014 in terms of NEM:BA (Alien Species)													
<p>The National Environmental Management Act: Protected Areas Act (NEMPAA) (Act 57 of 2003) provides for the protection of ecologically viable areas that are representative of South Africa’s natural biodiversity and its landscapes and seascapes.</p>	<ul style="list-style-type: none">- Chapter 2 lists all protected areas.	<p>Applicable. The prospecting operation does fall within protected areas which is known.</p> <table border="1"><thead><tr><th>Sensitivity</th><th>Feature(s)</th></tr></thead><tbody><tr><td>Low</td><td>Low Sensitivity</td></tr><tr><td>Very High</td><td>Critical biodiversity area 1</td></tr><tr><td>Very High</td><td>Critical biodiversity area 2</td></tr><tr><td>Very High</td><td>Ecological support area</td></tr><tr><td>Very High</td><td>FEPA Subcatchments</td></tr></tbody></table> <p>Beatrys (Layon Vale) falls into Critical Biodiversity Area 1 and 2 as well as Ecological Support Areas and the FEPA Sub catchments in terms of the screening report.</p>	Sensitivity	Feature(s)	Low	Low Sensitivity	Very High	Critical biodiversity area 1	Very High	Critical biodiversity area 2	Very High	Ecological support area	Very High	FEPA Subcatchments
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<p>National Environmental Management: Waste Management Act (Act 59 of 2008)</p>	<ul style="list-style-type: none">- Chapter 4: Waste management activities- Regulations GN R634 published on 23 August 2013 in terms of NEM:WA (Waste Classification and Management Regulations)	<ul style="list-style-type: none">- To be implemented upon the approval of the EMPR.												

	<ul style="list-style-type: none"> - Regulations GN R921 published on 29 November 2013 in terms of NEM:WA (Categories A to C – Listed activities) - National Norms and Standards for the Remediation of contaminated Land and Soil Quality published on 2 May 2014 in terms of NEM:WA (Contaminated land regulations) - Regulations GN R634 published on 23 August 2013 in terms of NEM: WA (Waste Classification and Management Regulations) - Regulations GN R632 published on 24 July 2015 in terms of NEM: WA (Planning and Management of Mineral Residue Deposits and Mineral Residue Stockpiles) - Regulations GN R633 published on 24 July 2015 in terms of NEM: WA (Amendments to the waste management activities list published under GN921) 	
National Forest Act (Act 84 of 1998) and Regulations	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - A permit application regarding protected tree species needs to be lodged with DAFF if necessary. - Control measures are to be implemented upon the approval of the EMPR.
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 paleontological site. 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR. Fossil finds procedure are attached to the PIA.

	<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. - Regulation GN R548 published on 2 June 2000 in terms of NHRA 	
National Water Act (Act 36 of 1998) and regulations as amended, <i>inter alia</i> Government Notice No. 704 of 1999	<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. - Section 21: Water uses In terms of Section 21 a licence is required for: <ul style="list-style-type: none"> (a) taking water from a water resource; (b) storing water; (c) impeding or diverting the flow of water in a watercourse; (f) Waste discharge related water use; (g) disposing of waste in a manner which may detrimentally impact on a water resource; (i) altering the bed, banks, course or characteristics of a watercourse; (j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and; 	<ul style="list-style-type: none"> - A water use application (WULA) must be submitted and will be submitted to run concurrently with the Prospecting Right application. - Control measures are to be implemented upon the approval of the EMPR.

	<ul style="list-style-type: none"> - Regulation GN R704, published on 4 June 1999 in terms of the National Water Act (Use of water for mining and related activities) - Regulation GN R1352, published on 12 November 1999 in terms of the National Water Act (Water use to be registered) - Regulation GN R139, published on 24 February 2012 in terms of the National Water Act (Safety of Dams) - Regulation GN R398, published on 26 March 2004 in terms of the National Water Act (Section 21 (j)) - Regulation GN R399, published on 26 March 2004 in terms of the National Water Act (Section 21 (a) and (b)) - Regulation GN R1198, published on 18 December 2009 in terms of the National Water Act (Section 21 (c) and (i) – rehabilitation of wetlands) - Regulations GN R1199, published on 18 December 2009 in terms of the National Water Act (Section 21 (c) and (i)) - Regulations GN R665, published on 6 September 2013 in terms of the National Water Act (Amended GN 398 and 399 – Section 21 (e), (f), (h), (g), (j)) 	
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. 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.
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. 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.
Road Traffic Act (Act 93 of 1997) and Regulations	<ul style="list-style-type: none"> - Entire Act. 	<ul style="list-style-type: none"> - Control measures are to be implemented upon the approval of the EMPR.

Water Services Amendment Act (Act 30 of 2007)	- It serves to provide the right to basic water and sanitation to the citizens of South Africa (giving effect to section 27 of the Constitution).	- Control measures are to be implemented upon the approval of the EMPR.
National Land Transport Act, (Act 5 of 1998)		- To take note.
Spatial Planning and Land Use Management (Act 16 of 2013 (SPLUMA) and regulations	- To provide a framework for spatial planning and land use management in the Republic; - To specify the relationship between the spatial planning and the land use management, amongst others - Regulations GN R239 published on 23 March 2015 in terms of SPLUMA	- To be implemented upon the approval of the EMPR.
Subdivision of Agricultural Land Act, 70 of 1970 and regulations	- Regulations GN R373 published on 9 March 1979 in terms of Subdivision of Agricultural Land	- To take note.
Basic Conditions of Employment Act (Act 3 of 1997)) as amended	- To regulate employment aspects	- To be implemented upon the approval of the EMPR
Community Development (Act 3 of 1966)	- To promote community development	- To be implemented upon the approval of the EMPR
Development Facilitation (Act 67 of 1995) and regulations	- To provide for planning and development	- To take note.
Development Facilitation (GNR1, GG20775, 07/01/2000)	- Regulations re application rules S26, S46, S59	- To take note.
Development Facilitation (GN732, GG14765, 30/04/2004)	- Determines amount, see S7(b)(ii)	- To take note.
Land Survey Act (Act 8 of 1997)) and regulations, more specifically GN R1130	- To control land surveying, beacons etc. and the like; - Agriculture, land survey S10	- To take note.
National Veld and Forest Fire Act (Act 101 of 1998)) and regulations, more specifically GN R1775	- To regulate law on veld and forest fires - (Draft regulations s21)	- To be implemented upon approval of the EMPR

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)

The Kimsa Mining Project is in line with the 'Beneficiation Strategy for the Minerals Industry of South Africa' (DMR, 2011) in terms of aiming to beneficiate diamonds for sale/export. The benefits of this will fall directly to the Northern Cape Province and, specifically, the Siyancuma District.

In addition, the South African National Development Plan aims to eliminate poverty and reduce inequality by 2030. South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society. The Kimsa Mining Project will contribute to achieving this plan in terms of direct and indirect employment of people from the local and district municipalities as well as investment in the region and on a national scale.

Need

Analysis of the Diamond Industry – ALROSA (website)

The Information on the analysis of the diamond industry was obtained from the ALROSA website who is one of the biggest diamond producers in the world.

The world diamond market is represented by diamond mining and trade in rough diamonds. The bulk of the world diamond mining is concentrated in nine countries, with their share in the global production in physical terms as high as 99%.

The world's largest producers of natural diamonds are Russia, the Democratic Republic of Congo (DRC) and Botswana, all together accounting over 60% of the global diamond production.

Top Countries in the Global Diamond Production 2016: 134.1 mln. Carats

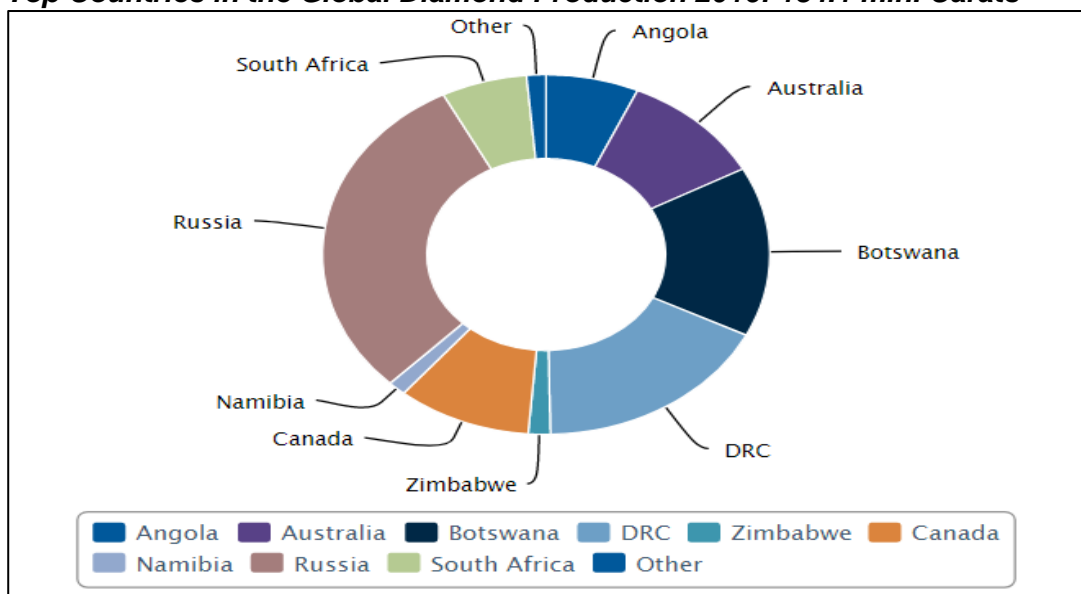


Figure 3. Kimberley Process companies' data Global Diamond Production 2011-16 (thousands of carats)

World diamond production based on the costs of produced rough diamonds are dominated by Russia, Botswana and Canada with a combined production of more than 60% of the total worldwide production

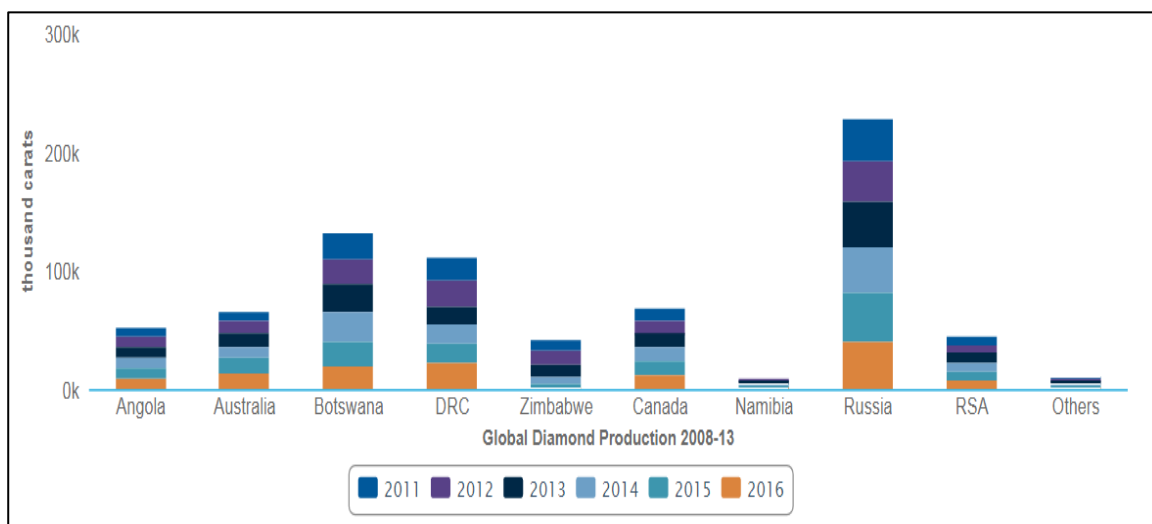


Figure 4. Global Diamond Production 2011-16 (thousands of carats) Kimberley Process companies' data

Russia ranks first in the world's diamond production. ALROSA Group accounts for 93% of the total diamond production in the Russian Federation in physical terms, and it is the leader of the global diamond mining industry. Major mining companies are engaged in mining in the main diamond-producing countries, the exception being Zimbabwe and the DRC, where diamond deposits are developed by small companies and prospectors. The graph below represents the geography of the companies' activities including exploration.

Diamond Production by Leading Companies, 2016(* - including Ekati; Companies' data)

The world's diamond mining is concentrated in the major primary deposits accounting for about 60% of the global diamond production. The remaining production is concentrated in placer deposits, the principal of them located in the DRC (Mbiji-Mayii) and Zimbabwe (Marange).

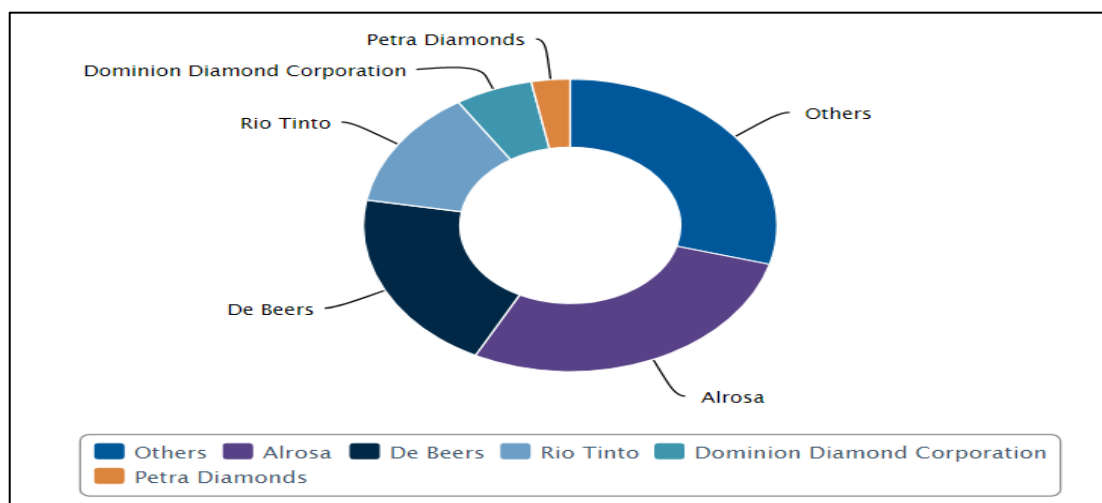


Figure 5. Diamond Production by Leading Companies, 2016(* - including Ekati; Companies' data)

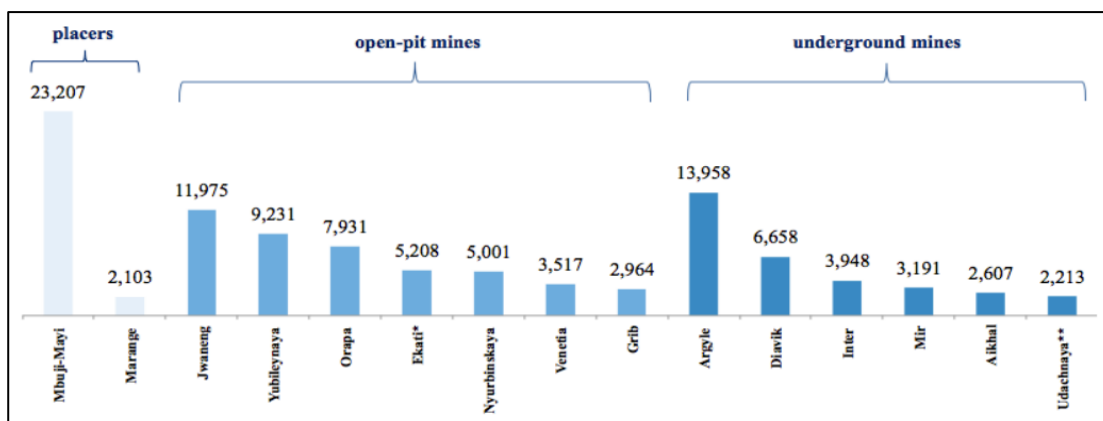


Figure 6. Production Output of the World's Major Diamond Deposits, 2016 (thousand carats) Kimberley Process and companies' data; * - Ekati includes open-pit and underground mining; ** - output, including further development of the open-pit.

By their attributes diamonds from deposits fall into two categories: gem quality and industrial grade diamonds. The former is used in diamond jewellery production, while the latter is used for industrial purposes (manufacture of drills, saws, and abrasive powders). Gem quality rough diamonds are sorted by size, colour, quality and shape, and then are sold to buyers in conformity with the sales policy adopted in a rough diamond production company. Depending on the quality of the mined rough diamonds, the current state of the market, the adopted marketing policy, companies use different approaches to diamond sales: sights, tenders, auctions, spot transactions and long-term contracts.

The world's largest trading centres, which concentrate the bulk of trade in natural rough diamonds, are India, Belgium, the UAE, the USA, Hong Kong and Israel. Being sold from mines, natural rough diamonds arrive at cutting and polishing plants to become polished diamonds that will be used in jewellery making.

(The information above was sourced from the ALROSA website. ALROSA is a world leader in the world diamond mining industry, a Russian partially state-owned diamond mining company)

The Diamond Pipeline

The Diamond Pipeline can be defined as the route the diamond takes from mine to end consumer. The diamond pipeline, typically, comprises.



Figure 7. The Diamond Pipeline

Exploration/Prospecting; involves geologists finding diamond deposits in different areas. Prospecting is vital to the future survival of any diamond business as there is a predicted supply-demand gap.

Mining and Recovery; once diamonds have been discovered and surveys shown that it is financially viable to mine them; they are now recovered from the ground. The manner in which they are mined and recovered depends on their source, thus, where they are found.

Sorting and valuing; process of sorting and valuing of diamonds, categorizing them according to size, quality, model and colour.

Cutting and polishing; refers to manufacturing of diamonds; the process of turning rough diamonds into polished.

Polished Market; this is referred to as the ‘diamond exchange bourse’, a place where diamonds are traded. These are located in some of the world’s major diamond manufacturing centres, e.g. Belgium.

Retailing; polished diamonds find their way to Jewellers and Consumers through Wholesalers and Retailers.

International Diamond Market Trends

Although global financial stability has proven quite volatile over the past 4-5 years, the diamond industry appears to have stabilised somewhat, with moderate increases in diamond prices forecast for the immediate future.

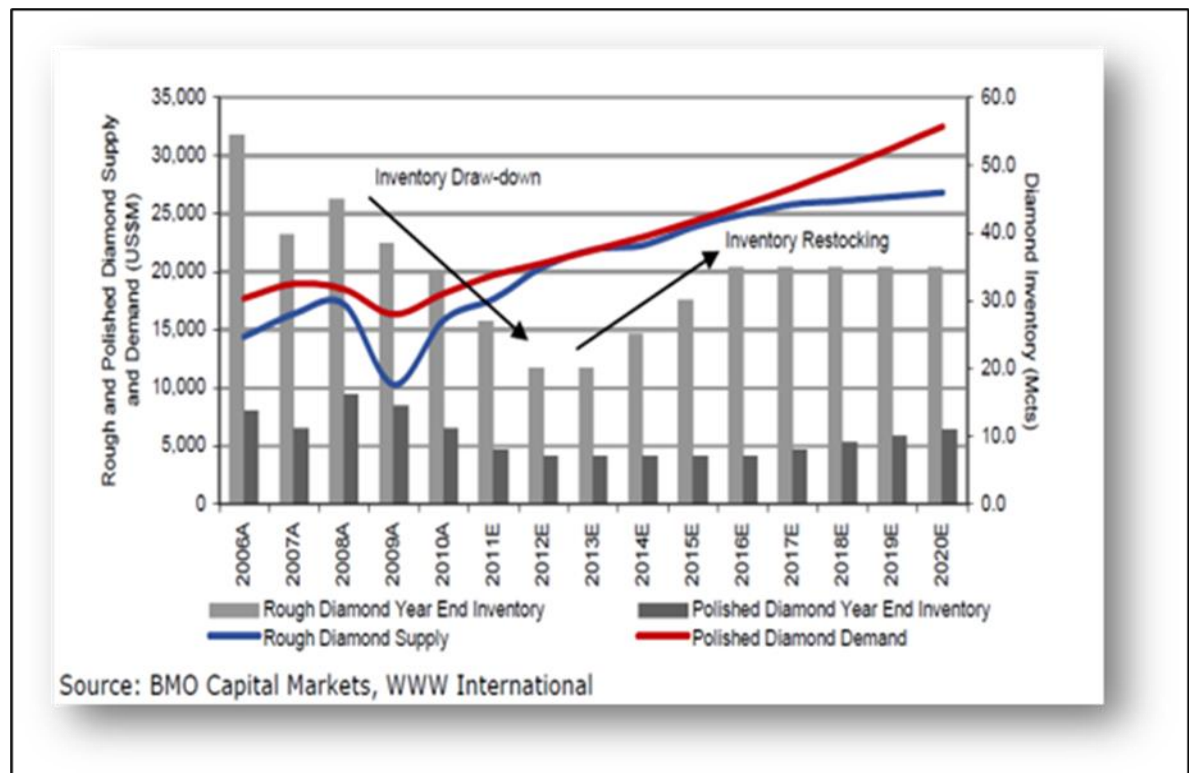


Figure 8. Inventory movements support diamond prices(USD, Mct)

BMO Capital Markets (Sterck, 2011) estimated at the time that Chinese demand for polished diamonds accounted for 5% or USD1 billion of the market in 2010. While this represents a relatively small proportion of the market currently, growth is extremely strong.

De Beers reported that Chinese demand for polished diamonds grew at 25% in 2010, significantly ahead of GDP growth of 13%. Looking ahead, momentum into 2011 suggests that growth of 15% may be possible. From 2012 onwards, growth in household disposable income is forecast to average 11% to 12% per annum. This translates into minimum growth in diamond demand of 13% per annum.

From 2012 onwards diamond demand is likely to grow in line with economic growth at around 10% per annum. Combining steady demand growth from the established diamond consuming nations and strong growth in demand from emerging consumer's results in a forecast of polished diamond demand almost doubling by 2020, resulting in a total market value of over USD30 billion in nominal terms.

Desirability:

No	Description	Yes/No
1	Does the proposed land use / development fit the surrounding area?	Yes
2	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	Yes
3	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	Yes
4	Will the proposed land use / development impact on the sense of place?	Yes
5	Will the proposed land use / development set a precedent?	No
6	Will any person's rights be affected by the proposed land use / development?	Yes
7	Will the proposed land use / development compromise the "urban edge"?	No

Benefits:

No	Description	Yes/No
1	Will the land use / development have any benefits for society in general?	Yes
2	Will the land use / development have any benefits for the local communities where it will be located?	Yes

g) Period for which the environmental authorisation is required

The period applied for, being 5 years with the option to renew for a further 3 years.

h) Description of the process followed to reach the proposed preferred site

NB!! – This section is not about the impact assessment itself; It is about the determination of the specific site layout having taken into consideration (1) the comparison of the originally proposed site plan, the comparison of that plan with the plan of environmental features and current land uses, the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout as a result.

In order to ensure that the proposed development enables sustainable development, a number of feasible options must be explored. Motivation for the footprint of the actual prospecting operation (i.e. excavations) will not be provided here, as the location of the prospecting is determined by possible geological location of the mineral resource (as discussed in section f).

Prospecting Site Location:

A Prospecting Right application was lodged to identify the preferred areas on the property. The prospecting will be done with pitting, trenches and bulk sampling which will indicate if there

are areas on the property that can be viably mined with grade and quality determined with the bulk samples taken off the property.

Prospecting infrastructure will be placed strategically by incorporating prospecting project demands, environmental sensitivities and IAP concerns, as identified during the EIA process. Thus, the prospecting site location is primarily based on proximity to the access roads, proximity to the areas earmarked for prospecting and limited additional impact on the environment and heritage resources. This renders the consideration of further alternative locations in terms of the prospecting site location other than the prospecting residue deposits unnecessary.

The prospecting method of pitting and open trenches with continued backfilling is the only economic viable method currently being used by the alluvial diamond fraternity; it is also the only cost-effective method. There is no alternative prospecting method.

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;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

(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:

Property: **Portion 3 (Beatrys) of the farm Lanyon Vale no 376.**

District: Hay

Province: Northern Cape

Extent: 2 841.2985 ha

The property on which the Prospecting Right was applied for is determined by the geological location of the mineral resource. Therefore, there are no alternatives for the location of the activity, except for not proceeding with the operation. This will however cause the underutilisation of a national economic resource.

The area is accessible via tar and gravel roads from different directions.

Infrastructure in the Siyancuma area is well developed with good road and rail networks, electricity grid and water. Experienced labour is available in the area as is an extensive network of secondary industries geared towards small and large-scale diamond mining. Water for Processing Plant will be a crucial element that needs to be secured towards the successful operating of the project. A water application will be submitted to the Department of Water and Sanitation which may include a Section 21 (a), (b), (g), (i) and (c) application.

Alternatives considered:-

As the area covered under the Prospecting Right had been selected based on the assumption of alluvial gravels, it will not be viable to consider an alternative site for the mine. Alternatives for land are thus not available, as the prospecting right application cannot be considered over another area.

Therefore, there are no alternatives to the area.

(b) The type of activity to be undertaken:**Land Use**

No specialist comparative land use assessment was conducted, but the prospecting area has agricultural potential and is used for grazing by the property owner. It should also be noted that there is a landing strip located on the application area.

It would however be feasible to determine if there are any economically viable minerals to mine as prospecting can also generate income for the property owner that can be used for further development of the property.

It can also be seen on the topographical map that old diggings are present on the prospecting site, therefore historic mining activities have taken place on the property.

The prospectors will have to promote rehabilitation strategies to ensure that open pits and trenches are backfilled. There will be infield screening to ensure that all oversize material is deposited back into the pits and trenches. This material should be covered with the overburden (where available), and topsoil that has been previously put aside for this purpose. The post-prospecting land use should be determined so that the development strategies of the farm can still continue beyond the prospecting and mining of the area should the area be viable for mining.

Prospecting Method

The planned prospecting technique is that of drilling and open pits and trenches with continued backfilling. This prospecting technique is the only economic viable method currently being used by the diamond fraternity.

Prospecting Infrastructure

Alternatives and considerations pertaining the project infrastructure were discussed in section h above.

Alternatives considered:-

The prospecting target area is within the area suspected to carry diamonds and therefore no alternative to the application area can be considered. The only alternative land use on the area that will be selected for the processing plant is grazing; however, the applicant's main economic activity is prospecting and for this reason does not favour any other alternative land use.

(c) The design or layout of the activity:

The site infrastructure will need to be strategically placed by incorporating prospecting project demands and environmental sensitivities identified during the Environmental Impact Assessment process. Thus, the site layout will primarily be based on proximity to the nearby access roads, proximity to the areas earmarked for prospecting as well as limited additional impact on the environment (non-perennial drainage lines, pivots the river and wind direction), heritage resources and discussions with the relevant interested and affected parties.

The following infrastructure will be established and will be associated with the prospecting operation outside the 1:100-year flood line zone with permission of the relevant competent authority and the surface owners:

- Processing Plant : 2 X 16 feet pans with conveyers and recovery per property.
- Ablution Facilities: In terms of sewage the decision was made to use chemical toilets which can be serviced regularly by the service provider.

- Clean & Dirty water system: Berms
It is anticipated that the operation will establish stormwater control berms and trenches to separate clean and dirty water on the prospecting site.
- Fuel Storage facility (Concrete Bund walls and Diesel tanks):
It is anticipated that the operation will utilize 2 x 23 000 litre diesel tanks. These tanks must be placed in bund walls, with a capacity of 1.5 times the volume of the diesel tanks. A concrete floor must be established where the re-fuelling will take place.
- Prospecting Area: Area applied for to pit and trench for diamonds (bulk sampling).
- Roads (both access and haulage road on the prospecting site):
Although it is recommended that the operation utilize existing roads as far as possible, it is anticipated that the prospecting operation will create an additional 2 - 5 km of roads, with a width of 8 meters where no reserve exists and where the reserve exist a width of 15 meters.
- Salvage yard (Storage and laydown area).
- Product Stockpile area.
- Waste disposal site
The operation will establish a dedicated, fenced waste disposal site with a concrete floor and bund wall. The following types of waste will be disposed of in this area:
 - Small amounts of low-level hazardous waste in suitable receptacles;
 - Domestic waste;
 - Industrial waste.
- Temporary Workshop Facilities and Wash Bay.
- Water distribution Pipeline.
- Water tank :
It is anticipated that the operation will establish 1 x 10 000 litre water tanks with purifiers for potable water.

Alternatives considered:-

Alternatives for fuel storage include surface storage, underground storage and the storage of fuel in mobile tanks with a metal bund wall. Underground storage has an adverse negative pollution potential, because it is not easy to monitor leakages. Remediation measures are also not as effective as compared to surface storage tanks. Mobile tanks are a viable option for infield screening activities, but the best viable long-term option is the instalment of fuel tanks within a concrete bund wall.

In terms of water use alternatives; the operation is located next to the Orange River. Plastic pipelines are considered to be the best long-term option for transferring water, due to their temporary nature which causes minimum environmental disturbances. Therefore, a pipeline route will be designed based on the principle of minimum impacts to the environment.

If prospecting proves positive a diamond rotary plant will be established (2 x 16 feet rotary pans). Water use for a 16 feet rotary pan is in the order of 18000 litres per hour. The operation will only work in daytime hours which will constitute about 8 hours per day which will bring water consumption to 144 000 litres per day and 720 000 litres per week and 2 880 000 litres per pan per month. The cubic meters tested will be 81206.25 m³ a 16 feet pan can on capacity work about 65 tons per hour which constitutes about 117 m³ per hour.

The locality of the mine residue dam will be selected based on the following considerations, this dam will be very small due to the limited material being processed and the limited water needed:

- Areas already disturbed or mined out.
- It is in reach (1000 m) of the treatment plant.
- It is situated near the access road to the prospecting activities.
- No underlying ore bodies or geological discontinuities.
- No geomorphological impacts.
- No structures, dwellings or other points of risk on down-stream side.
- Topsoil from the treatment process will be available for final rehabilitation.

A standard slimes dam design will be established in order to maximise the capacity of the slimes dam and to minimise the risk in terms of general safety and the DWS regulations.

In terms of power generation, the options available was for Generators or ESKOM power. All of the electricity needs for the operations will be generated by a diesel generator and there would therefore be no additional pressure on the Eskom Electricity Grid.

In terms of sewage the decision was made to use chemical toilets which can be serviced regularly by the service provider.

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

- **Technique**

The area will be excavated (bulk sampling) with an excavator up to bedrock, stockpiled next to an open area and loaded onto the trucks by a frond end loader. The trucks will transport the gravel via a newly constructed road, which will be constructed to the required safety standard. No provincial roads will be used.

At the processing plant the run of mine will be fed onto a grizzly for the screening out oversize material. The gravel will be processed through a screening section for delivery to a recovery plant and associated equipment. In terms of the processing, it should take place outside the 1:100-year flood line and a processing area will be negotiated with the Department. This area will be used for all processing and stockpiling operations with an agreement entered into with the relevant Department).

- **Technology**

At the processing plant the run of mine will be fed onto a grizzly for the screening out of oversized material. The gravel will be processed through a screening section for delivery to a recovery plant and associated equipment. In terms of the processing, it should take place outside the 1:100-year flood line and a processing area footprint will still be decided after the first phases of the prospecting results. This area will be used for all processing and stockpiling operations with an agreement entered into with the farm owner.

Alternatives considered:-

The planned prospecting activities include bulk sampling with an excavator up to bedrock. The operation is also associated with processing techniques that make use of modern technologies. These are the most economic viable method currently being used by the diamond fraternity. There is no other feasible, alternative prospecting method for the bulk sampling of possible alluvial diamonds.

(e) The operational aspects of the activity:

The gravels will be loaded with an excavator on to dump trucks for conveyance to the Processing Plant. At the Processing Plant the run of mine gravels will be fed onto a grizzly for screening out oversized material. The material will be processed through a screening section for delivery to a recovery plant. Concentrate from the recovery plant will be processed through an X-Ray/Sortex plant to extract the diamonds. An area will be used for all processing and dumping operations outside the 1:100-year flood line.

Prospecting activities will primarily make use of existing roads created by previous mining activities, but there is a possibility for additional roads that could be created.

Alternatives considered:-

The conventional opencast load-haul-bulk sampling method has been proven to be the most economic viable method currently being used by the diamond fraternity. There is no other feasible, alternative prospecting method for the bulk sampling of possible alluvial diamonds.

(f) The option of not implementing the activity:

Potential land use includes grazing (game farming), agricultural (pivots) and prospecting. The majority of the area is classified to have potential for grazing land and agricultural use for crop yield. Therefore, prospecting activities are believed to be one of the economically beneficial options for the areas.

As seen in the extract from the Screening Report (below) there are currently no agricultural pivots on the proposed prospecting area and that the agricultural sensitivity of the area is predominantly low with the exception of some areas with a medium sensitivity.

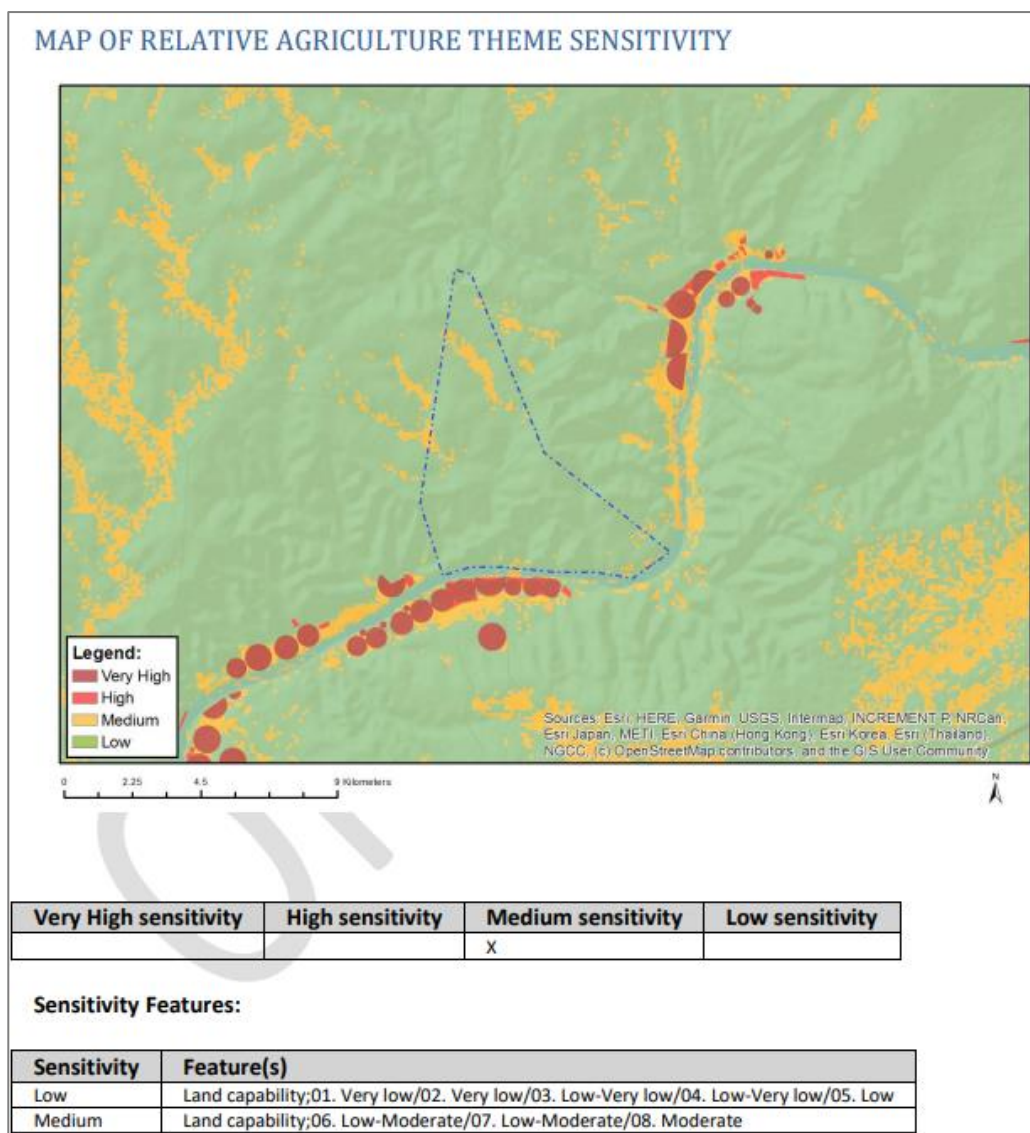


Figure 9. Relative Agricultural Theme Sensitivity for the proposed prospecting area.

Socio-Economy

The operation will make provision for ±31 job opportunities. This will be lost if the project does not proceed. Substantial tax benefits to the State and Local Government will also be lost.

Heritage and Cultural Resources

The screening report done for the prospecting right application indicated a low sensitivity for Heritage but a high to very high sensitivity for the proposed prospecting area in terms of Palaeontology.

The necessary specialist studies will be done to be included into the EIA/EMP documents. If the prospecting operation is approved, the heritage resources if any

other had been encountered will be protected through the demarcation of no-go zones and fencing off.

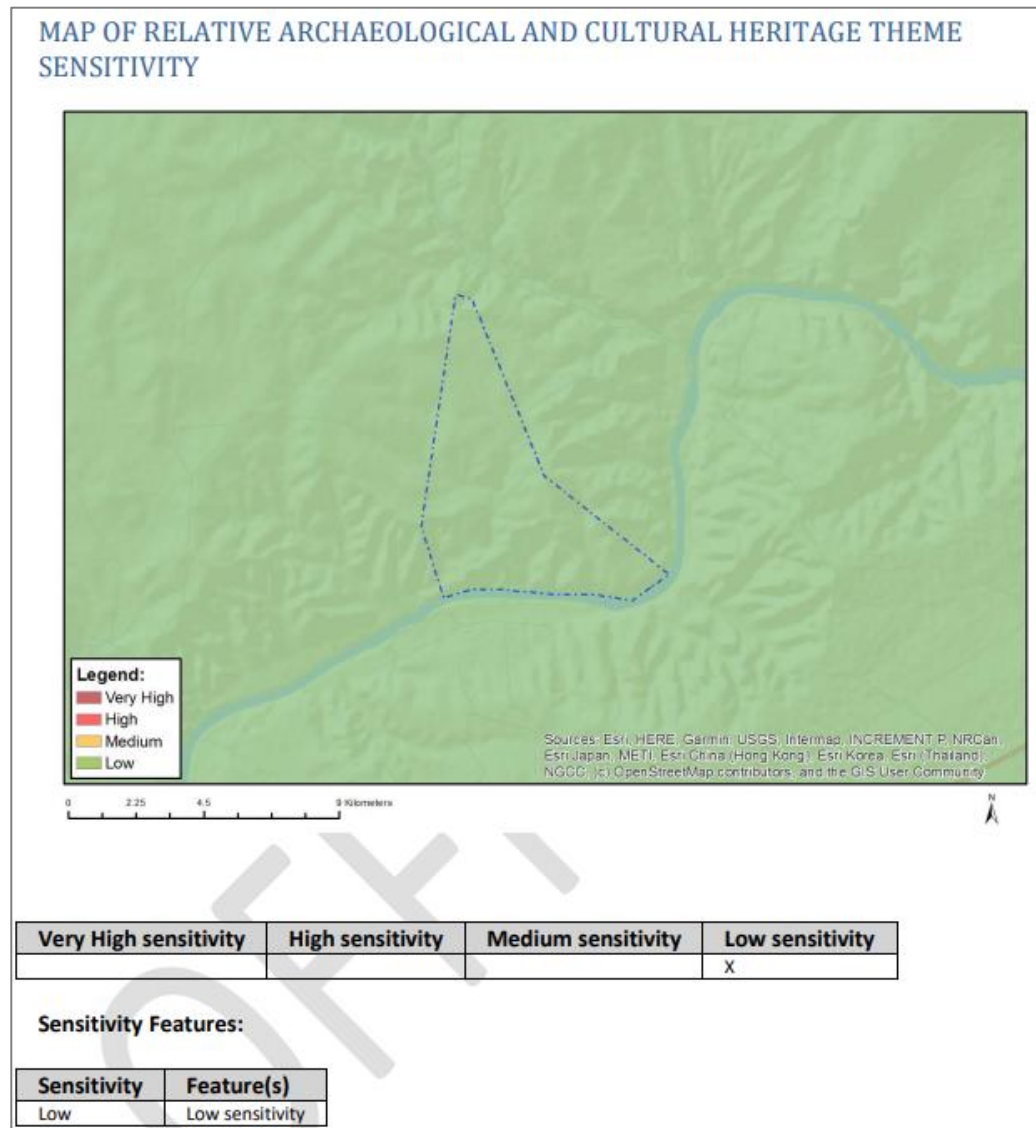


Figure 10. Relative Archaeological and Cultural Heritage Theme Sensitivity for the proposed prospecting area.

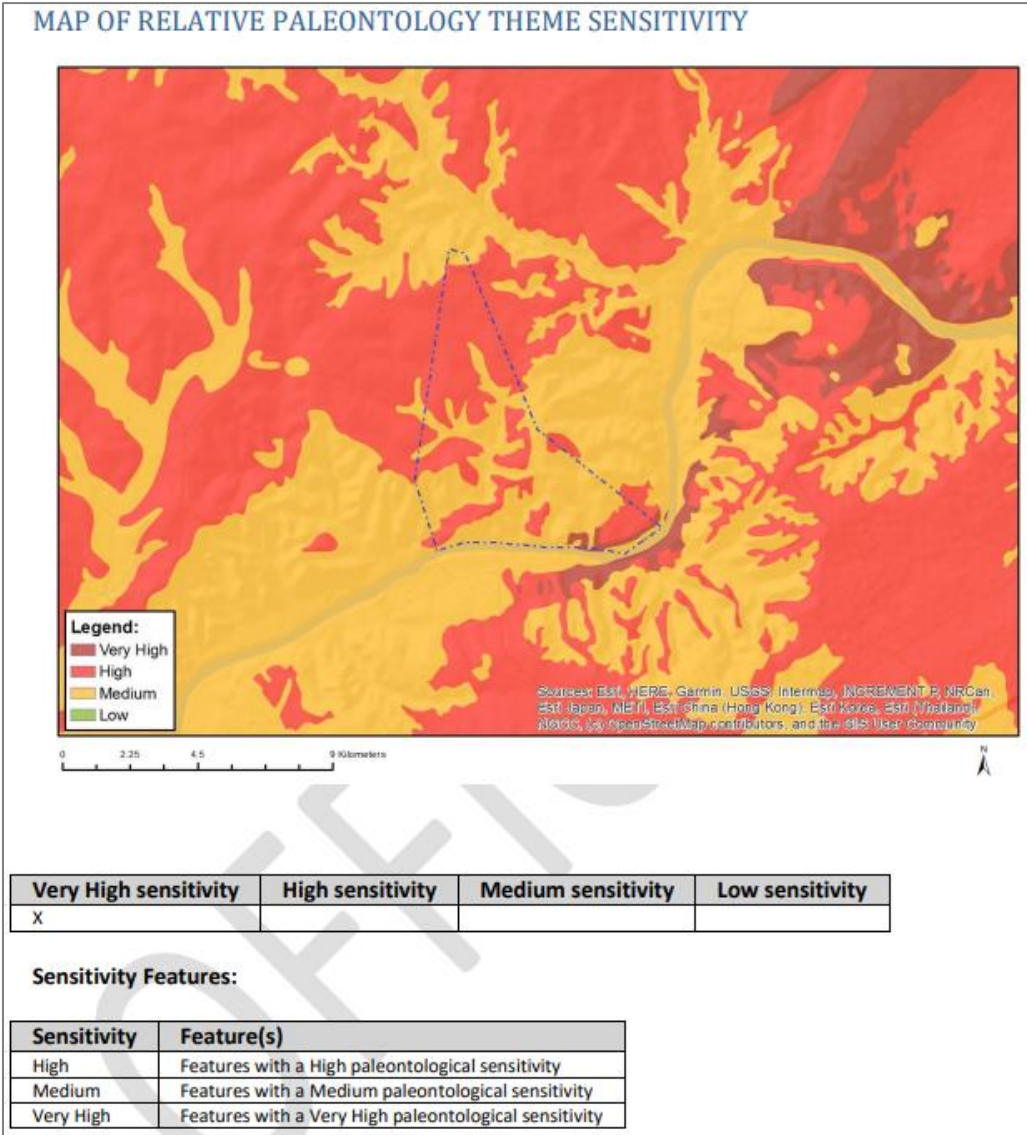


Figure 11. Relative Palaeontological Theme Sensitivity for proposed prospecting area.

Biodiversity

In terms of the screening tool that had been done for the prospecting right application the application area falls into Critical Biodiversity Area 1 and 2 as well as Ecological support areas and the FEPA Sub catchment. Furthermore, a part of the application area falls within the Freshwater ecosystem priority area quinary catchment. The necessary specialist studies will be done to confirm this.

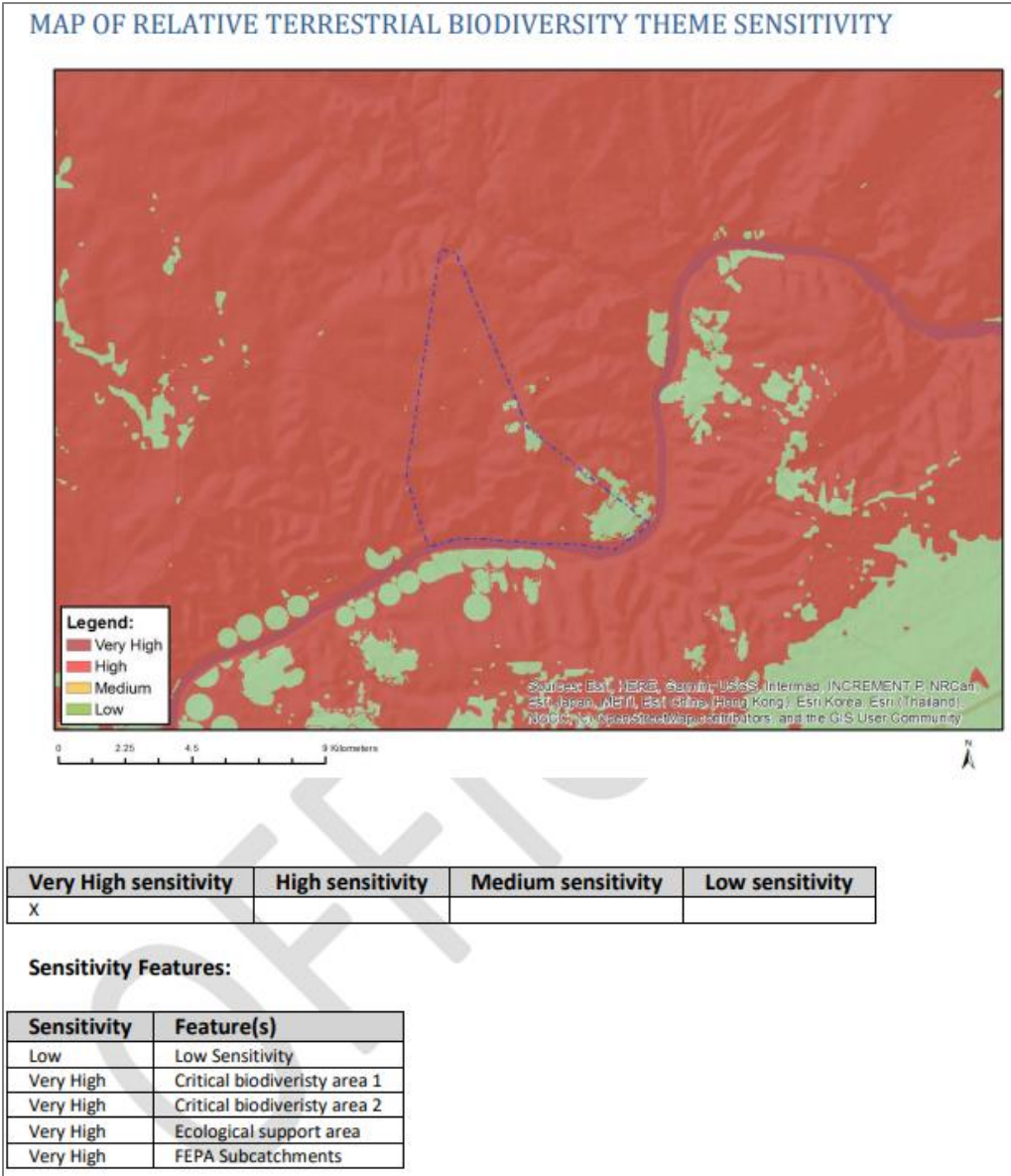


Figure 12. Final site layout plan in terms of the screening tool for Terrestrial Biodiversity

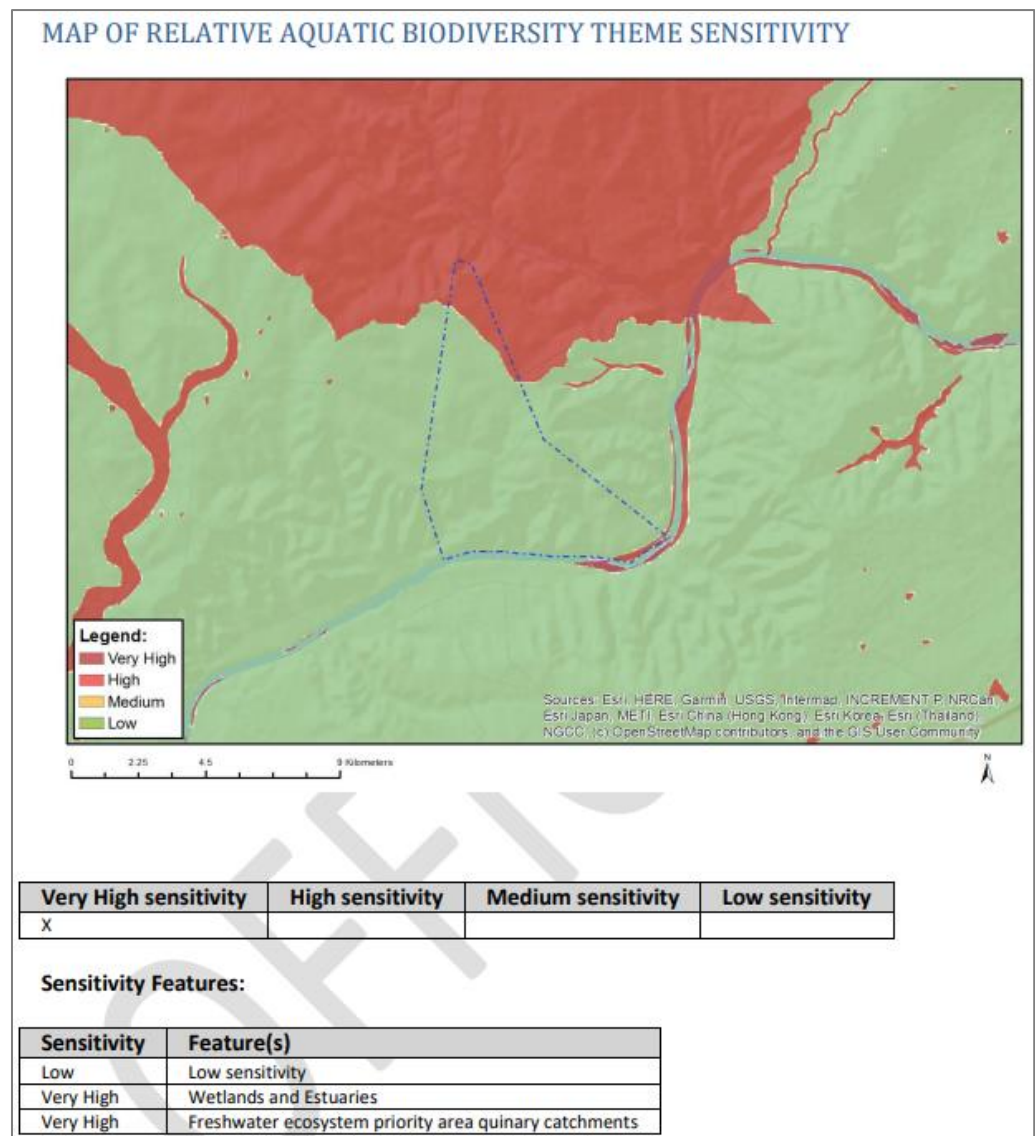


Figure 13. Final site layout plan in terms of the screening tool for Aquatic Biodiversity .

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.

A copy of the draft Scoping Report (burned to disc) will be sent to all identified interested and affected parties. All Government Departments identified were also notified by registered letters. The surface owners also received a registered letter.

Notices was also placed on the gates at the entrance of the proposed site and on the gravel road towards the site to invite any other interested parties to come forward and to register. Other notices were brought up at the library to inform the communities in the surrounding area of the proposed prospecting operation.

The draft Scoping Report will also be placed at the Douglas public Library along with a notice to notify the public of the proposed prospecting operation as well as to provide access to the draft Scoping Report to the community.

Furthermore, an advert was placed in the DFA Newspaper on 9 September 2022 which invited any other interested or affected party to come forward and register.

Proof of consultation (attendance registers, minutes of meetings and response forms) is attached as **Appendix 3**. The consultation process is still in process.

iii) Summary of issues raised by I&APs

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

Table 4. Consultation with I&APs

PLEASE SEE ATTACHED AS APPENDIX 3

iv) The Environmental attributes associated with the development footprint

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)

(1) GEOLOGY:**Regional Bedrock Geology**

The bedrock of the Orange River valley between the confluence of the Vaal and Orange Rivers at Douglas and Prieska is dominated by flat - lying Dwyka tillite and siltstone of the Karoo Supergroup. The Dwyka, typically, comprises matrix - supported diamictite with both local and transported pebbles and boulders as dropstones in a rock - flour matrix. Underlying the Dwyka, and exposed where the Orange River has incised through that sequence, are lavas of the Ventersdorp Supergroup, overlain (in places) by sediments of the Transvaal Supergroup, comprising shales, quartzites and dolomites. The bedrock is cut by faults and dolerite dykes, which are rarely exposed. The surface on which the Dwyka was deposited was irregular with several topographic highs.

The present surface of the Dwyka comprises a gently undulating terrain lying at an elevation of between 1,050m and 1,100m amsl. The river has incised into this surface to a depth of between 90m and 150m. Owing to the irregularity of the pre - Dwyka surface, several reaches of the river are superimposed on pre - Dwyka topographic highs, which, due to their relative resistance to erosion, give rise to more rugged topography. Here the Orange River is confined to gorges with increased river gradients. In contrast, the more easily eroded Dwyka has been dissected by minor tributaries of the Orange River, giving rise to a trellis - type drainage pattern. To the north of the Orange River, the Ghaap Plateau represents an ancient surface of Transvaal Supergroup rocks.

Lower Terraces

Lower elevation terraces (less than about 30 m above present river bed) of the Orange River are typified by up to 30% sand matrix with a high proportion of zeolite-rich sand lenses and a high proportion of red Drakensberg basalt clasts. These gravels normally exhibit intermediate to low diamond grades. They are typically cobble-pebble gravels with occasional boulders. Clast composition is dominated by andesite (Ventersdorp lava), dolerite, shale, quartzite, and riebeckite, with a low percentage of agate and

amygdales. Downstream of Lanyonvale (Wouterspan) BIF makes up +60% of the clast assemblages.

Clast-rounding is moderate and packing is moderate to poor, both of which impact negatively on diamond entrapment potential. Average grades of 0.5-1.2ct/m³ or 0.23-0.54cph^t are known with the occurrence of occasional large stones (P Gresse, Pers. Comm., 2005).

The lowest terrace does not appear to be as calcreted as the upper two terraces and mining is, therefore, easier. Lower terrace deposits are generally covered by 1 - 4 m of sand whereas the upper terrace deposits are capped by a hard calcrete layer some 2 - 3 m thick which protected the gravel deposits from erosion and prevented exploitation in the past.



Figure 14. Legend for Geological Map below.

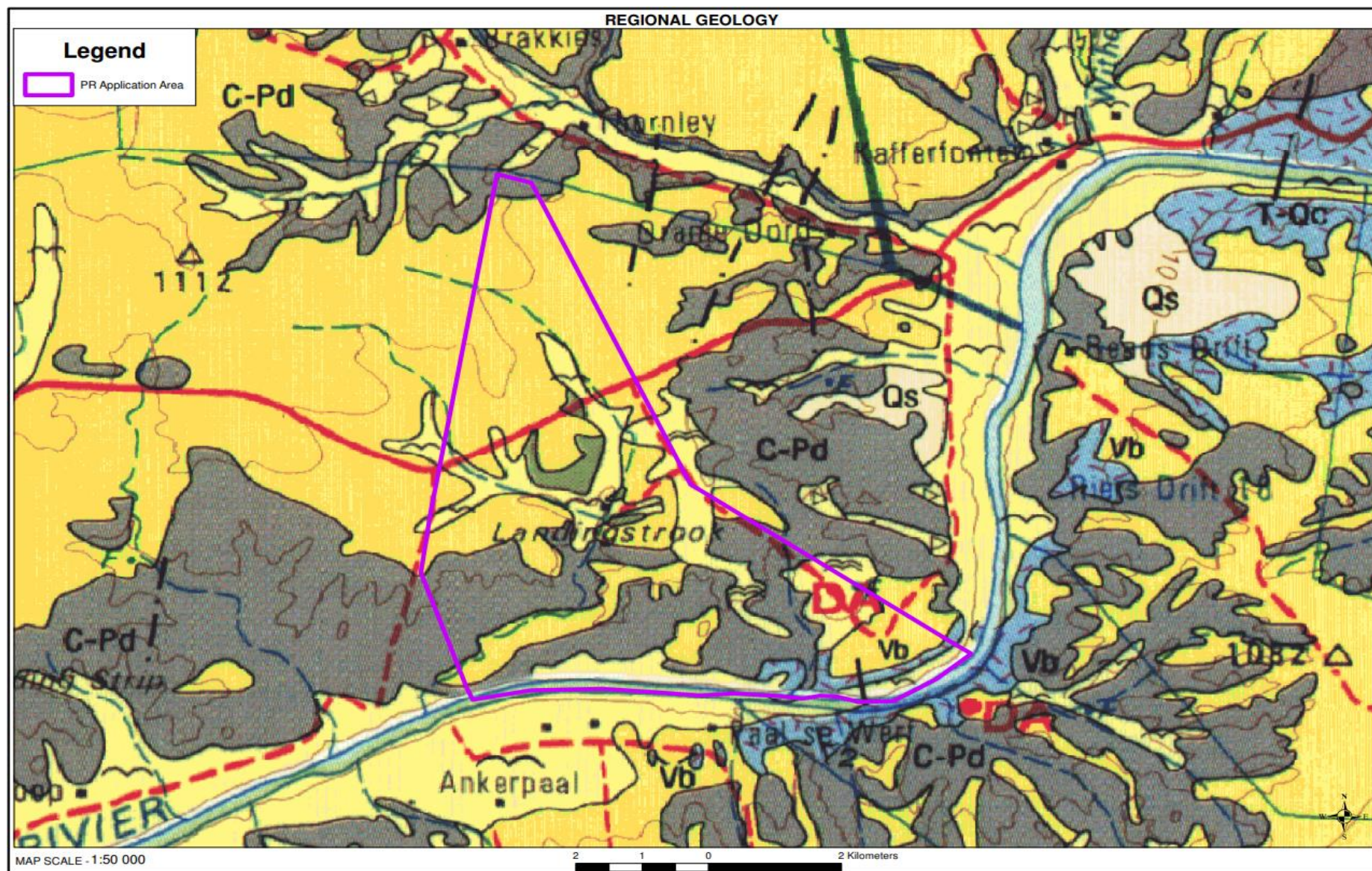


Figure 15. Geological map of Lanyon Vale (Beatry's)

(2) **CLIMATE:**

The study area falls within the Northern Upper Karoo (NKu 3) vegetation group of the Nama-Karoo Biome with a small portion along the river bed falling within the Upper Gariep Alluvial Vegetation group that is part of the inland Azonal Vegetation unit.

The Nama-Karoo is an arid biome with a mean annual precipitation (MAP) from 70 mm in the northwest and 500 mm in the southeast of the biome. The MAP for the Northern Upper Karoo vegetation group is 275 mm. Rainfall occurs predominantly in the late Summer (December to April) with the highest rainfall occurring in March mostly in the form of thunderstorms. This region experiences hot Summers ($> 30^{\circ}\text{C}$) and cold Winters (0°C) with extreme temperatures ranging from -5°C in the winter and 43°C in the summer. The mean annual potential (MAPE) evaporation measure for the area is 2615 mm. Frost is common for winters and dust devils and small whirlwinds are common for summer months. (Mucina & Rutherford, 2006)

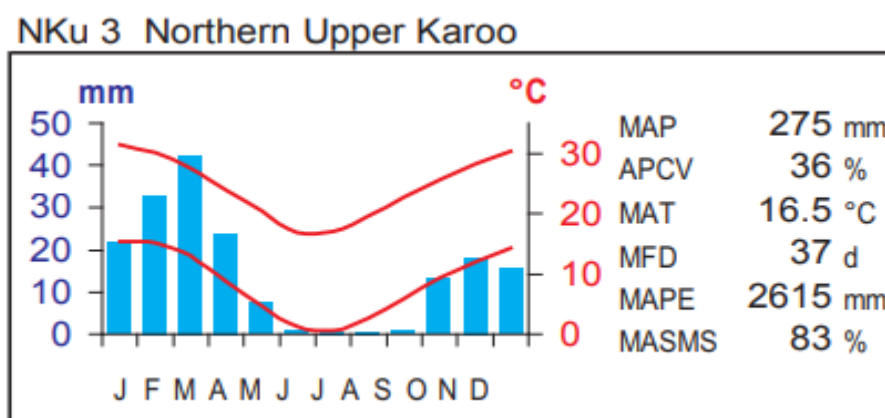


Figure 16. Climate of the Northern Upper Karoo vegetation group (Mucina & Rutherford, 2006)

(Mucina, L. & Rutherford, M.C. (eds) 2006. The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.)

(3) **Topography**

It is clear that the study area contains a highly varied topography. From aerial images and contours of the study area it is likely that the northern portion is dominated by an undulating plateau with numerous non perennial watercourses bisecting it (fig. 16). The elevation decreases steadily along this uneven rocky terrain toward the Orange River which forms the southern border of the site. Altitude in the study area varies from 1068 m to 944 m along the Orange River. This also indicates the

highly variable topography. This variable topography contributes to the high number of non-perennial watercourses in the study area. The southern portion of the property along the Orange River has been transformed as a result of historical mining activities. A large number of small drainage channels and rivers draining into the Orange River bisects the property. (figure 17 and 18).

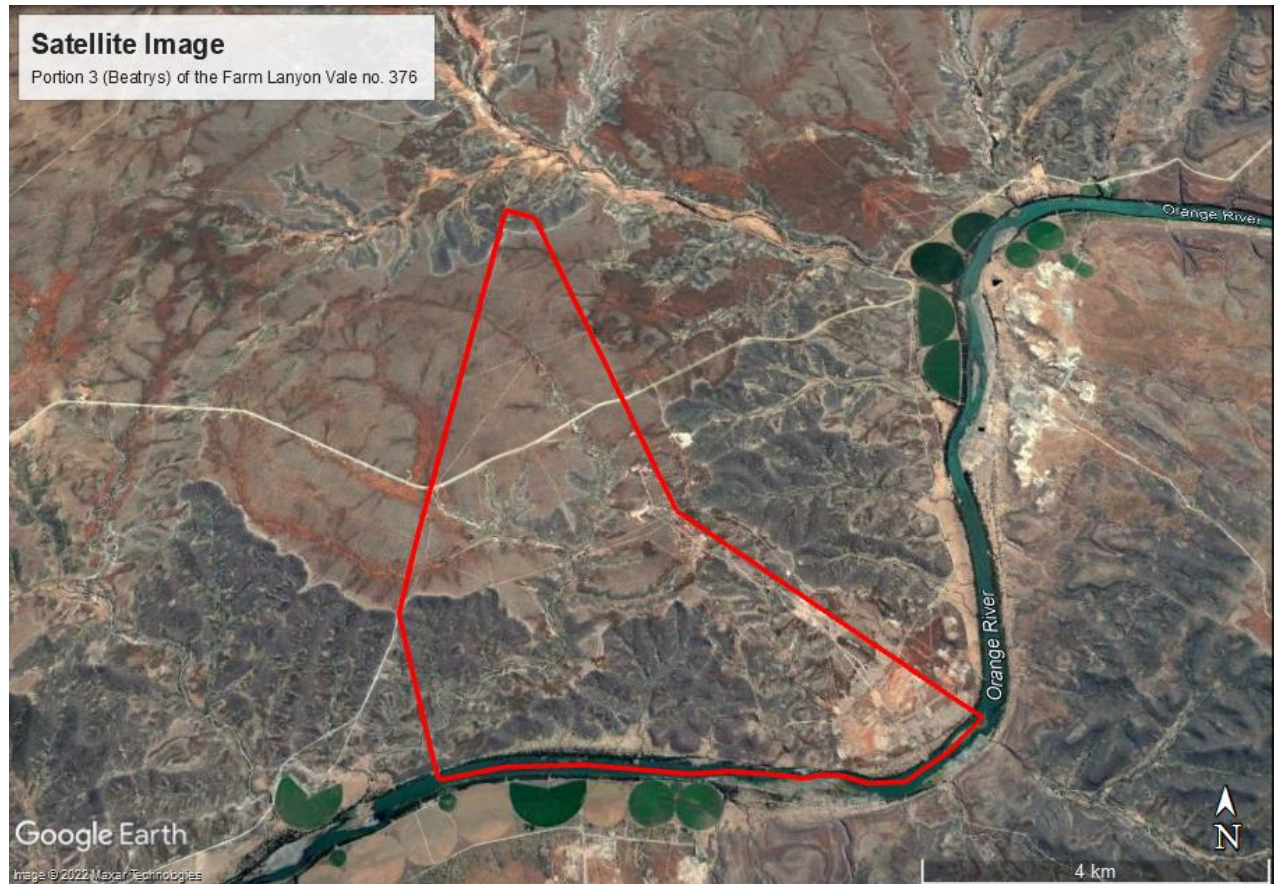


Figure 17. Satellite image of Application area on Lanyon

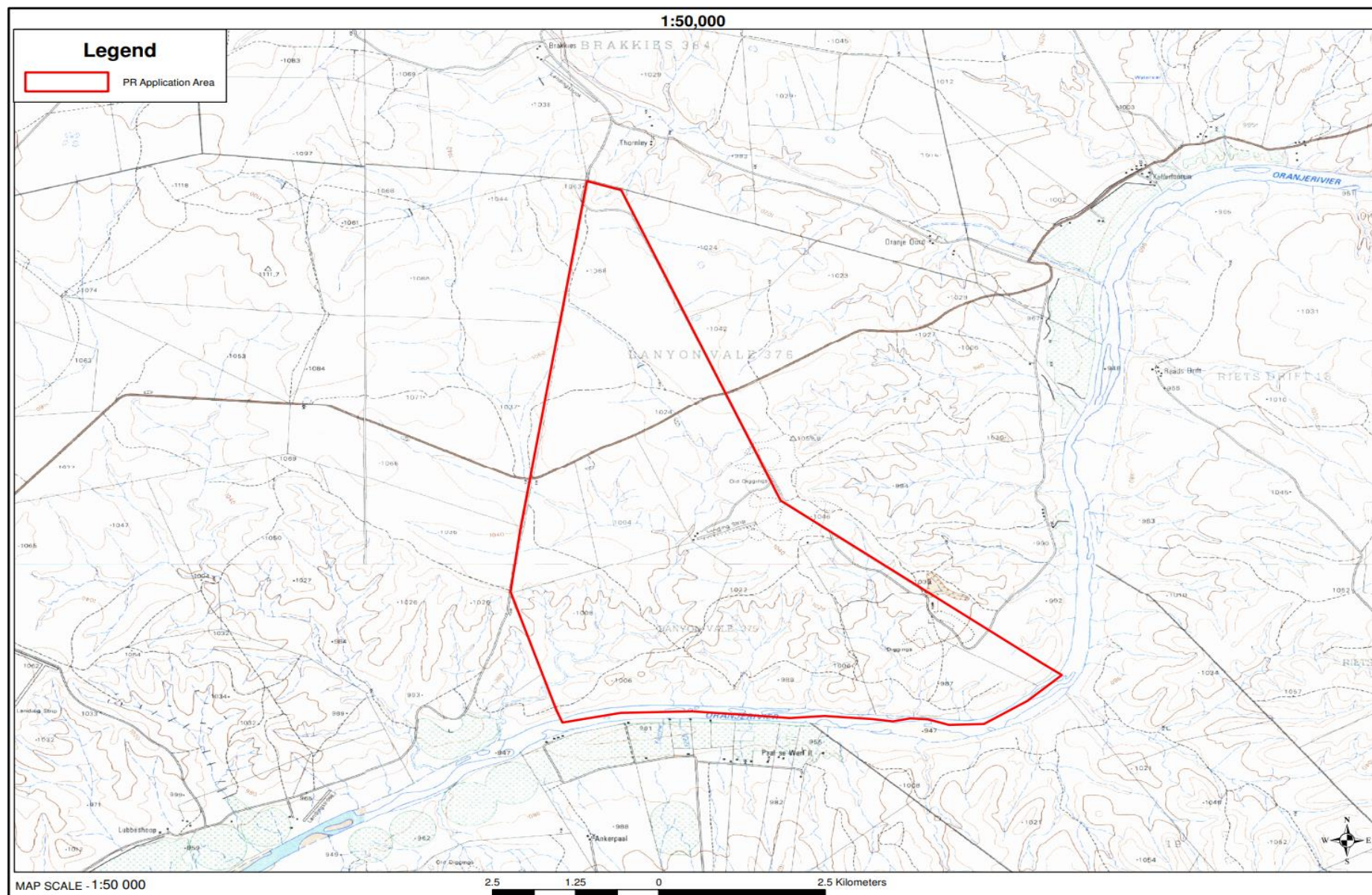


Figure 18. Topographical Map 1:50 000 application area indicated by red block.

(4) Soils

Soils of the area varies from shallow to deep, red-yellow coloured apedal soils that is freely drained soils to very shallow Glenrosa and Mispah soil forms. (Mucina & Rutherford, 2006).

The project area is located on the northern banks of the Orange River and has a high possibility of containing diamondiferous gravels. The farm is close the Wouterspan, Brakfontein/Saxendrift and Nuwejaarskraal where diamonds, large in size and high quality were mined.

(5) Pre-prospecting Land Capability

The current land uses of the project area and surroundings can be best described as agricultural lands, livestock and/or game farming and mining in the district.

(6) Land Use

The current land uses of the project area and surroundings can be best described as agricultural lands, livestock and/or game farming and mining in the district.

Specific environmental features and/or infrastructure occur on site or within close proximity include:

- Agricultural lands
- Farm buildings
- Landing strip
- Orange river
- Water boreholes

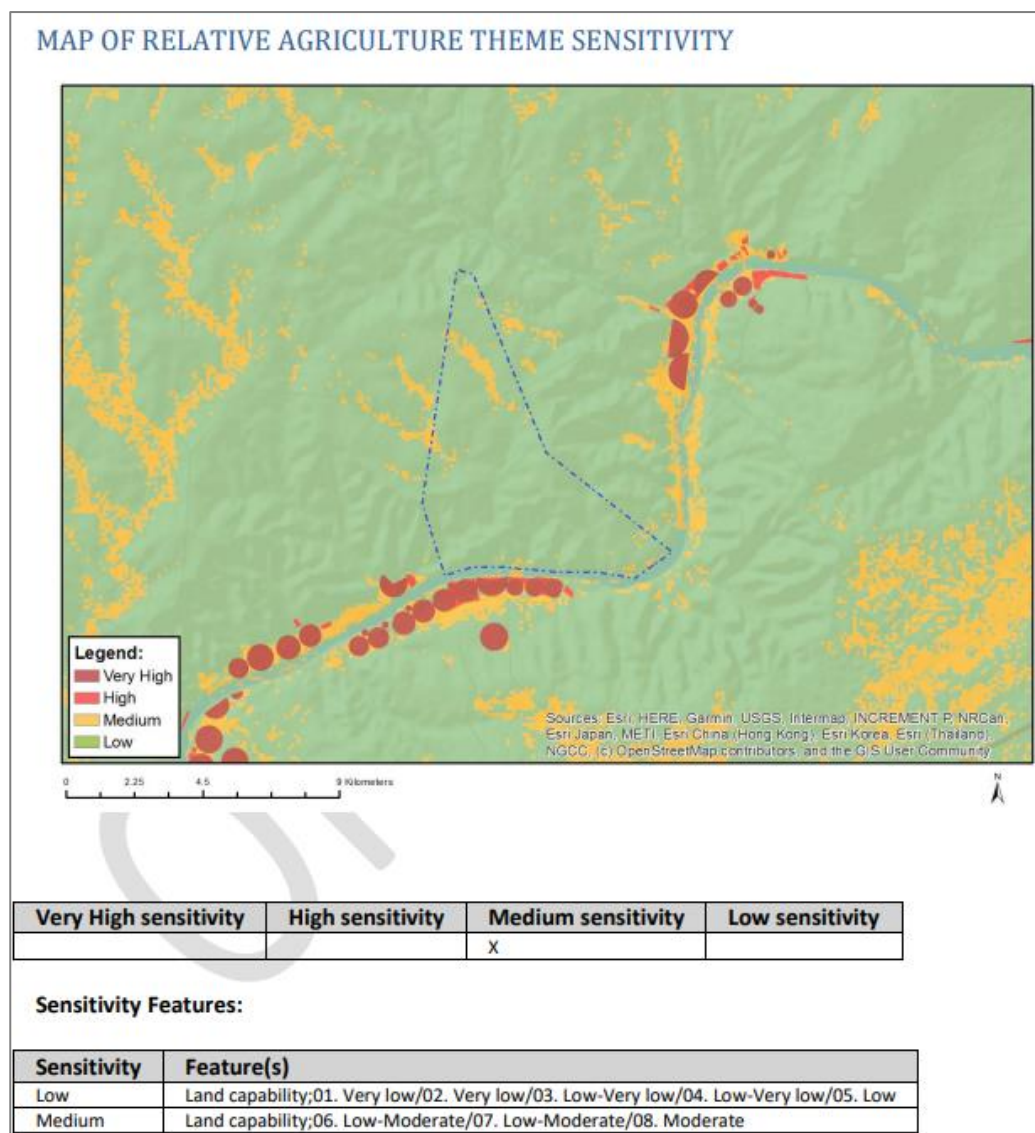


Figure 19. Agricultural Theme Sensitivity for the proposed prospecting area.

(7) Flora and Fauna

FLORA

The study area is situated within the Karoo Biome and specifically the Nama Karoo Bioregion. The vegetation structure should therefore be dominated by a dwarf karroid shrub layer, grasses and *Acacia mellifera* subsp. *detinens* as well as other low tree species.

Vegetation types occurring in the study area consist of Northern Upper Karoo (NKu 3) and Upper Gariep Alluvial Vegetation (Aza 4). According to the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) both of these vegetation types are considered to be of Least Concern (LC) and not currently subjected to any pronounced development pressures.

A general description of the vegetation composition is given as obtained from Mucina & Rutherford (2006).

Northern Upper Karoo (NKu 3)**Important Taxa**

- Small Trees: *Acacia mellifera* subsp. *detinens*, *Boscia albitrunca*.
- Tall Shrubs: *Lycium cinereum*, *L. horridum*, *L. oxycarpum*, *L. schizocalyx*, *Rhigozum trichotomum*.
- Low Shrubs: *Chrysocoma ciliata*, *Gnidia polycephala*, *Pentzia calcarea*, *P. globosa*, *P. incana*, *P. spinescens*, *Rosenia humilis*, *Amphiglossa triflora*, *Aptosimum marlothii*, *A. spinescens*, *Asparagus glaucus*, *Barleria rigida*, *Berkheya annectens*, *Eriocephalus ericoides* subsp. *ericoides*, *E. glandulosus*, *E. spinescens*, *Euryops asparagoides*, *Felicia muricata*, *Helichrysum lucilioides*, *Hermannia spinosa*, *Leucas capensis*, *Limeum aethiopicum*, *Melolobium candicans*, *Microloma armatum*, *Osteospermum leptolobum*, *O. spinescens*, *Pegolettia retrofracta*, *Pentzia lanata*, *Phyllanthus maderaspatensis*, *Plinthus karooicus*, *Pteronia glauca*, *P. sordida*, *Selago geniculata*, *S. saxatilis*, *Tetragonia arbuscula*, *Zygophyllum lichtensteinianum*.
- Succulent Shrubs: *Hertia pallens*, *Salsola calluna*, *S. glabrescens*, *S. rabieana*, *S. tuberculata*, *Zygophyllum flexuosum*. Semiparasitic
- Shrub: *Thesium hystrix*,
- Herbs: *Chamaesyce inaequilatera*, *Convolvulus sagittatus*, *Dicoma capensis*, *Gazania krebsiana*, *Hermannia comosa*, *Indigofera alternans*, *Lessertia pauciflora*, *Radyera urens*, *Sesamum capense*, *Sutera pinnatifida*, *Tribulus terrestris*, *Vahlia capensis*.
- Succulent Herb: *Psilocaulon coriarium*.
- Geophytic Herb: *Moraea pallida*.
- Graminoids: *Aristida adscensionis*, *A. congesta*, *A. diffusa*, *Enneapogon desvauxii*, *Eragrostis lehmanniana*, *E. obtusa*, *E. truncata*, *Sporobolus fimbriatus*, *Stipagrostis obtusa*, *Eragrostis bicolor*, *E. porosa*, *Fingerhuthia africana*, *Heteropogon contortus*, *Stipagrostis ciliata*, *Themeda triandra*, *Tragus berteronianus*, *T. koelerioides*, *T. racemosus*.

Biogeographically Important Taxa includes the Herb (western distribution limit) *Convolvulus boedeckerianus* and the Tall Shrub (southern limit of distribution) *Gymnosporia szyszyłowiczii* subsp. *namibiensis*.

Endemic Taxa includes the succulent shrubs *Lithops hookeri*, *Stomatium pluridens*, the low shrubs *Atriplex spongiosa*, *Galenia exigua* and the herb *Manulea deserticola*

Upper Gariep Alluvial Vegetation (Aza 4)**Important Taxa****Riparian thickets**

- Small Trees: *Acacia karroo*, *Celtis africana*, *Salix mucronata* subsp. *mucronata*.
- Tall Shrubs: *Diospyros lycioides*, *Melianthus comosus*, *Rhus pyroides*.
- Low Shrubs: *Asparagus setaceus*, *A. suaveolens*.
- Woody Climber: *Clematis brachiata*. Succulent Shrubs: *Lycium arenicola*, *L. hirsutum*.
- Herb: *Rubia cordifolia*.

Flooded grasslands & herblands

- Graminoid: *Melica decumbens*.
- Herbs: *Cineraria dregeana*, *C. lobata*.

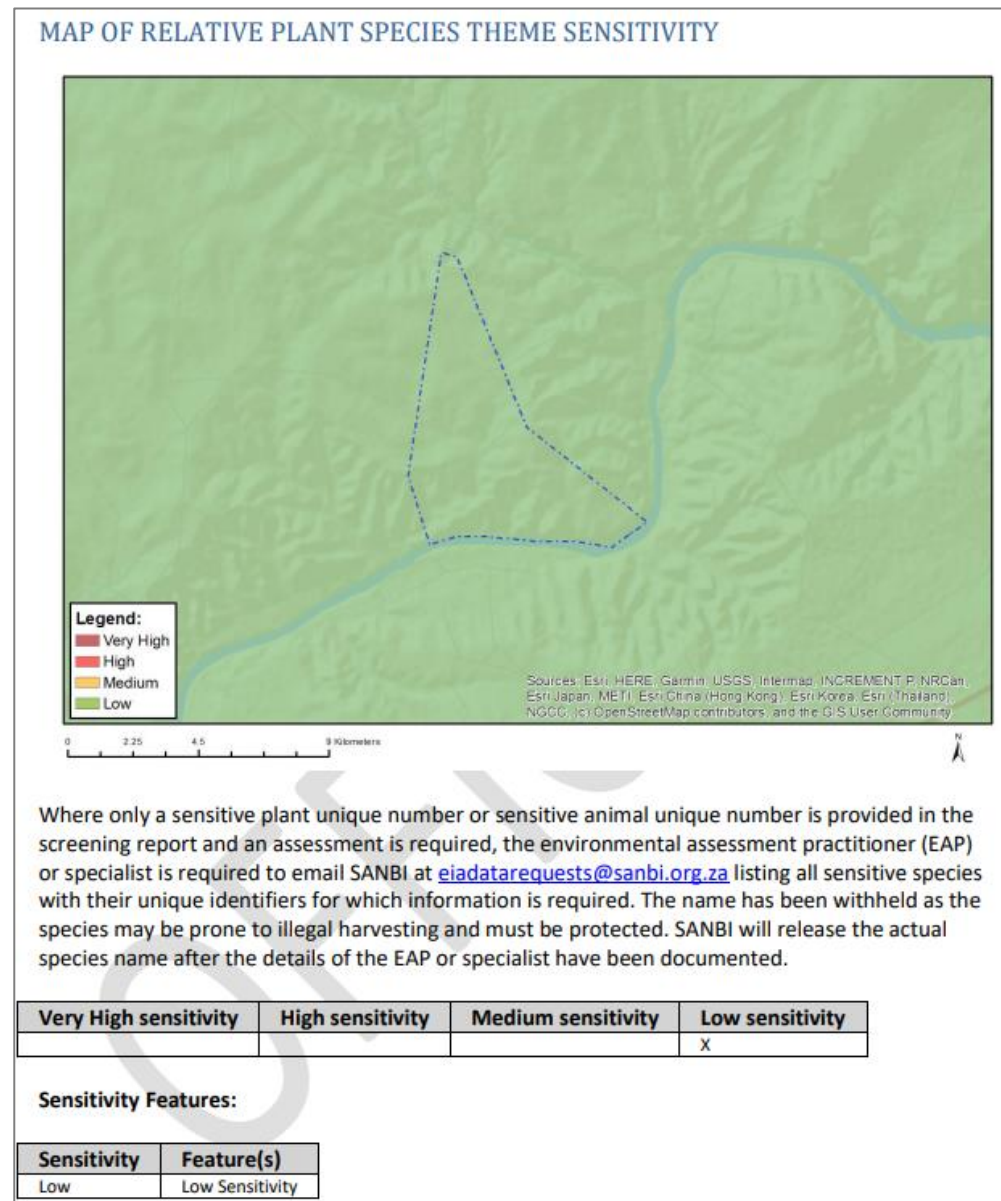


Figure 20. Plant Species Sensitivity for the proposed site.



Figure 21. Regional Vegetation Map, the Prospecting Right application is indicated in red.

NATURAL FAUNA:

Animal life on the project area itself mainly consists small game (e.g. steenbuck, duiker, warthog, porcupine), scavengers (e.g. silverback jackal, bat-ear-fox) and several rodent species (e.g. Springhare, scrub hare, field mouse). Some of the surrounding farms are farmland with cattle, sheep, goat and larger game.

The proposed prospecting of the area is likely to impact on the faunal population in terms of habitat loss. The prospecting should however not result in the transformation of large areas of vegetation and the impact on fauna should likewise not be high. However, sensitive species may be affected by the increased activity and could vacate the area which would impact on population dynamics and essentially also contribute to habitat pressure.

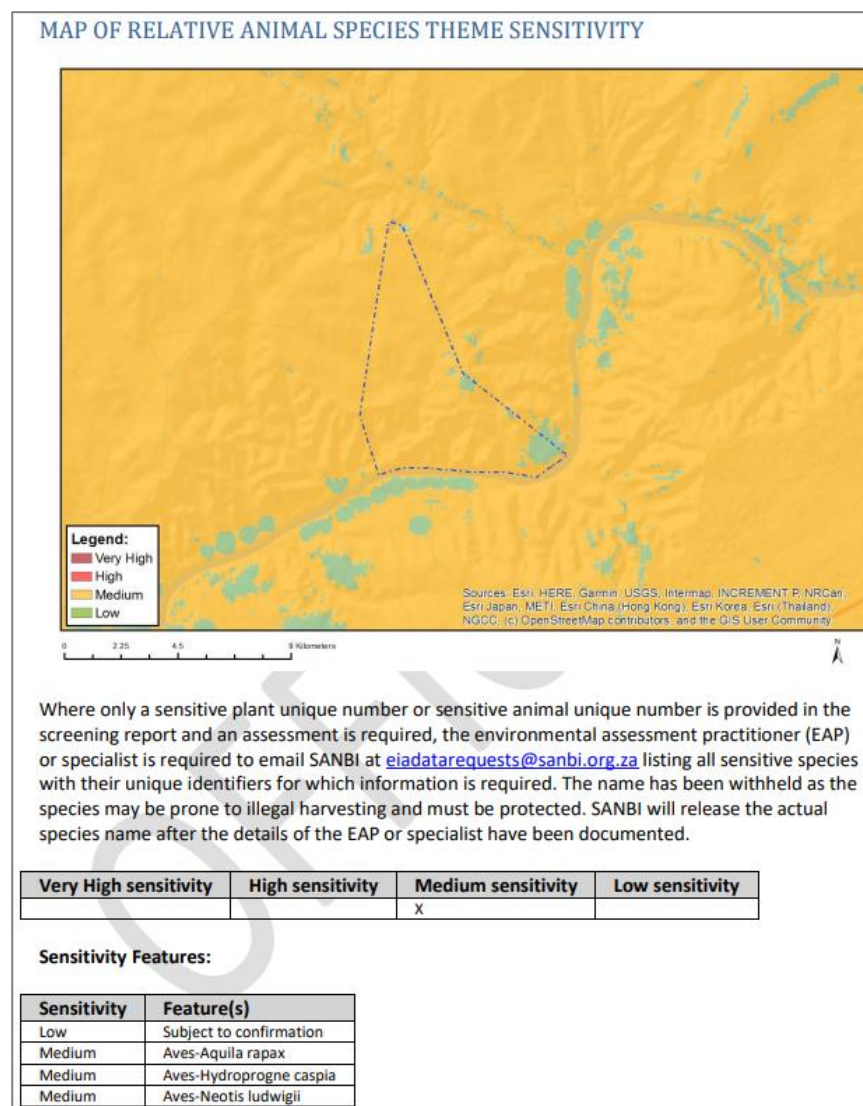


Figure 22. Animal Species Sensitivity for the proposed prospecting site.

(8) Hydrology**Surface Water**

The study area is straddles the Quaternary Drainage Catchments D71B and D71C of the Lower Orange Water Management Area. Drainage is predominately to the south into the Orange River through the natural drainage lines.

The Orange River forms the southern border of the application area and a few islands are present within this part of the Orange River. Various non-perennial drainage lines are also present on the site, all of them draining to the Orange river in the southern part of the application area. These small drainage lines will only carry water during exceptional rainfall events such as cloudburst, experience a flash run-off and be dry again after the run-off except for possible hollows in the drainage lines. Evaporation is high and surface water is hardly encountered in this area.

Lower Orange Water Management Area

(Taken out of the Water Management Areas in South Africa, October 2010 Statistics of South Africa)

The geographic extent of the Lower Orange WMA largely corresponds to that of the Northern Cape. It is situated in the western extremity of South Africa and borders on Botswana, Namibia and the Atlantic Ocean. Climate over the region is harsh semi-desert to desert. Rainfall is minimal, ranging from 400 mm/annum to a low of 20 mm/annum and is characterised by prolonged droughts. With the exception of sparse and highly intermittent runoff from local tributaries and occasional inflows from the Fish River in Namibia, the Lower Orange WMA is totally dependent on flow in the Orange River from upstream WMAs. Because of the low rainfall, groundwater resources are limited, although this source is well used for rural water supplies.

Important conservation areas in the Lower Orange WMA include the Kgalagadi Transfrontier National Park, the Augrabies National Park, the Richtersveld National Park and a transboundary Ramsar wetland site at the Orange River mouth.

The largest contributions to the region's economy are made by mining and irrigated agriculture. Mining activities consist mainly of the extraction of alluvial diamonds and a variety of other mineral resources from locations both inland and along the coast. Extensive irrigation occurs along the Orange River, where the tendency is increasingly towards the growing of high-value orchard crops. Namibia also abstracts water from the river for domestic, mining and irrigation purposes. Sheep and other livestock farming is practised where the climate is favourable. Water resources in the Lower Orange WMA are fully developed. Owing to the fact that water has to travel a distance of 1 400 km from the point of release at Vanderkloof Dam to the most downstream point of use, large operational and transmission losses are incurred in the process of

ensuring that the requirements of users are met. Opportunity exists for this situation to be improved by constructing a new dam in the Lower Orange River for the purpose of providing de-regulation storage. Such a dam could serve a secondary function of regulating spills from dams in upstream WMAs. A unique development in the southern tributary catchments is the use of soil embankments that retain runoff from the land, as a means of rainfall harvesting.

Groundwater

Groundwater flow is in the direction of the Orange River following the surface drainage direction from the hills in the north towards the lowlands and floodplains in the south.

Mean Depth of Water-Table

The mean depth of the water table during summer is approximately 120 m and during winters 140 m.

The quality of ground water is generally good although it does tend be brackish (mineralised) water in the drier areas.

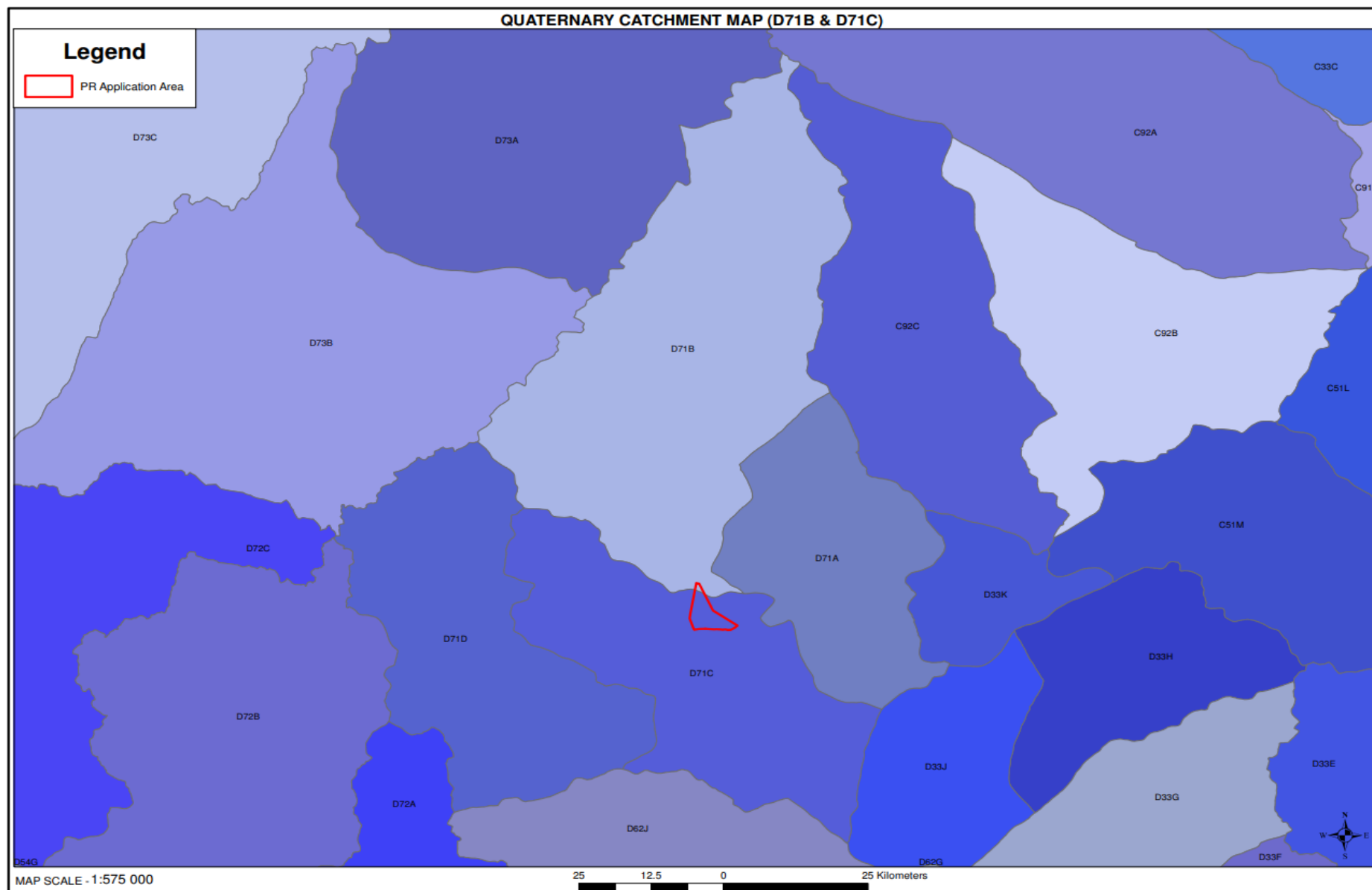


Figure 23. Quaternary Catchment Map

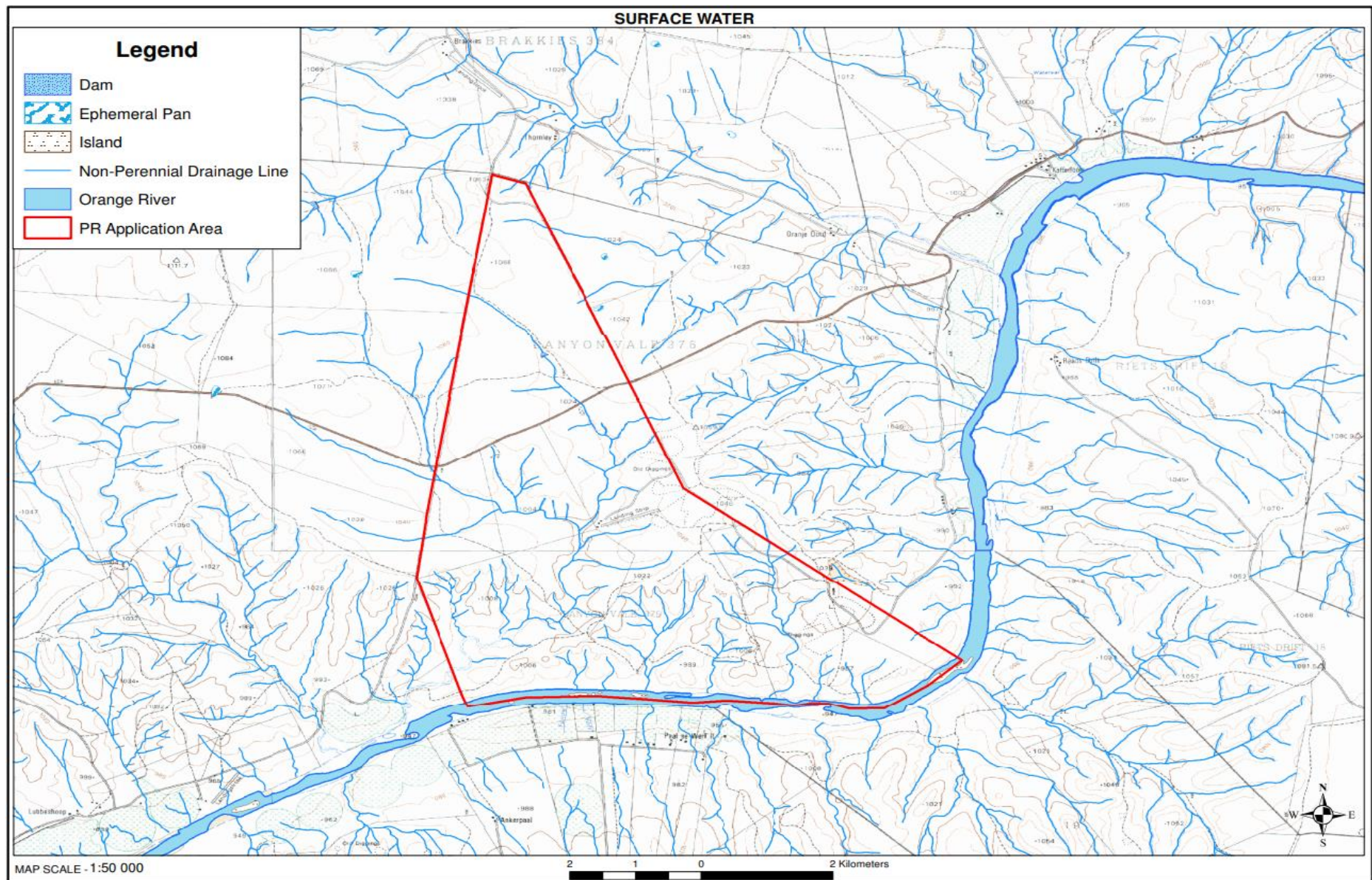


Figure 24. Surface Water Map

(9) Sites of Archeological and Cultural Interest

In terms of section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), a Phase 1 Archaeological Impact Assessment must be undertaken.

The study must be undertaken in order to establish if any localities of heritage significance are present on the property.

In terms of Palaeontology the farms is indicated as High sensitivity and a Palaeontological study will also be done.

(10) Air Quality

With reference to the Scheduled Processes under the Second Schedule to the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965), no scheduled process relates to any proposed prospecting activity.

Existing Sources

The current source of air pollution in the area stems from numerous mining operations along the Orange River and from vehicles traveling on the gravel roads of the area. Farming activity, especially ploughing of the irrigation fields, may generate dust during certain periods of the year.

New Source

The source of air pollution on the farm will be nuisance dust generated by the bulk sampling prospecting process, the loading of gravels onto the transport trucks, the dumping of gravels over each site's primary screen or feeder bins as well as from the movement of trucks and vehicles on the prospecting roads. Gas emissions from machinery will be kept within legal limits.

Areas of Impact

The prevailing wind (occasionally slightly) is from the east (June & October) and the south-west (October - January) but the strongest winds are from the north-west. The average monthly wind speeds are generally below 6.3 m/s.

There is a potential for fall-out dust to impact on the surrounding farm properties – which can be described as the nearest potential area of impact. The dust management programme recommended should include daily dosing of access roads and stockpile areas.

If dust is generated, it is expected to be visible from the surrounding farmland or mines along the Orange River.

(11) Noise

Noise on site will come from the large vehicles (tip trucks, front-end loaders, back actors), from the working pans.

(12) Visual Aspects:

The prospecting site on Beatrys (Lanyon Vale) will not be visible from any National Roads, but could be visible from the gravel road that runs next to the farm and through the farm.

The negative visual impacts associated with the bulk sample sites and the washing pans will however have a negative impact since it will be visible to the landowners. There is however no method of reducing the impact during prospecting operations (operational phase), it can only be mitigation done by doing concurrent rehabilitation of open trenches and bulk sampling pits as prospecting progress.

(13) BROAD-SCALE ECOLOGICAL PROCESSES:

Transformation of intact habitat on a cumulative basis could contribute to the fragmentation of the landscape and could potentially disrupt the connectivity of the landscape for fauna and flora and impair their ability to respond to environmental fluctuations. The sites had been indicated on the screening tool as having high sensitivity in terms of broad scale ecology. A specialist ecological study will be conducted and included into the EIA EMP document.

(14) SOCIO-ECONOMIC STRUCTURE OF THE REGION:

The Northern Cape is geographically the largest province in South Africa having a land mass of 373,239 km² and covers approximately one third of the country's surface area. It is bordered by the Atlantic Ocean on the west, Namibia on the northwest and Botswana on the north, the Western Cape on the southwest and the Free State on the east.

The Northern Cape is the largest and most sparsely populated province of South Africa. It was created in 1994 when the Cape Province was split up. The Orange River flows through the province, forming the borders with the Free State in the southeast and with Namibia to the northwest. The Orange and Vaal Rivers meet just beyond Douglas at the confluence and are used to irrigate the many agricultural farming activities in and around Douglas.



Figure 25. Locality Map of Northern Cape. Source: Google Maps (2020)

The demarcation process of 2000 resulted in five district municipalities (ZF Mgcawu DM, John Taolo Gaetsewe DM, Namaqua DM, Francis Baard DM and Pixley ka Seme DM) together comprising twenty-seven Category B municipalities.

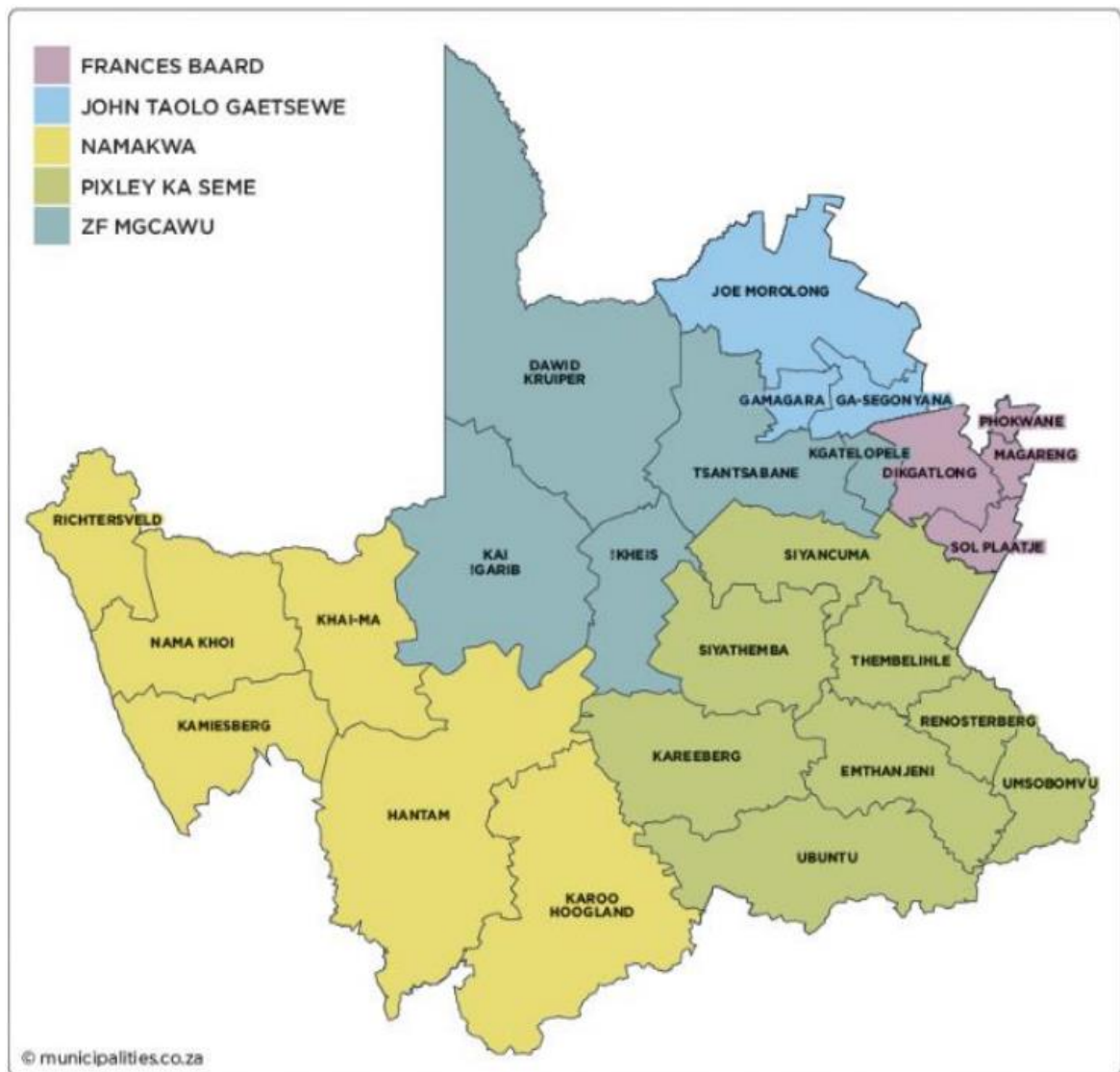


Figure 26. Map of District Municipalities in the Northern Cape. Source: Google Maps (2020)

The Siyancuma Local Municipality is situated within the Pixley Ka Seme DM of the Northern Cape Province. It is bordered by the ZF Mgcawu DM in the north and west, Frances Baard DM in the north, Siyathemba LM and Thembelihle LM in the south, and the Free State Province in the east.

The local area (Siyancuma) has a small to medium population density and labour is sourced from the surrounding towns of Prieska and Douglas. Fuel and basic supplies can be obtained at Douglas or Prieska and the property has land and mobile telephone connectivity.

The following information is found in the Integrated Development Plan (IDP) 2020 – 2021 of the Siyancuma Municipality.

The Siyancuma Local Municipality hosts the confluence of the Vaal and the Orange River. It comprises in the main of the three towns, that is, Campbell,

Douglas and Griekwastad and has densely populated rural settlements called Smitchdrift and Bucklands. The municipal area is richly endowed with precious and semi-precious stones, that is, diamonds and tiger's eye. Beneficiation of tiger's eye is on the high impact project identified in the District Growth and Development Strategy. The Municipality has a great tourism potential.

The Siyancuma Local Municipality is characterised by incorporating the confluence of South Africa's largest rivers, the Orange and Vaal Rivers, with rich mineral deposits (diamonds, tiger's eye, zinc, lead and copper). The municipality has relatively high levels of basic services, partially integrated society, medical facilities in Douglas and Griekwastad, one of the biggest correctional services in the province and is the neighbour to Kimberley, the provincial and legislative capital of the province. It still has major inequalities to overcome and in common with the rest of the country, a skew and sluggish economy to transform and speed up. The themes of this IDP are increasing economic growth, improving community self-reliance, achieving service excellence and sustainability led by strengthened leadership and good governance and a common approach between stakeholders.

Population

Pixley ka Seme District Municipality has the third largest population in the Northern Cape and shows a slight increase of 9244 from 2011 to 2016. It represents 28,41 % of the Northern Cape population. The table and graph below depict the population figures of the five District Municipalities as in 2011 and 2016:

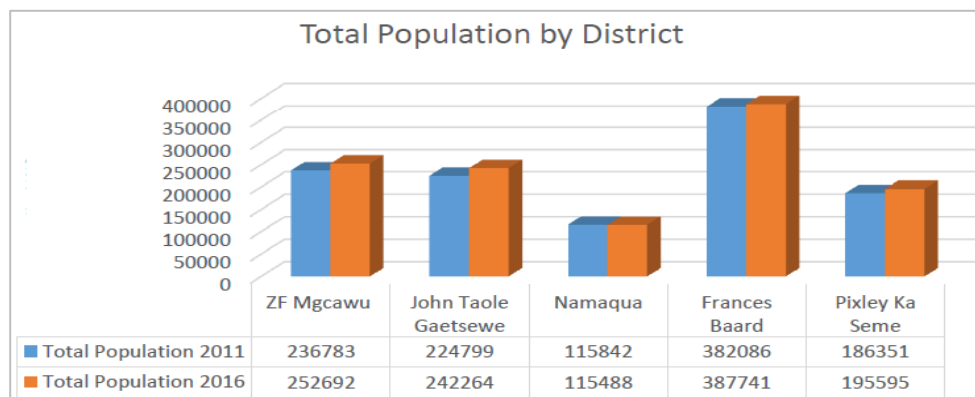


Figure 27. Total Population by District (Source: StatsSA (2011) & StatsSA Community Survey (2016))

From 2001 to 2011, the total population for Siyancuma Local Municipality showed a negative growth rate of -5.6% with the population decreasing from 39 275 to 37 076 (StatsSA 2011). A further negative growth rate of -3.1% was experienced from 2011 to 2016 when the population decreased from 37 076 to 35 938 (Community Survey 2016).

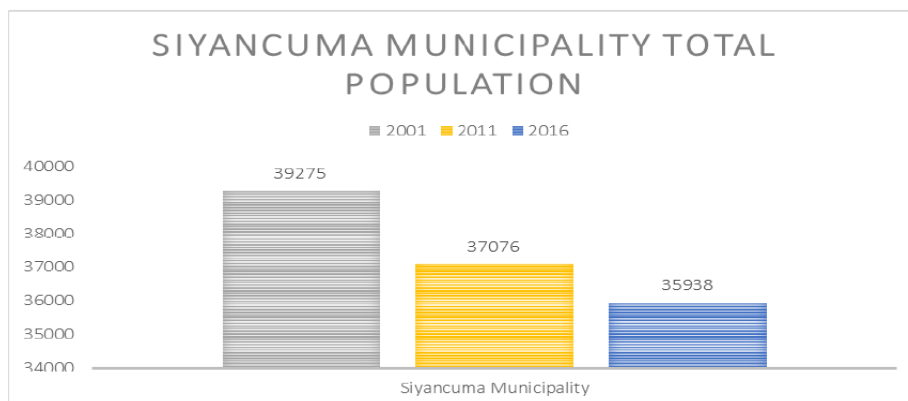


Figure 28. Siyancuma Municipality total population (Source: (2001), StatsSA (2011) & StatsSA Community Survey (2016)).

The Siyancuma Municipality's total population of 35 938 (2016) can be broken down as follows:

- Coloured – 67,80 %
- African – 25,30 %
- White – 6,69 %
- Asian – 0,21 %

The overall sex ratio (male : female) is more or less 50:50, although it is 48:52 for Coloureds meaning that there are slightly more Coloured females than males.

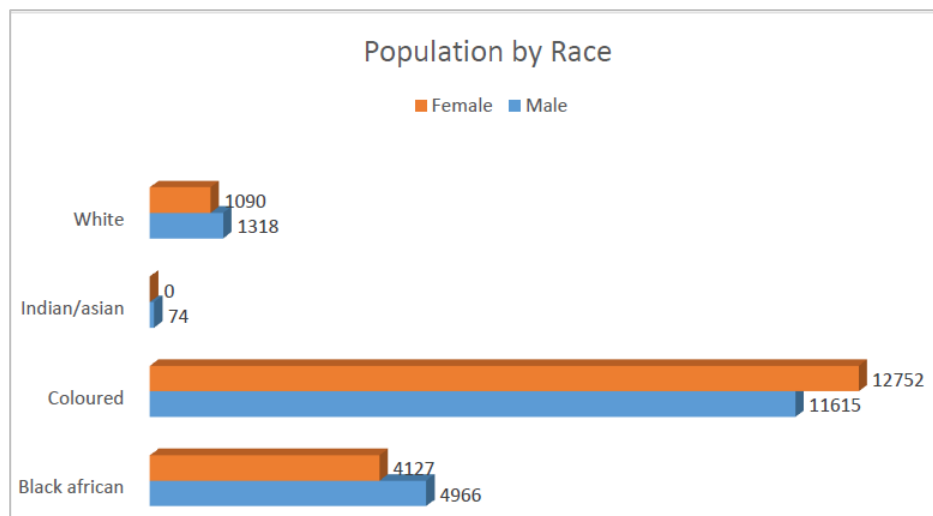


Figure 29. Population by race and gender (Source: StatsSA Community Survey (2016)).

**Age &
Gender
Composition**

Demographic information from the 2016 Community Survey structured the Siyancuma total population as follow:

- Population under 15: 26,2 %
- Population 15 to 64: 67,8 %
- Population over 64: 6,0 %

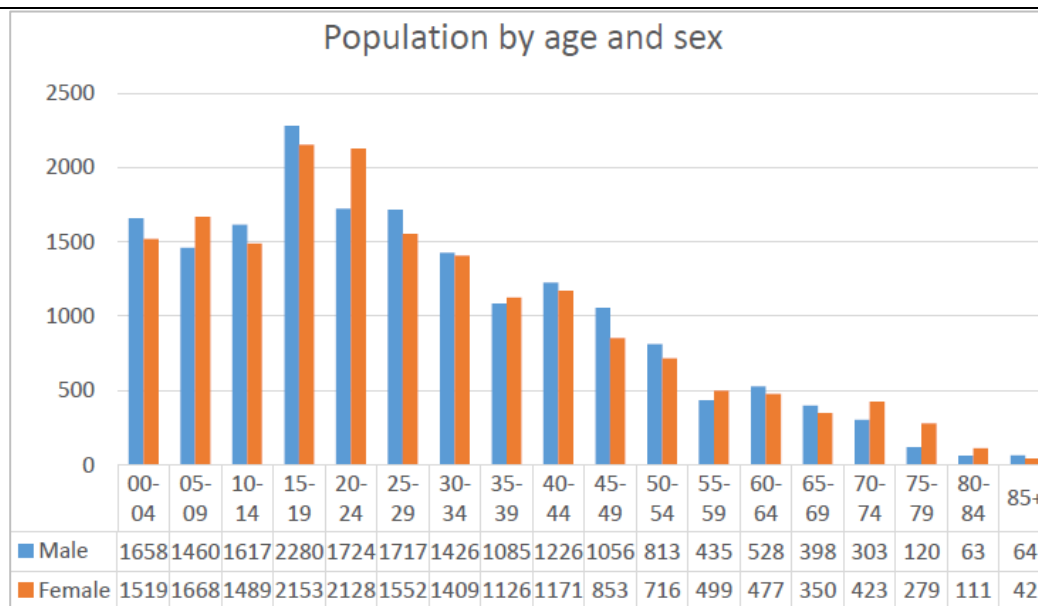


Figure 30. Population by age and gender.

It is further evident from the information in the graph that:

- age group 15 – 19 is the highest. This group represents education grades 9 – 12, and forms 12,4 % of the total population.
- age group 20 – 34 represents the youth component and forms 27,7 % of the total population. This group characterises the economically active group and will have an impact on the employment and income levels within the municipality.
- from age 70, the mortality rate is higher for males than for females.

Health overview

The sectoral approach that was adopted to analyse the present health facilities of the Pixley Ka Seme district revealed that the National Government has adopted a primary health care strategy that includes making such services available within walking distance of communities. The strategy also includes improvement in sanitation and drinking water supply, etc. Thus the health care systems that presently exist in the District consist of:

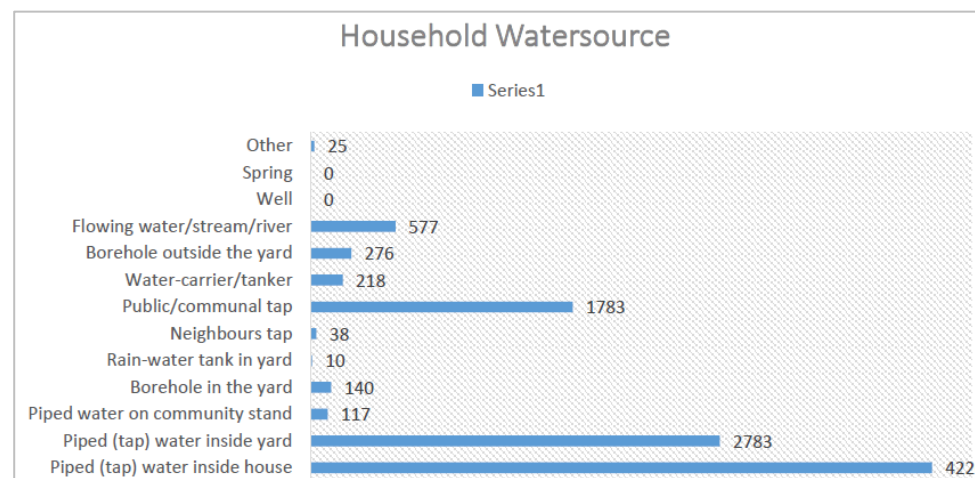
- District Hospitals
- Community Healthcare Centres

Table 5. Municipal Health Centres (Source: Siyancuma Municipality (2020))

TOWNS	HOSPITALS/ CHC's	CLINICS
Schmidsdrift	-	1
Campbell	-	1
Griekwastad	1	1
Douglas	1	2
TOTAL	2	5

Water

Most households in the Siyancuma Local Municipality area have access to water inside the house followed by taps inside the yard. However, many households are still dependant on communal taps.

**Figure 31.** Household Water sources (Source: StatsSA Community Survey (2016)).**Sanitation**

Sewerage and sanitation are basic needs of communities which can pose serious health and hygiene risks for communities and the environment at large if not properly managed and monitored. According to the White Paper on Basic Household Sanitation, 2001, basic sanitation is defined as: “The minimum acceptable basic level of sanitation is:

(a) Appropriate health and hygiene awareness and behaviour;

(b) A system for disposing of human excreta, household waste water and refuse, which is acceptable and affordable to the users, safe, hygienic and easily accessible and which does not have an unacceptable impact on the environment and

(c) A toilet facility for each household”

From the graph above the majority of toilets (6083) are flush toilets, followed by bucket toilets (1706) which are still being collected by the municipality.

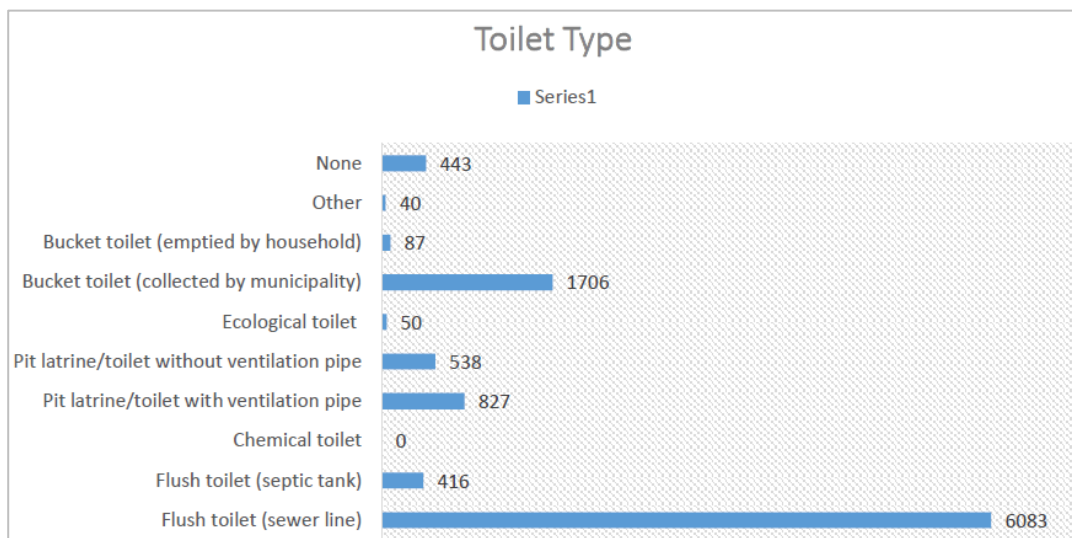


Figure 32. Toilet Type (Source: StatsSA Community Survey (2016)).

Refuse Removal

The graph below illustrates that refuse is being removed at least once a week, to the tune of 7323 households. However, a substantial number of people are still dumping domestic and garden waste on illegal dumping sites. This poses a serious environmental and health risk/hazard. Communal dumping sites are not registered and licensed at the moment and efforts are underway to get them licensed.

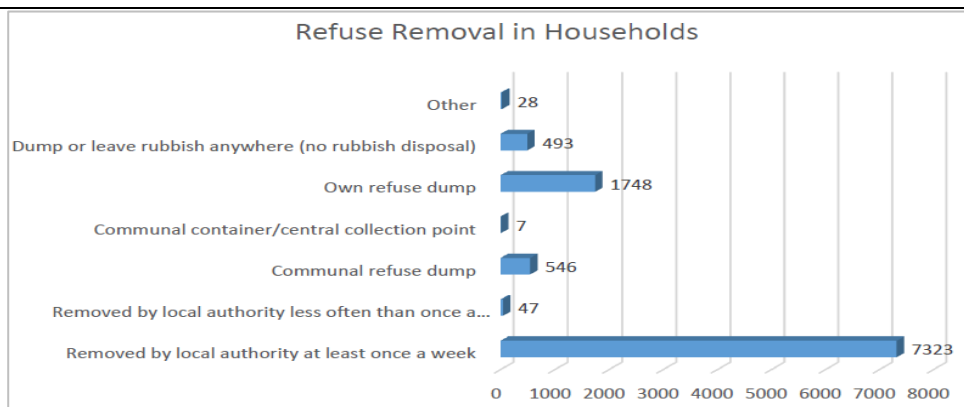


Figure 33. Refuse removal (Source: StatsSA Community Survey (2016))

Electricity

Siyancuma Local Municipality is currently facing a big challenge in terms of electricity bulk supply due to the expansion of informal areas. Another challenge is the fact that electrical infrastructure, e.g., transformers, are dilapidated and need to be repaired or replaced at very high costs.

According to the Community Survey of 2016, most households (7381) are using in-house prepaid meters, followed by in-house conventional meters (1334). A new trend is taking root where people are installing solar home systems, and 357 such systems were already installed in 2016.

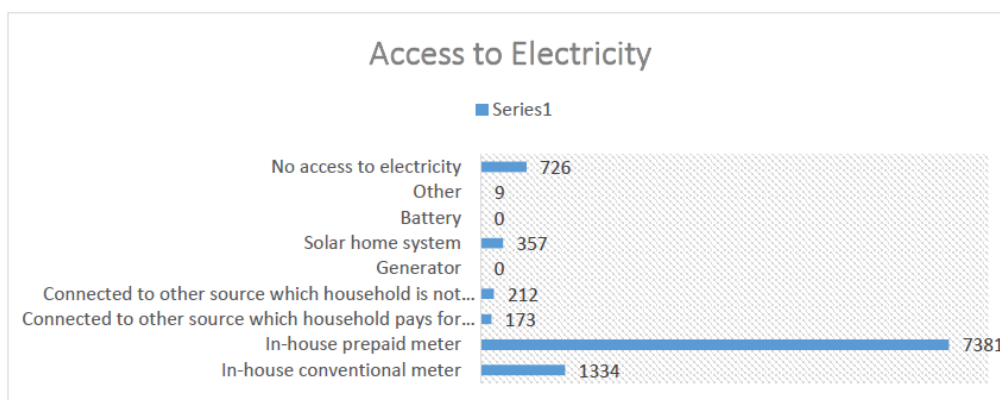


Figure 34. Access to Electricity (Source: StatsSA Community Survey (2016))

Housing

1. Household Dynamics

The table below indicates that the number of households in the Siyancuma Municipality have increased by 613 number of households from 2011 to 2016. It can also be seen that the number of formal dwellings have increased along with the number of houses being owned by their residents.

Table 6: Household Dynamics (Source: StatsSA Community Survey (2016) and StatsSA (2011))

	2016	2011
Number of Households	10 191	9578
Average household size	3,5	3,8
Female headed households	36,4 %	35,7 %
Formal dwellings	82,0 %	73,0 %
Housing owned	50,3 %	39,6 %

2. Household Services

From the table below it can be seen that the services provided to households within the Siyancuma Municipality have improved. More households indicated that they have flush toilets, refuse removal, piped water (inside dwellings) and electricity in 2016 than in 2011.

Table 7: Household services (Source: StatsSA Community Survey (2016) and StatsSA (2011))

	2016	2011
Flush toilet connected to sewerage	59,7 %	53,4 %
Weekly refuse removal	71,9 %	62,3 %
Piped water inside dwelling	41,5 %	41,4 %
Electricity for lighting	89,1 %	82,2 %

3. Housing Backlogs

From the figure below it can be seen that the total housing backlogs amount up to 3345 houses with the greatest backlog being in the town Breipaal (1051 houses) followed by Bongani (836 houses) and Schmidtsdrift (700 houses).

HOUSING BACKLOG IN TOWNS

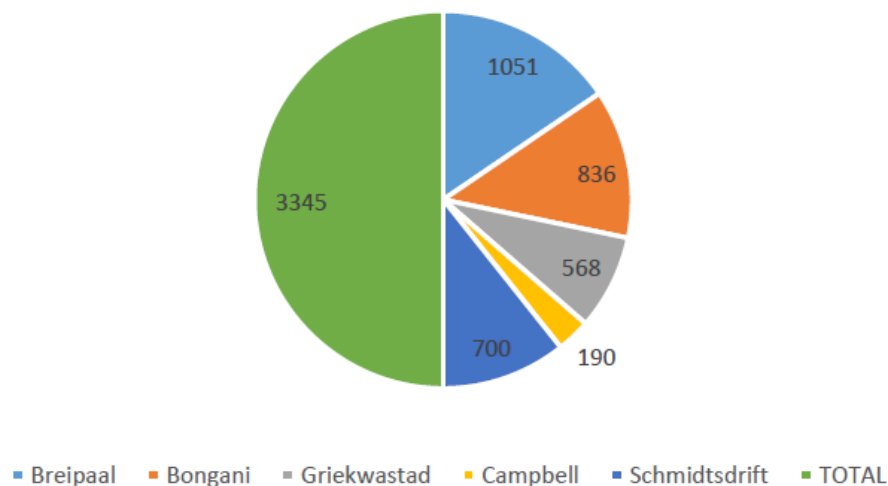


Figure 35. Housing Backlog in towns (Source: Siyancuma Local Municipality (2020)).

Education

1. Level of Education:

The statistics below represent the level of education of the population above the age of 20. It is of significance, because it shows an increase in matric and higher education qualifications of 3,6% and 3,5% respectively from 2011 to 2016, while the figure for people with no schooling decreases with 7,0%. This represents a positive improvement in terms of increasing the levels of literacy within the municipality.

Table 8. Level of education (age +20) (Source: StatSA Community Survey (2016) and StatsSA (2011))

	2016	2011
No schooling	9,7 %	16,7 %
Matric	20,4 %	16,8 %
Higher education	8,9 %	5,4 %

2. Education by sex

The graph below illustrates that more females (7369) than males (6979) completed grades 9 to 12, while slightly more males (1134) than females (1123) have a post matric qualification. People with no schooling stood at 2483 females and 2642 males in 2016, which is 14,2 % of the total population.

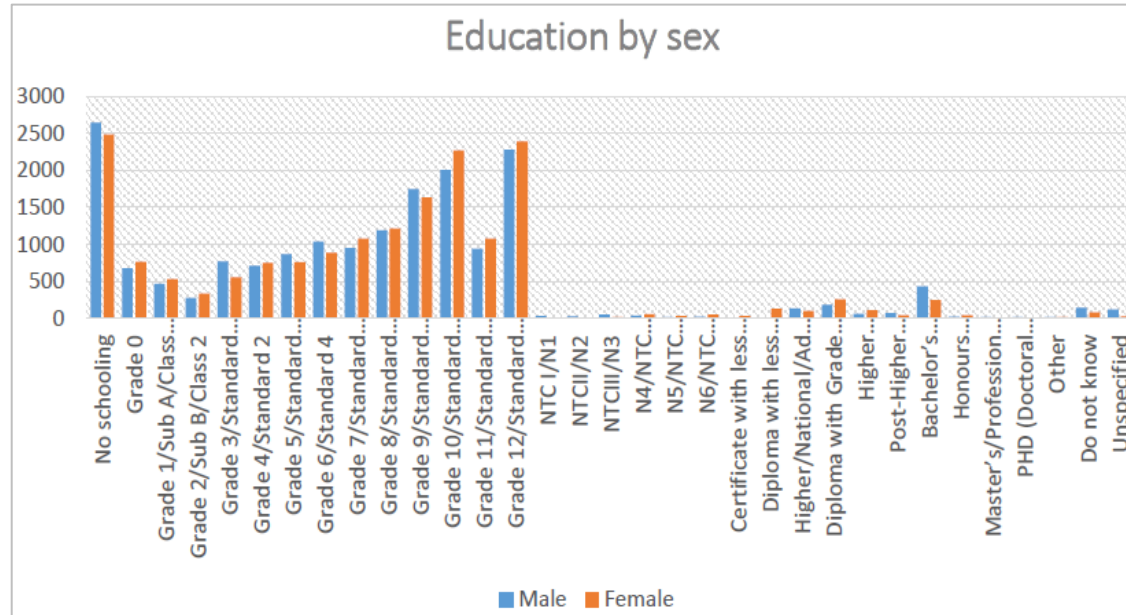


Figure 36. Education by gender.

(15) SENSITIVE LANDSCAPES:

“Sensitive Environments” that have statutory protection are the following:-

1. Limited development areas (Section 23 of the Environmental Conservation Act, 1989 (Act 73 of 1989).
2. Protected natural environments and national heritage sites.
3. National, provincial, municipal and private nature reserves.
4. Conservation areas and sites of conservation significance.
5. National monuments and gardens of remembrance.
- 6. Archaeological and palaeontological sites.**
7. Graves and burial sites.
8. Lake areas, offshore islands and the admiralty reserve.
9. Estuaries, lagoons, wetlands and lakes.
- 10. Streams and river channels and their banks.**
11. Dunes and beaches.
12. Caves and sites of geological significance.
13. Battle and burial sites.
14. Habitat and/or breeding sites of Red Data Book species.
15. Areas or sites of outstanding natural beauty.
16. Areas or sites of special scientific interest.
17. Areas or sites of special social, cultural or historical interest.
18. Declared national heritage sites.
19. Mountain catchment areas.
20. Areas with eco-tourism potential.

The relevant specialists will be appointed to assess whether there are any sensitive landscapes within the application area.

(b) Description of the Current Land Use(1) Land Use before Prospecting:

The current land uses of the project area and surroundings can be best described as livestock and/or game farming and mining in the district.

(2) Evidence of Disturbance:-

The current land use is most likely associated with farming activities. Associated with this can be discerned a sparse network of gravel roads and dirt tracks, a farmstead associated with a few buildings.

Evidence of previous mining activities on the proposed property can also be seen on satellite images.

(1) Existing Structures:-

Specific environmental features and / or infrastructure occur on site or within close proximity include:

- Agricultural lands
- Farm buildings
- Landing strip
- Orange river
- Water boreholes

All 100m safety borders from formal infrastructure will be kept.

(c) Description of Specific Environmental Features and Infrastructure on Site

The infrastructure on site comprehensively discussed in section d(ii) as part of the prospecting methodology discussion, as well as in section g as part of the prospecting footprint description. Furthermore, a comprehensive description of the environment was presented in section (i) as part of the baseline report.

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

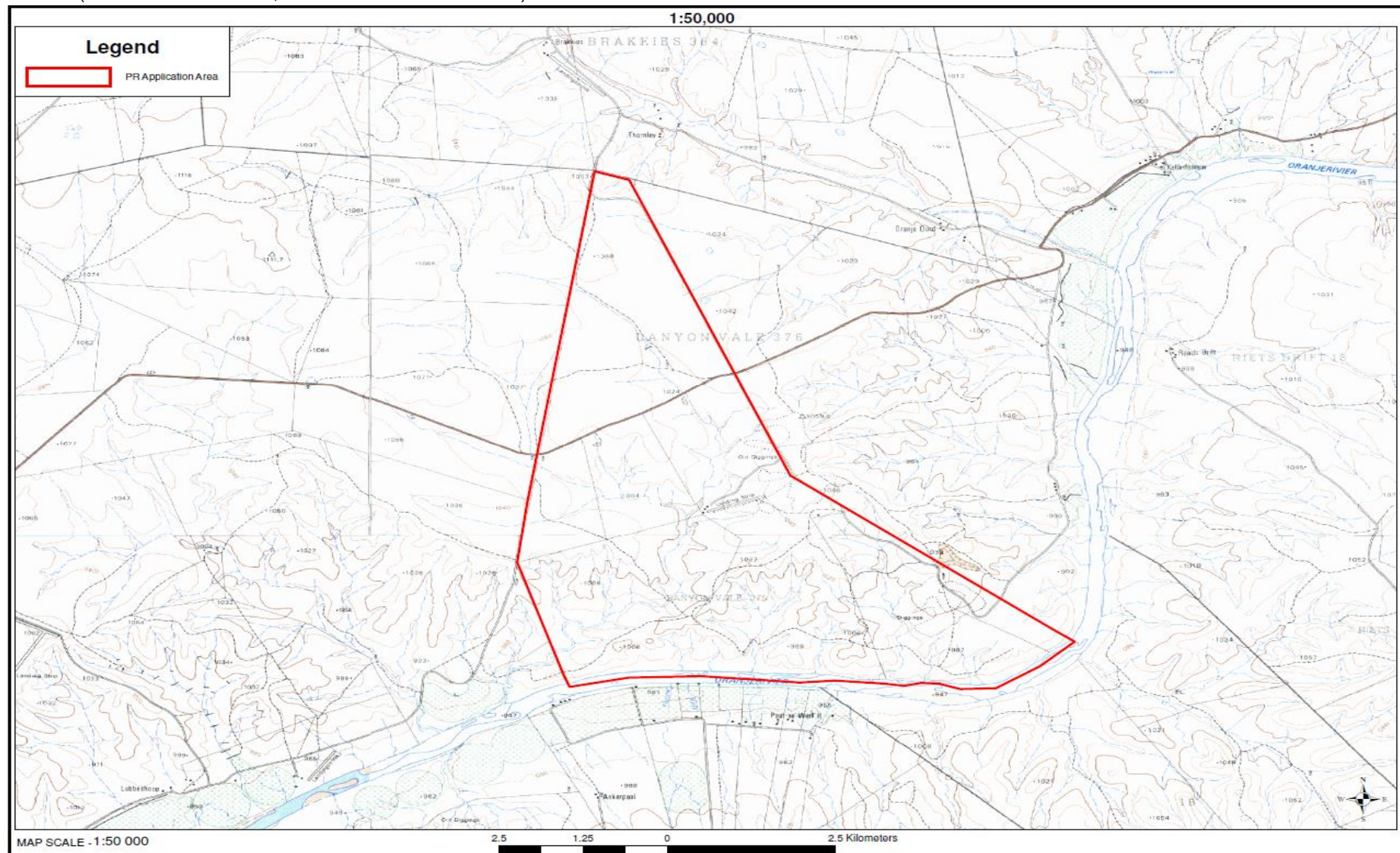


Figure 37. Environmental and current land use map

v) Impacts identified

(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.)

Nature of Impact	Significance	Probability	Duration
Sterilisation of mineral resources.	Low	Highly unlikely	Decommissioning
Changes to surface topography due to topsoil removal, bulk sampling prospecting methods, placement of infrastructure and development of residue deposits.	Low to Medium	Certain	Long Term Life of operation
Soil erosion by water and wind on disturbed and exposed soils; potential for dust production and soil microbial degradation; potential contamination of soils due to spillages.	Low to Medium	Possible	Long Term Life of operation
Loss of land capability through topsoil removal, disturbances and loss of soil fertility.	Low	Possible	Short term
Loss of land use due to poor placement of surface infrastructure and ineffective rehabilitation.	Low	Possible	Short term
Pollution of underground water sources.	Low	Possible	Long Term Residual
Deterioration of water resources through bulk sampling prospecting methods.	Medium to High	Possible	Long Term Residual
Deterioration in water quality through spillages and runoff from sites.	Medium to High	Possible	Long Term Life of operation
The clearance of vegetation; potential loss of floral species with conservation value; potential loss of ecosystem function.	Low to Medium	Certain	Long Term Life of operation
Proliferation of alien invasive plants species.	Low to Medium	Possible	Long Term Residual
Displacement of faunal species.	Low	Possible	Long Term Life of operation
The loss, damage and fragmentation of floral and faunal habitats; potential loss of ecosystem function.	Low to Medium	Certain	Long Term Residual
Sources of atmospheric emission associated with the prospecting operation are likely to include fugitive dust from materials handling operations, wind erosion of	Low	Certain	Life of Operation Decommissioning

stockpiles and vehicle entrainment of road dust.			
Increase in continuous noise levels; the disruption of current ambient noise levels; and the disruption of sensitive receptors by means of increased noise and vibration.	Low to medium	Certain	Long Term Life of Operation
Visual impact of the prospecting infrastructure, slimes dams and visibility of dust.	Medium to Low	Certain	Life of Operation Decommissioning
Potential negative impacts on traffic safety and deterioration of the existing road networks.	Low	Possible	Life of Operation Decommissioning
The deterioration of sites of cultural and heritage importance.	Low	Possible	Life of Operation
Loss of agricultural/grazing potential; influx of workers to the area increases health risks and loitering (resulting in lack of security and safety); negative impact of employment loss during site closure.	Low to Medium	Certain	Short-term and Closure
Loss of trust and a good standing relationship with the IAPs.	Low to medium	Possible	Life of Operation Decommissioning
Positive socio-economic impacts during operation, upliftment of previously disadvantaged communities.	Medium to high	Certain	Life of Operation Decommissioning to residual

vi) Methodology used in determining and ranking the nature, significance, consequences, 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 was determined in order to decide the extent to which the initial site layout needs revision)

The limits were defined in relation to the Prospecting Characteristics. Those for probability, significance and duration are subjective, based on rule of thumb and experience. The significance of the impacts is defined as follows:

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.
- **Regional**
The impact could affect the area including the neighboring farms, transport routes and the adjoining towns.

Duration

The lifetime of the impact which is measured in the context of the lifetime of the proposed phase (i.e. construction or operation).

- **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 (Residual)**
The impact will continue or last for the entire operational life of the prospecting 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.

This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

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 construction and the prospecting operation, there is a possibility of sterilisation of the mineral reserves and resources due to improper placement of infrastructure. The infrastructure and slimes dam will alter the topography by adding features to the landscape. Topsoil removal and prospecting 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 where present will be stripped in preparation for placement of infrastructure and loading, 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 declared areas will be rehabilitated, but full restoration of soil 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.

During the construction and prospecting operation, there is a possibility that equipment might leak oil, thus causing surface spillages. The hydrocarbon soil contamination will render the soil unusable unless they are decontaminated. The storage of fuels on site

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

The 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. The site has a land capability for limited grazing, but grazing activities can still be performed in areas not earmarked for prospecting, and with proper rehabilitation the land capabilities and land use potential can be restored.

If oil and fuel spillages occur, then it will seep into the underlying aquifers and contaminate ground water. Improper handling of hazardous material will cause contamination of nearby surface water resources 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.

Construction and prospecting activities on site will reduce the natural habitat for ecological systems to continue their operation. It is not expected that the areas of high ecological function will rehabilitate following disturbance events. Vehicle traffic generates lots of dust which can reduce the growth success and seed dispersal of many small plant species. It is expected that protected species if present will be destroyed during the prospecting operation, the necessary permits will be obtained after the specialist studies have been completed to confirm the presence of the protected species.

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

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

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

During the prospecting 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 prospecting operation will add a certain amount of noise to the existing noise in the area. However, levels of noise generated by prospecting activities are low.

The impact of site generated trips on the traffic of the existing roads is experienced to be low. Nevertheless, if road safety is not administered it can have a high impact on the safety of fellow road users.

The prospecting operation, especially during construction, will create a number of new employment opportunities. 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 will possibly impact on safety and security of local residents. During the decommissioning and at closure of the prospecting operation, staff will most likely be retrenched. This can potentially flood the job market, resulting in people being unable to find new employment for a long period of time. It is normally more difficult for people with highly specialised skills to find employment immediately. Those with fewer skills have more flexibility in the job market.

Economic slump of the local towns after prospecting operation closure is an associated potential impact, although small due to the small scale of the operation. 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 mine-related businesses. People who have derived income directly or indirectly from the project may be inclined to leave the region in search of employment or business opportunities. This could result in further decline of the economy of the region as well as the abandonment of infrastructure. The loss of the prospecting workforce income will also impact upon non-mine related industries within the local and regional areas, particularly the rental property market and retail and service industries who would have received income during the life of prospecting operation from the salaried workforce.

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

It is difficult to predict the actual impact of the prospecting operation closure in advance, but it is acceptable to assume that the prospecting closure will have a negative impact on the local and regional economy with a high probability of occurrence, a Low severity and a Low significance.

Positive impacts include employment and training opportunities for people in the local community and local contractors; social upliftment and community development programmes; economic benefits.

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)

Geology and Mineral Resource

Level of risk: Low

Mitigation measures

- ❖ Ensure that optimal use is made of the available mineral resource through proper planning.
- ❖ The prospecting area should be delineated first and all infrastructure positions should be selected with the main aim of avoiding sterilization of future resources.
- ❖ No dumping of materials prior to approval by the mine manager.

Topography

Level of risk: Low to Medium

Mitigation measures

- ❖ Prospecting with bulk sampling and rehabilitate material back up to natural ground level.
- ❖ Do controlled dumping.
- ❖ Employ effective rehabilitation strategies to restore surface topography of the area and plant site.
- ❖ Stabilise the excavations and mine residue deposits.
- ❖ All temporary infrastructures will be demolished during closure.

Soil Erosion

Level of risk: Low to Medium

Mitigation measures

- ❖ At no point may plant cover be removed within the no-development zones.
- ❖ All attempts must be made to avoid exposure of dispersive soils.
- ❖ Re-establishment of plant cover on disturbed areas must take place as soon as possible, once activities in the area have ceased.
- ❖ Ground exposure should be minimised in terms of the surface area and duration, wherever possible.

- ❖ The prospecting operation must co-ordinate different activities in order to optimise the utilisation of the invasive prospecting operations and thereby prevent repeated and unnecessary dumping.
- ❖ The run-off from the exposed ground should be controlled with the careful placement of flow retarding barriers.
- ❖ The soil that is excavated during construction should be stock-piled in layers and protected by berms to prevent erosion.
- ❖ All stockpiles must be kept as small as possible, with gentle slopes (18 degrees) in order to avoid excessive erosional induced losses.
- ❖ Excavated and stockpiled soil material are to be stored and bermed on the higher laying areas of the footprint area and not in any storm water run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate.
- ❖ Stockpiles susceptible to wind erosion are to be covered during windy periods.
- ❖ Audits must be carried out at regular intervals to identify areas where erosion is occurring.
- ❖ Appropriate remedial action, including the rehabilitation of the eroded areas, must occur.
- ❖ Rehabilitation of the erosion channels and gullies.
- ❖ Dust suppression must take place, without compromising the water balance of the area.
- ❖ Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion.

Soil Pollution

Level of risk: Low

Mitigation measures

- ❖ Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution.
- ❖ Spill kits to clean up accidental spills from earthmoving machinery must be well-marked and available on site.
- ❖ Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures.
- ❖ All facilities where dangerous materials are stored must be contained in a bund wall.
- ❖ Vehicles and machinery should be regularly serviced and maintained.

Land Capability and Land Use

Level of risk: Medium to High

Mitigation measures

- ❖ Ensure that optimal use is made of the available land through consultation with land owner and proper planning of prospecting activities.
- ❖ Surface agreement to be signed with land owners.

- ❖ Employ effective rehabilitation strategies to restore land capability and land use potential of the farm.
- ❖ All activities to be restricted within the demarcated areas.
- ❖ Ensure that land which is not used during construction is made available for grazing.

Groundwater

Level of risk: Low

Mitigation measures

- ❖ Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution.
- ❖ Spill kits to clean up accidental spills from earthmoving machinery must be well-marked and available on site.
- ❖ Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures.
- ❖ All facilities where dangerous materials are stored must be contained in a bund wall.
- ❖ Vehicles and machinery should be regularly serviced and maintained.

Surface Water

Level of risk: Low to Medium

Mitigation measures

- ❖ Sufficient care must be taken when handling hazardous materials to prevent pollution.
- ❖ Under no circumstances may ablutions occur outside the provided facilities.
- ❖ If servicing and washing of the vehicles occur on site, there must be specific areas constructed for these activities, which must have concrete foundations, bunding as well as oil traps to contain any spillages.
- ❖ A walled concrete platform, dedicated store with adequate flooring or bermed area and ventilation must be used to accommodate chemicals such as fuels, oils, paints, herbicide and insecticides.
- ❖ Oil residue shall be treated with oil absorbent and this material removed to an approved waste site.
- ❖ Spill kits must be easily accessible and workers must undergo induction regarding the use thereof.
- ❖ At all times care should be taken not to contaminate surface water resources.
- ❖ Store all litter carefully to prevent it from washing away or blown into any of the drainage channels or dams within the area.
- ❖ Provide bins for staff at appropriate locations, particularly where food is consumed.
- ❖ The prospecting site should be cleared daily and litter removed.
- ❖ Conduct ongoing staff awareness programmes in order to reinforce the need to avoid littering, which contributes to surface water pollution.

Indigenous Flora

Level of risk: Low to Medium

Mitigation measures

- ❖ Minimise the footprint of transformation.
- ❖ Encourage proper rehabilitation of prospected areas.
- ❖ Encourage the growth of natural plant species.
- ❖ Ensure measures for the adherence to the speed limit.
- ❖ Footprint areas of the prospecting activities must be scanned for Red Listed and protected plant species prior to prospecting.
- ❖ It is recommended that these plants are identified and marked prior to prospecting.
- ❖ These plants should, where possible, be incorporated into the design layout and left in situ.
- ❖ However, if threatened of destruction by prospecting, these plants should be removed (with the relevant permits from DAFF and DENC) and relocated if possible.
- ❖ A management plan should be implemented to ensure proper establishment of ex situ individuals, and should include a monitoring programme for at least two years after re-establishment in order to ensure successful translocation.
- ❖ All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.

All Invasive Plants

Level of risk: Low to Medium

Mitigation measures

- ❖ Minimise the footprint of transformation.
- ❖ Encourage proper rehabilitation of prospected areas.
- ❖ Encourage the growth of natural plant species.
- ❖ Mechanical methods (hand-pulling) of control to be implemented extensively.
- ❖ Annual follow-up operations to be implemented.

Fauna

Level of risk: Low to Medium

Mitigation measures

- ❖ Careful consideration is required when planning the placement for stockpiling topsoil and the creation of access routes in order to avoid the destruction of habitats and minimise the overall prospecting footprint.
- ❖ The appointment of a full-time ECO must render guidance to the staff and contractors with respect to suitable areas for all related disturbance.
- ❖ The extent of the prospecting site should be demarcated on site layout plans, and no construction personnel or vehicles may leave the demarcated area except those authorised to do so. Those areas surrounding the prospecting site that are not part of the demarcated development area should be considered as a no go zone for employees, machinery or even visitors.

- ❖ All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.
- ❖ The ECO must ensure that all contractors and workers undergo Environmental induction prior to commencing with work on site.
- ❖ The environmental induction should occur in the appropriate languages for the workers who may require translation.
- ❖ Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert.
- ❖ Employ measures that ensure adherence to the speed limit.

Habitat

Level of risk: Low to Medium

Mitigation measures

- ❖ Prospecting activities must be planned, where possible in order to encourage faunal dispersal and should minimise dissection or fragmentation of any important faunal habitat type.
- ❖ The extent of the prospecting area should be demarcated on site layout plans (preferably on disturbed areas or those identified with low conservation importance). No construction personnel or vehicles may leave the demarcated area except those authorised to do so.

Air Quality

Level of risk: Low

Mitigation measures

- ❖ Vegetation must be removed when soil stripping is required only. These areas should be limited to include those areas required for prospecting only, hereby reducing the surface area exposed to wind erosion. Adequate demarcation of these areas should be undertaken.
- ❖ Control options pertaining to topsoil removal, loading and dumping are generally limited to wet suppression.
- ❖ Where it is logistically possible, control methods for gravel roads should be utilised to reduce the re-suspension of particulates. Feasible methods include wet suppression, avoidance of unnecessary traffic, speed control and avoidance of track-on of material onto paved and treated roads.
- ❖ The length of time where prospecting areas are exposed should be restricted. Prospecting should not be delayed after vegetation has been cleared and topsoil removed where possible.
- ❖ Dust suppression methods should, where logistically possible, must be implemented at all areas that may/are exposed for long periods of time.
- ❖ For all prospecting activities management should undertake to implement health measures in terms of personal dust exposure, for all its employees.

Noise and Vibration**Level of risk:** Low to Medium**Mitigation measures**

- ❖ Restrict prospecting activities to daytime unless agreements obtained to do 24hr operations.
- ❖ Systematic maintenance of all forms of equipment, training of personnel to adhere to operational procedures that reduce the occurrence and magnitude of individual noisy events.
- ❖ Where possible material stockpiles should be placed so as to protect the boundaries from noise to individual operations.
- ❖ Standardised noise measurements should be carried out on individual equipment at the delivery to site to construct a reference data-base and regular checks carried out to ensure that equipment is not deteriorating and to detect increases which could lead to increase in the noise impact over time and increased complaints.
- ❖ Environmental noise monitoring should be carried out regularly to detect deviations from predicted noise levels and enable corrective measures to be taken where warranted.

Visual Impacts**Level of risk:** Low**Mitigation measures**

- ❖ Infrastructure should be placed to optimise the natural screening capacity of the vegetation.
- ❖ Where practical, protect existing vegetation clumps during in order to facilitate screening during the prospecting operation.
- ❖ Remove rubble and other building rubbish off site as soon as possible or place it in a container in order to keep the prospecting site free from additional unsightly elements.
- ❖ Dust suppression procedures should be implemented especially on windy days during earth works.
- ❖ Rehabilitation should aim to establish a diverse and self-sustaining surface cover that is visually and ecologically representative of naturally occurring vegetation species.
- ❖ Implement a management plan for the post-prospecting site in order to control the invasion of alien vegetation and to manage erosion, until the site is fully rehabilitated.

Traffic and Road Safety**Level of risk:** Low**Mitigation measures**

- ❖ Implement measures that ensure the adherence to traffic rules.

Heritage Resources**Level of risk: Low****Mitigation measures**

- ❖ The heritage if any is encountered and cultural resources (e.g. graveyards, ruins, historic structures, etc.) must be protected and preserved by the delineation of no go zones.
- ❖ Stone tools should be avoided where possible and fresh exposure should be recorded before destruction. All stone tool artefacts should be recorded, mapped and collected before destruction.
- ❖ Should development necessitate impact on any building structures, the developer should apply for a SAHRA Site Destruction Permit prior to commencement of construction.

Socio-Economic**Level of risk: Low to medium****Mitigation measures**

- ❖ The mine must ensure that false expectations are not created regarding job creation.
- ❖ Jobs must be allocated as advertised and in so far as is possible to local inhabitants.
- ❖ Contractors and employees should not be permitted to wander outside the prospecting area.
- ❖ Uncontrolled settlement of contractors and workers outside of the site will be prevented.
- ❖ The expectations of what benefits can accrue to the community must be managed from the initiation of the project.

Interested and Affected Parties**Level of risk: Low****Mitigation measures**

- ❖ Maintain active communications with IAPs.
- ❖ Ensure transparent communication with IAPs at all times.
- ❖ IAPs must be kept up to date on any changes in the prospecting operation.
- ❖ A complaints management system should be maintained by the applicant to ensure that all issues raised by community members are followed up and addressed appropriately.

ix) The outcome of the site selection Matrix. Final Site Layout Plan

(Provide a final site layout plan as informed by the process of consultation with interested and affected parties)



Figure 38. Final site layout plan

x) Motivation where no alternative sites were considered

No alternative location for the proposed prospecting operation was considered, as the possible alluvial diamond deposits which will finally be determined by the prospecting occur in this area. There is therefore no other alternative with regard to the overall operation footprint.

xi) Statement motivating the preferred site.

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

Not applicable. There is no alternative development location for the site as this is the area with the possible mineral resource and therefore the prospecting operation.

i) Plan of study for the Environmental Impact Assessment Process

i) Description of alternatives to be considered including the option of not going ahead with the activity

- **Land use development alternatives:**

The site layout may vary, depending on the operational requirements and the outcome of the Prospecting's first phases. However, the final design and layout of the infrastructure will be planned and decided upon by the developer on the grounds of reserves, and placement of infrastructure based on hauling distance, environmental features such as wind direction, heritage findings, protected species, and stormwater management on the prospecting area.

- **No-go option:**

The following positive impacts will be lost if the proposed prospecting project is not developed:

- o TAX and VAT obligations to SARS as well as Royalties;
- o CAPEX spent locally and regionally;
- o Employment opportunities;
- o Payroll income;
- o Operating expenditure and maintenance (OPEX);
- o Revenue.

Prospecting activities are believed to be one of the economically beneficial options for the areas.

If the operation does not continue it would hold back any potential employment for the region and the families who are likely to benefit from the positive employment opportunities. Simultaneously, it may have a stagnant effect on the economy of South Africa and the diamond industry as a whole. Substantial tax benefits to the State and Local Government will also be inhibited.

Prospecting and Mining forms an integrated part of the social and economic growth of South Africa.

ii) Description of the aspects to be assessed as part of the environmental impact assessment process

(The EAP must undertake to assess the aspects affected by each individual mining activity whether listed or not, including activities such as blasting, Loading, hauling and transport, and mining activities such as Excavations, stockpiles, discard dumps or dams, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control berms, roads, pipelines, powerlines, conveyers, etc..etc...)

1. The clearing of vegetation for:
 - Drill holes and pits and trenches
 - Access roads and haul roads
 - Surface infrastructure
 - Product Stockpile area
 - Waste disposal site (domestic and industrial waste)
2. The stripping and stockpiling of topsoil.
3. Load and Haul Operation for the prospecting operation (bulk sampling).
4. Altering the characteristics of surface water features (possible drainage channel).
5. The development of temporary stockpiles:
 - Topsoil storage area;
 - Mine Residue Stockpile for slime.
6. The rehabilitation of footprint areas where the bulk sampling pits have been excavated.
7. The construction of Processing plant.
8. Loading, hauling and transporting of ROM, product and material
9. Water holding facilities, pipeline and stormwater control:
 - Clean & Dirty water system: Stormwater dam / Water storage facility;
 - Water distribution Pipeline;
 - Water tank.
10. Fuel storage and refuelling bays;
 - Fuel Storage facility (Diesel tanks);
 - Concrete bund walls and diesel depots.
11. Supporting infrastructure:
 - Temporary Offices;
 - Office Parking Bay;
 - Temporary Workshop and Wash bay;
 - Salvage yard (Storage and laydown area);
 - Ablution facilities/ Sewage facilities;

- Generators;
- Pipelines transporting water;

(i) Description of aspects to be assessed by specialists:

The application area is next to the Orange River. The necessary Ecological study with a wetland delineation will be done. Furthermore, an Archaeologist and Palaeontologist will be contacted to do a survey on the farm for heritage / archaeological and palaeontological sensitive areas on the farm. All information will be used to identify areas that can be sensitive and to make the necessary provisions to avoid these areas. Any other specific specialist reports will be done when specifically requested by any Department or in interested and affected party consultation referred to.

(ii) Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives:

The receiving environment will be determined using a combination of on-site observations, spatial information, project description, site layout and previous studies currently available to the EAP. Based on the EAPs knowledge and experience, the receiving environment will include geological features, topography, land use, archaeological and historical sites, surface water, groundwater, terrestrial ecology, air quality, noise, etc.

The identification of potential impacts of the prospecting activity will be based on the legal requirements; the nature of the proposed activity; the nature of the receiving environment; and issues raised during the public participation process. Considering the factors listed above and based on the EAPs knowledge and experience, environmental impacts that could potentially result from the prospecting activities include impacts on air quality, noise, fauna, flora, ground water, terrestrial ecology, heritage resources, socio-economy, aquatic environments, visuals, storm water and erosion.

The consideration of alternatives is a critical component of the EIA process, where an appropriate range of alternatives require consideration whilst achieving the desired objective of the proposed project. In order to ensure that the proposed project enables sustainable prospecting, a number of feasible options will be explored. The various alternatives in terms of land use, project infrastructure, prospecting method and proceeding without the prospecting operation will be assessed in terms of logistical practicality, environmental acceptability and economic feasibility. Alternatives for the locality of the prospecting operation will however not form part of this consideration, as the location of the prospecting site is determined by the geological location of the mineral resource.

(iii) The proposed method of assessing duration significance:

The lifetime of the impact will be measured in the context of the lifetime of the proposed phase or activity.

Weight	Duration of Impact	Explanation of Duration
1	Very Short	Less than 1 year
2	Short	1 to 5 years The impact will either disappear with mitigation or will be mitigated through natural process in a short time period.

3	Medium	6 to 15 years The impact will last up to the end of the prospecting period, where after it will be entirely negated.
4	Long term (Life of project)	16 to 50 years The impact will continue or last for the entire operational life of the prospecting operation, but will be mitigated by direct human action or by natural processes thereafter.
5	Very Long term	Longer than 50 years
6	Permanent	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.

(iv) The stages at which the Competent Authority will be consulted:

Consultation with the Competent Authority will take place throughout the application process, however more specifically; consultation will take place before submission of the Scoping Report and again before submission of the EIA/EMPR Report.

(v) Particulars of the public participation process with regard to the Impact Assessment process that will be conducted:

1. Steps to be taken to notify interested and affected parties:

(These steps must include the steps that will be taken to ensure consultation with the affected parties identified in (h)(ii) herein.)

The consultation process as described by NEMA for Environmental Authorisation was followed and is still in process. The following steps were already taken:

A copy of the draft Scoping Report (burned to disc) will be sent to all identified interested and affected parties. All Government Departments identified were also notified by registered letters. The surface owner also received a registered letter.

A notice will also be placed on the gates at the entrance of the proposed site to invite any other interested parties to come forward and to register. Other notices will be brought up at relevant public places to inform the communities in the surrounding area of the proposed prospecting operation.

The draft Scoping Report was also placed at the Douglas public Library along with a notice to notify the public of the proposed prospecting operation as well as to provide access to the draft Scoping Report to the community.

Furthermore, an advert was placed in the DFA Newspaper on 9 September 2022 which invited any other interested or affected party to come forward and register.

Proof of consultation (attendance registers, minutes of meetings and response forms) is attached as **Appendix 3**. The consultation process is still in process.

2. Details of the engagement process to be followed:

(Describe the process to be 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 and record of such consultation will be required in the EIA at a later stage.)

The required level of Public Participation will be considered based on the:

- scale of anticipated impacts,
- public and environmental sensitivity of the project,
- Potentially affected parties.

The minimum requirement for public participation in accordance to EIA regulations will always be met.

The landowner and the neighbours will be identified and consulted. An advert will be published in the local newspaper for comments and notices will be placed to invite any unidentified parties which might like to register. Information will be sent via Registered post and emails where relevant to all affected government departments and any person who registers during the application process.

Site notices will be placed at the entrance to the site and nearby sites or public places if any is available at the nearest town.

Public meetings will only be conducted where activities will directly impact close communities or when instructed by any competent authority or upon a specific request from interested and affected parties.

3. Description of the information to be provided to Interested and Affected Parties:

(Information to be provided must include the initial site plan and sufficient detail of the intended operation and the typical impacts of each activity, to enable them to assess what impact the activities will have on them or on the use of their land.)

The following information will be provided to IAPs:

- The site plan;
- List of activities to be authorised;
- Scale and extent of activities to be authorised;
- Typical impacts of activities to be authorised;
- The duration of the activity.

The following information will be requested from the IAPs:

- To provide information on how they consider that the proposed activities will impact on them or their socio-economic conditions;
- To provide written responses stating their suggestions to mitigate the anticipated impacts of each activity;
- To provide information on current land uses and their location within the area under consideration;
- To provide information on the location of environmental features on site to make proposals as to how and to what standard the impacts on site can be remedied. They will be requested to make written proposals;

- To mitigate the potential impacts on their socio-economic conditions to make proposals as to how the potential impacts on their infrastructure can be managed, avoided or remedied).

(vi) Description of the tasks that will be undertaken during the environmental impact assessment process:

Determining environmental attributes

The receiving environment will be determined using a combination of on-site observations, spatial information, project description, site layout and previous studies currently available to the EAP. Based on the EAPs knowledge and experience, the receiving environment will include geological features, topography, land use, archaeological and historical sites, surface water, groundwater, terrestrial ecology, air quality, noise, etc.

Identification of impacts and risks

The identification of potential impacts of the prospecting activity will be based on the legal requirements; the nature of the proposed activity; the nature of the receiving environment; and issues raised during the public participation process.

Considering the factors listed above and based on the EAPs knowledge and experience, environmental impacts that could potentially result from the prospecting activities include impacts on air quality, noise, fauna, flora, ground water, surface water, terrestrial ecology, heritage resources, socio-economy, aquatic environments, visuals, stormwater and erosion.

Consideration of alternatives

The consideration of alternatives is a critical component of the EIA process, where an appropriate range of alternatives require consideration whilst achieving the desired objective of the prospecting project. In order to ensure that the proposed project enables sustainable prospecting, a number of feasible options will be explored. The various alternatives in terms of land use, project infrastructure, prospecting method and proceeding without the prospecting operation will be assessed in terms of logistical practicality, environmental acceptability and economic feasibility.

Alternatives for the locality of the prospecting operation will however not form part of this consideration, as the location of the prospecting site is determined by the geological location of the mineral resource.

Process to assess and rank impacts

Before any assessment can be made the following evaluation criteria need to be described

Table 9. Explanation of PROBABILITY of impact occurrence

Weight	Probability of Impact Occurrence	Explanation of Probability
1	Very Low	<20% sure of particular fact or likelihood of impact occurring
2	Low	20 – 39% sure of particular fact or likelihood of impact occurring

3	Moderate	40 – 59% sure of particular fact or likelihood of impact occurring
4	High	60 – 79% sure of particular fact or likelihood of impact occurring
5	Very High	80 – 99% sure of particular fact or likelihood of impact occurring
6	Definite	100% sure of particular fact or likelihood of impact occurring

Table 10. Explanation of EXTENT of impact

Weight	Extent of Impact	Explanation of Extent
1	Site Specific	Direct and Indirect impacts limited to site of impact only
2	Surrounding Area	Direct and Indirect impacts affecting environmental elements within 2 km of site
3	Local Municipality	Direct and Indirect impacts affecting environmental elements within the Syancuma/ Douglas area
4	Regional/District	Direct and Indirect impacts affecting environmental elements within District (Douglas District)
5	Provincial	Direct and Indirect impacts affecting environmental elements in the Northern Cape Province

Table 11. Explanation of DURATION of impact

Weight	Duration of Impact	Explanation of Duration
1	Very Short	Less than 1 year
2	Short	1 to 5 years
3	Medium	6 to 15 years
4	Long term (Life of project)	16 to 50 years
5	Very Long term	Longer than 50 years
6	Permanent	Permanent

Table 12. Explanation of SEVERITY of the impact

Weight	Impact Severity	Explanation of Severity
1	No Impact	There will be no impact at all – not even a very low impact on the system or any of its parts.
2	Very Low	Impact would be negligible. In the cast of negative impacts, almost no mitigation and/or remedial activity would be needed, and any minor steps which might be needed would be easy, cheap and simple. In the case of positive impacts alternative means would almost all likely to be better, if one or a number of ways, then this means of achieving the benefit.
3	Low	Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and/or remedial activity would be either easily achieved or little would be required or both. In the case of positive impacts alternative means for achieving this benefit would be easier, cheaper, more effective, less time-consuming, or some combination of these.

4	Moderately Severe	Impact would be real but not substantial within the bounds of those which could occur. In the case of negative impacts, mitigation and/or remedial activity would be both feasible and fairly easily possible. In the case of positive impacts other means other means of covering these benefits would be about equal in cost and effort.
5	High Severance	Impacts of substantial order. In the case of negative impacts, mitigation and/or remedial activity would be feasible but difficult, expensive, time consuming or some combination of these. In the case of positive impacts other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.
6	Very High Severity	Of the highest order possible within the bounds of impacts which could occur, in the case of negative impacts, there would be no possible mitigation and/or remedial activity to offset the impact at the spatial or time scale for which was predicted. In the case of positive impacts there is no real alternative to achieving the benefit.

Methodology used in determining and ranking the nature, severity, consequences, extent, duration and probability of potential environmental impacts and risks

The criteria used to assess the significance of the impacts are shown in the table below. The limits were defined in relation to prospecting characteristics. Those for probability, intensity/severity and significance are subjective, based on rule-of-thumb and experience. Natural and existing mitigation measures were considered. These natural mitigation measures were defined as natural conditions, conditions inherent in the project design and existing management measures, which alleviate impacts. The significance of the impacts was calculated by using the following formula:

$(\text{Severity} + \text{Extent} + \text{Duration}) \times \text{Probability weighting}$

For the impact assessment, the different project activities and associated infrastructure were identified and considered in order to identify and analyse the various possible impacts.

Table 13.

SIGNIFICANCE				
Colour Code	Significance rating	Rating	Negative Impact	Positive Impact
	Very low	3 -16	Acceptable/Not serious	Marginally Positive
	Low	17 - 22	Acceptable/Not serious	Marginally Positive
	Medium-Low	23 -33	Acceptable/Not desirable	Moderately Positive
	Medium	34 - 48	Generally undesirable	Beneficial

	Medium-High	49 - 56	Generally unacceptable	Important
	High	57 - 70	Not Acceptable	Important
	Very High	90 - 102	Totally unacceptable	Critically Important

Significance of impacts is defined as follows:

Very Low - Impact would be negligible. Almost no mitigation and/or remedial activity would be needed, and any minor steps which might be needed would be easy, cheap and simple.

Low - Impact would have little real effect. Mitigation and/or remedial activity would be either easily achieved or little would be required or both.

Medium Low- Impact would be real but not substantial within the bounds of those which could occur. Mitigation and/or remedial activity would be both feasible and fairly easily possible.

Medium - Impact would be real but not substantial within the bounds of those which could occur. Mitigation and/or remedial activity would be feasible and possible.

Medium High- Impact would be real but could be substantial within the bounds of those which could occur. Mitigation and/or remedial activity would be both feasible and possible but may be difficult and or costly.

High - Impacts of substantial order. Mitigation and/or remedial activity would be feasible but difficult, expensive, time consuming or some combination of these.

Very High - Of the highest order possible within the bounds of impacts which could occur. There would be no possible mitigation and/or remedial activity to offset the impact at the spatial or time scale for which was predicted.

(vii) Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored:

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 (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 management and monitoring through rehabilitation.)	POTENTIAL FOR RESIDUAL RISK
Ablution facilities Chemical toilets	<ul style="list-style-type: none"> • Soil contamination • Groundwater contamination • Odours 	<ul style="list-style-type: none"> • Maintenance of chemical toilets on regular basis. • Removal of containers upon closure. 	Low
Clean & Dirty water system	<ul style="list-style-type: none"> • Surface disturbance • Groundwater contamination • Soil contamination • Surface water contamination 	<ul style="list-style-type: none"> • Maintenance of berms and trenches. • Oil traps used in relevant areas. • Drip trays used. • Immediately clean hydrocarbon spill. 	Low/Medium
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 hydrocarbon spill. 	Medium
Bulk Sampling	<ul style="list-style-type: none"> • Dust • Possible Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna 	<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 	Medium

	<ul style="list-style-type: none"> • Soil contamination • Surface disturbance • Surface water contamination 	<ul style="list-style-type: none"> • Drip trays • Erosion control 	
Generators	<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 	Medium
Office – Pre-fabricated office blocks on concrete	<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 	Low
Parking bay	<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 • 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
Processing plant	<ul style="list-style-type: none"> • Dust • Noise • 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 	Medium

Water distribution Pipeline	<ul style="list-style-type: none"> • Surface disturbance • Possible Groundwater contamination • Soil contamination • Surface water contamination 	<ul style="list-style-type: none"> • Maintenance of pipes. 	Low
Roads	<ul style="list-style-type: none"> • Dust • Possible Groundwater contamination • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance 	<ul style="list-style-type: none"> • Maintenance of roads • Dust control and 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 	Low to Medium
Salvage yard	<ul style="list-style-type: none"> • Possible 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. • Stormwater run-off control • Immediately clean hydrocarbon spill 	Low
Stockpile area	<ul style="list-style-type: none"> • Dust • Possible 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 • 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
Topsoil storage area	<ul style="list-style-type: none"> • Dust 	<ul style="list-style-type: none"> • Dust control and monitoring • Stormwater run-off control. • Continuous rehabilitation 	Low

	<ul style="list-style-type: none"> • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil disturbance • Surface disturbance 	<ul style="list-style-type: none"> • Rip disturbed areas to allow re-growth of vegetation cover • Backfilling of topsoil during rehabilitation 	
Waste disposal site	<ul style="list-style-type: none"> • Groundwater contamination • Surface water contamination 	<ul style="list-style-type: none"> • Storage of waste within receptacles • Storage of hazardous waste on concrete floor with bund wall • Removal of waste on regular intervals. 	Low
Mine Residue Deposit – Slimes	<ul style="list-style-type: none"> • Dust • Possible 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 • Stormwater run-off control. • Rip disturbed areas to allow re-growth of vegetation cover 	Low to Medium
Wash bay	<ul style="list-style-type: none"> • Possible Groundwater contamination • 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 	Low
Water tank: It is anticipated that the operation will establish 1 x 10 000 litre water tanks with purifiers for potable water.	<ul style="list-style-type: none"> • Orange River water and usage • Surface disturbance 	<ul style="list-style-type: none"> • Monitor water quality and quantity • Maintenance of tanks (check for leaks). 	Low

(viii) Other information required by the Competent Authority:

1. 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:-

a. 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 Appendix '7' and confirm that the applicable mitigation is reflected in 2.5.3, 2.11.6 and 2.12 herein.)

The socio-economic conditions of the local community could be affected in two ways:

- Negative impacts to the welfare of the residents and workers through general nuisance, dust generation, damages to properties and any associated potential safety risks.
- Positive impacts through job creation and local business opportunities.
- The consultation with interested and affected parties is on-going and any issues, concerns or comments will be considered and included in the EIA report and control measures will be presented in the EMP report.

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

(Provide the results of investigation, assessment and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in Section 3(2) of the National Heritage Resources Act, 1999 (Act 25 of 1999) with the exception of the national estate contemplated in Section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as Appendix '8' and confirm that the applicable mitigation is reflected in 2.5.3, 2.11.6 and 2.12 herein.)

A Heritage and Paleontological Impact study will be done to determine if any such sites and/or objects are located on the sites itself.

During Screening the Beatrys (Lanyon Vale) site was indicated as Low for Archaeological and Culture Heritage theme and Medium and High sensitivity on Paleontology.

Should any heritage features and/or objects be located or observed, a heritage specialist will be contacted immediately. Observed or located heritage features and/or objects may not be disturbed or removed in any way until such time that a heritage specialist has been able to make an assessment as to the significance of the site (or material) in question. This is true for graves and cemeteries as well.

(ix) 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 details, 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 '9'.)

As mentioned before, the specific occurrence of possible diamond resources in the area dictates the selection of the specific prospecting site and there are no alternatives in terms of project location.

Site selection of the prospecting areas will be guided by:

- Comments received during the consultation process during prospecting,
- Geological investigation,
- Current land use,
- Proximity to historical mining sites,
- Proximity to the Orange River,
- Proximity to receptors,
- Proximity to infrastructure and
- Natural undisturbed areas.
- Careful consideration has been given to current land use. Alternative sites located on active farming lands have been excluded.

The prospecting operation will provide ±10 - 25 jobs and will also add to the increased economic activity and the area surrounding the farm.

Negative impacts on the area are expected to be temporary and can be mitigated to a large extent if the recommendations of the EMPR area adhered to e.g. rehabilitation.

(x) Undertaking regarding correctness of information:

I, RH Oosthuizen, ID number 7004180037082, herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected Parties has been correctly recorded in the report.



Signature of EAP

Date: 12 September 2022

(xi) Undertaking regarding level of agreement:

I, RH Oosthuizen, ID number 7004180037082, herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with Interested and Affected Parties and stakeholders has been correctly recorded and reported herein.



Signature of EAP

Date: 12 September 2022

- END -