PROSPECTING RIGHT OVER THE REMAINING EXTENT OF THE FARM ROOIFONTEIN NO 1722 (FORMERLY KNOWN AS SPECULATIE NO 217) IN THE BOSHOF MAGISTERIAL DISTRICT, FREE STATE PROVINCE

DRAFT BASIC ASSESSMENT REPORT

NOVEMBER 2020

REFERENCE NUMBER: *FS 30/5/1/1/2/10261 PR*

PREPARED FOR:

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EXECUTIVE SUMMARY

Affordable Outcome CC submitted a Section 102 (S102) amendment application in terms of the MPRDA, 2002 to include 4.8864 ha into their approved prospecting footprint (333.0435 ha) over the Remaining Extent of the farm Rooifontein No 1722 (formerly known as Speculatie No 217) in the Boshof Magisterial District. The S102 application necessitates an application for a Part 2 amendment of the holder's EMP in terms of GNR 326 Section 31. The S102 application further constitute listed/specified activities in terms of the NEMA: EIA Regulations, 2014 (as amended) and therefore requires a basic assessment process. This report, the Draft Basic Assessment Report, forms part of the departmental requirements, and presents the first report of the Part 2 (NEMA) amendment- and basic assessment process.

Project Description:

Affordable Outcomes holds a prospecting right for diamonds (general, alluvial, and in kimberlite) over 333.0435 ha of the above mentioned property. During the prospecting right application, a ±5 ha mining permit application, by Wheatfields Investments 168 (Pty) Ltd, was pending with the DMRE and therefore excluded from the above mentioned prospecting right footprint. As the mining permit application was unsuccessful, Affordable Outcomes CC, identified the need to incorporate the ±5 ha area into their prospecting footprint seeing that the prospecting area already encloses the mining permit area and will allow for the addition of a bulk sampling site. The invasive prospecting phase will constitute the drilling of ±10 boreholes (RC and/or DD holes) followed by the bulk sampling of five pits/trenches. The proposed activity will necessitate the disturbance of ±1 ha of the approved PR footprint.

The decommissioning phase will entail the sealing and capping of the drill holes; removal of all the prospecting infrastructure and equipment from the processing area; refilling, topsoiling and landscaping of the bulk sampling pits/trenches and the decommissioning of the evaporation dams. Upon closure the land use will revert back to the landowner and lawful occupiers.

Site- and Project Alternatives:

The earmarked ±5 ha area (to which this S102 application is applicable) is enclosed by the approved 333 ha prospecting right, and therefore no site alternatives apply to the S102 application.

Project Alternative 1 was identified as the preferred and only viable site alternative based on the following:

- The approved PR footprint encompasses the proposed ±5 ha area and therefore the extension area can easily be incorporated into the prospecting programme;

- The addition of the extension area will allow the PR Holder to add another bulk sampling site to the prospecting programme.
- The DMRE issued an EA for the mining of the proposed extension area, thereby confirming that no sensitive areas were identified that deters mining/mining related activities;
- Upon closure, the land use of the prospecting area can be returned to the landowner and lawful occupiers.

No-go Alternative:

Should the S102 application be rejected the PR Holder will not be able to prospect the ±5 ha exclusion area on the property, and the prospecting programme will only entail the drilling of ±10 RC boreholes and the bulk sampling of 4 pits/trenches as discussed above. As described in this document, the *status quo* / no-go alternative was not deemed the preferred option.

Public Participation Process:

Regulation 32(1)(a)(aa) of the NEMA: EIA Regulations, 2017 stipulates that an applicant (for a Part 2 amendment) must submit a report reflecting the changes to the EMPR that has been subjected to a public participation process. In light of this, the relevant stakeholders and I&AP's were informed of the S102 amendment application and proposed inclusion of the earmarked ±5 ha area, by means of an advertisement in the DFA (Diamond Fields Advertiser) and on-site notices in Afrikaans and English placed at the entrance to the property. A notification letter inviting comments on the DBAR and EMPR over a 30-days commenting period, ending 04 December 2020, will be send directly to the landowner, lawful occupier, neighbouring landowners, stakeholders and any other I&AP that may register on the project. The comments received on the DBAR and EMPR will be incorporated into the final BAR and EMPR to be submitted to the DMRE for consideration and decision taking.

Basic Assessment Report:

The basic assessment report identifies the potential positive and negative impacts that the proposed activity will have on the environment and the community as well as the aspects that may impact on the socio-economic conditions of directly affected persons, and proposes possible mitigation measure that could be applied to modify / remedy / control / stop the identified impacts.

The key finding of the environmental impact assessment entail the following:

Topography

The bulk sampling phase will have a temporary impact on the topography of the area. However, upon rehabilitation of the pits/trenches and removal of the prospecting infrastructure, the topography of the

study area should be restored to its pre-prospecting state. The potential for the prospecting activities to negatively impact the topography of the study area is of low significance as the activity will have no residual impact on the environment upon closure of the PR.

Visual Characteristics

The viewshed analysis showed that the visual impact of the prospecting operation will be of low significance. The small scale of the proposed operation, and the proposed progressive rehabilitation of the prospecting area contributes to the low visual significance. Should the PR Holder successfully rehabilitate the drilling and bulk sampling sites (upon closure), no residual visual impact is expected upon closure.

Air and Noise Quality

Should the PR Holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance. The potential impact on the noise ambiance of the receiving environment is expected to be of low-medium significance and representative of the current land use.

Geology and Soil

The invasive phases (2 and 3) of the proposed activity will temporarily affect ±1 ha of the approved footprint area. The PR Holder proposes to implement progressive rehabilitation where one bulk sampling site will be reinstated prior to the opening of a consecutive pit/trench. The decommissioning phase will entail the sealing and capping of the drill holes; removal of all the prospecting infrastructure and equipment from the processing area; refilling, topsoiling and landscaping of the bulk sampling pits/trenches and the decommissioning of the evaporation dams. No residual impact is expected.

Hydrology

No wetlands, drainage lines or watercourses occur on or near the ±5 ha extension area that may be affected should the S102 application be approved. Further to the above, the PR Holder proposes that the main water supply will be from the Kimberley Municipality's water works sites, and that recycled water will also be used during the mineral processing activities. All excess water, after dewatering at the plant, will be stored within an evaporation dam for recycling purposes. The main purpose of the evaporation dam is to store and recycle water during the prospecting activities.

Groundcover:

The ecologist concluded that the ±5 ha extension area was modified to a large degree, notably disturbed and that no vegetation species or ecological function of high conservation significance occur on the site. No rare or endangered species were identified within the footprint area (±5 ha). However, the protected Shepherds Tree (*Boscia albitrunca*) and the large Umbrella Thorn (*Vachellia tortilis*) must be retained if possible.

Fauna

The fauna within the PR footprint will not be impacted by the prospecting activities as they will be able to move away or through the site, without being harmed.

Cultural and Heritage Environment

The AIA concluded that the ±5 ha extension area is located within a historical mining area that forms part of a historically significant landscape central to the Kimberley Diamond Rush of the 1870's and the area is therefore considered to be of high historical (and historical archaeological) significance. The archaeologist advised against the mining of the footprint area (±5 ha) as it would likely have an adverse effect on the integrity of Kimberley's historical landscape. It is proposed that the prospecting (instead of mining) of the area will entail the disturbance of an area of 200 m² allowing for one bulk sampling pit/trench. Should the S102 application be approved, the footprint of the bulk sampling pit/trench must be determined in consultation with an archaeologist, and the mitigation measures proposed in this report must be strictly adhered to.

Site Specific Infrastructure

No prospecting activities are planned over any of the existing structures on the farm. The Olifantsfontein Hotel will remain intact, and will not be disturbed by the prospecting programme. Other infrastructure within the PR footprint comprises of farm roads and fences. None of these structures will be impacted by the prospecting activities.

Environmental Management Programme (EMPR)

The EMPR provides a description of the impact management outcomes and closure objectives. It presents the impacts to be mitigated in their respective phases as well as stipulates the mitigation measures to be applied on site.

The financial provision amount that will be necessary for the rehabilitation of damages caused by the operation, both sudden closures during the normal operation of the project and at final, planned

closure gives a sum total of R 629 206.93. The PR Holder has a financial guarantee to the value of R 629 801.76 lodged with the DMRE that is deemed sufficient to cover the rehabilitation cost of the proposed prospecting activity.

LIST OF ABBREVIATIONS

BGIS	Biodiversity GIS
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Area
DARD	Department of Agriculture and Rural Development
DBAR	Draft Basic Assessment Report
DEDTEA	Department of Economic Small Business Development, Tourism and Environmental Affairs
DPRT	Department of Police, Roads and Transport
DPWI	Department of Public Works and Infrastructure
DMRE	Department of Mineral and Resources and Energy
DoL	Department of Labour
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIA Regulations	Environmental Impact Assessment Regulations, 2014 (as amended 2017)
EMP	Environmental Management Plan
EMPR	Environmental Management Programme
FBAR	Final Basic Assessment Report
FEL	Front-end-loader
GNR	Government Notice
I&AP's	Interested and Affected Parties
LDM	Lejweleputswa District Municipality
MHSA	Mine Health and Safety Act, 1996 (Act No. 29 of 1996)
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Control Act, 2004 (Act No. 39 of 2004)

NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
NRTA	National Road Traffic Act, 1996 (Act No. 93 of 1996)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PCB's	Polychlorinated Biphenyl
PCO	Pest Control Officer
PPE	Personal Protective Equipment
PR	Prospecting Right
PSM	Palaeontological Sensitivity Map
PWP	Prospecting Works Programme
S102	Section 102 amendment application in terms of the MPRDA, 2002
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SAMBF	South African Mining and Biodiversity Forum
SPM	Sol Plaatje Local Municipality
SWMA	Sub-Water Management Area
TLM	Tokologo Local Municipality
USBM	US Bureau of Mines
WMA	Water Management Area
WULA	Water Use Licence Application

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ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATION IN TERMS OF THE NATIONAL ENVIRONMENTAL 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: Affordable Outcomes CC

TEL NO: 076 335 5332
FAX NO: N/A
POSTAL ADDRESS: P.O. Box 2198, Kimberley, 8300
PHYSICAL ADDRESS: 3-5 Stone Street, Kimberley, 8301
FILE REFERENCE NUMBER SAMRAD: FS 30/5/1/2/2/10261 PR

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 29 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 can 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 furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

(a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

(b) identify the alternatives considered, including the activity, location, and technology alternatives;

(c) describe the need and desirability of the proposed alternatives,

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:

  (i) the nature, signification, consequence, extent, duration, and probability of the impacts occurring to; and

  (ii) the degree to which these impacts –

    (aa) can be reversed;

    (bb) may cause irreplaceable loss of resources; and

    (cc) can be managed, avoided or mitigated;

(e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to –

  (i) identify and motivate a preferred site, activity and technology alternative;

  (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and

  (iii) identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. CONTACT PERSON AND CORRESPONDENCE ADDRESS

a) Details of: Greenmined Environmental

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) the proponent must appoint an independent Environmental Assessment Practitioner (EAP) to undertake the environmental impact assessment (EIA) of any activities regulated in terms of the aforementioned Act. Affordable Outcomes CC appointed Greenmined Environmental (Pty) Ltd to undertake the study needed. Greenmined Environmental (Pty) Ltd has no vested interest in Affordable Outcomes CC or the prospecting project and declares its independence as required by the Environmental Impact Assessment Regulations, 2014 (as amended April 2017) (EIA Regulations).

i) Details of the EAP

Name of the Practitioner:	Ms Christine Fouché (Senior Environmental Specialist)
Tel No.:	021 851 2673
Fax No.:	086 546 0579
E-mail address:	christine.f@greenmined.co.za

ii) Expertise of the EAP.

(1) The qualifications of the EAP
(with evidence).

Ms. Fouché has a Diploma in Nature Conservation and a B.Sc. in Botany and Zoology. Full curriculum vitae with evidence is attached as Appendix M.

(2) Summary of the EAP's past experience.
(In carrying out the Environmental Impact Assessment Procedure)

Ms Fouché has fifteen years' experience in doing Environmental Impact Assessments and Mining Applications in South Africa. See Appendix M.

b) Location of the overall Activity.

Table 1: Location of the prospecting area.

Farm Name:	Remaining Extent of the farm Rooifontein No 1722 (formerly known as Speculatie No 217)
Application area (Ha)	➢ Approved prospecting right area: 333.0435 ha ➢ Proposed extension area: 4.8864 ha ➢ Total area (if S102 approved): 337.9299 ha
Magisterial district:	Boshof
Distance and direction from the nearest town	Approximately 14 km east of Kimberley (on the Free State side), and can be reached via the R64 provincial road between Kimberley and Boshof.
21 digit Surveyor General Code for each farm portion	F00400000000172200000

c) Locality map

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

The requested map is attached as Appendix C.

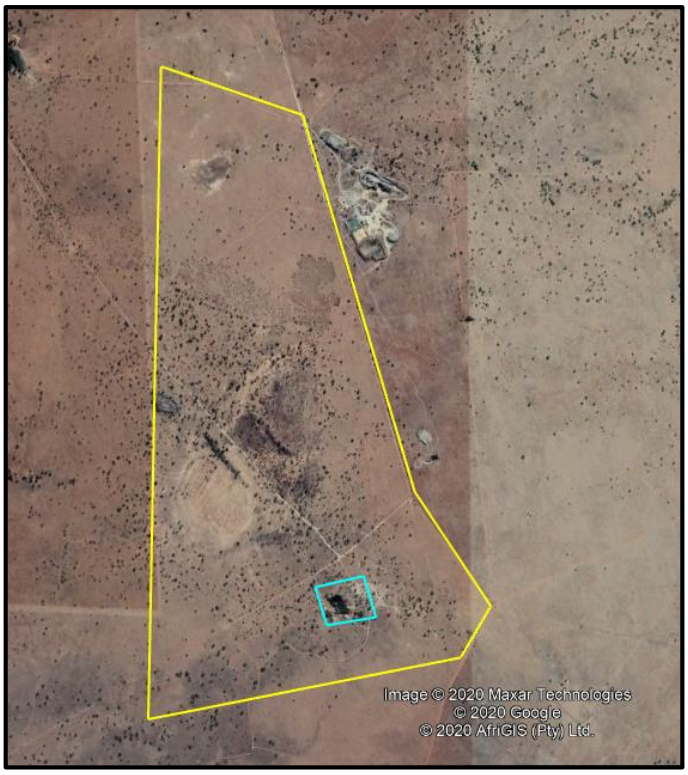


Figure 1: Satellite view of the prospecting area (yellow polygon) of Affordable Outcome CC with the blue polygon showing the ±5 ha area proposed to be included in the prospecting footprint (image obtained from Google Earth).

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

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

Affordable Outcome CC (hereinafter referred to as the "PR Holder") submitted a Section 102 (S102) amendment application in terms of the MPRDA, 2002 to include 4.8864 ha (hereafter rounded off to ±5 ha) into their approved prospecting footprint (333.0435 ha). The S102 application necessitates an application for a Part 2 amendment of the holder's EMP in terms of GNR 326 Section 31. The S102 application further constitute listed/specified activities in terms of the NEMA: EIA Regulations, 2014 (as amended) and therefore requires a basic assessment process that assess project specific environmental impacts and alternatives, consider public input, and propose mitigation measures, to ultimately culminate in an environmental management programme that informs the competent authority (Department of Mineral Resources and Energy) when considering the environmental authorisation.

i) Listed and specified activities

Table 2: Listed and specified activities triggered by the associated prospecting activities

NAME OF ACTIVITY (E.g. For prospecting – drill site, site camp, ablution facilities, 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 m^2	**LISTED ACTIVITY** Mark with an X where applicable or affected	**APPLICABLE LISTING NOTICE** (GNR 324, GNR 325, GNR 326 OR GNR 327)
Application for a Section 102 amendment of the prospecting right.	337.9299 ha (333.0435 ha approved PR footprint + 4.8864 ha extension area)	X	GNR 327 LN 1 Activity 20
GNR 327 Listing Notice 1 Activity 20: Any activity including the operation of that activity which requires a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including – (a) associated infrastructure, structures and earthworks, directly related to prospecting of mineral resources; or (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.			
Prospecting and bulk sampling of the area (invasive phase).	±1 ha	X	GNR 327 LN 1 Activity 20

NAME OF ACTIVITY (E.g. For prospecting – drill site, site camp, ablution facilities, 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 m^2	**LISTED ACTIVITY** Mark with an X where applicable or affected	**APPLICABLE LISTING NOTICE** (GNR 324, GNR 325, GNR 326 OR GNR 327)
GNR 327 Listing Notice 1 Activity 20: Any activity including the operation of that activity which requires a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including – (a) associated infrastructure, structures and earthworks, directly related to prospecting of mineral resources; or (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.			
Final rehabilitation and closure of the disturbed areas.	±1 ha	X	GNR 327 LN 1 Activity 22
GNR 327 Listing Notice 1 Activity 22: *The decommissioning of any activity requiring –* *(i) a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); or* *(ii) a prospecting right, mining right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure;* *but excluding the decommissioning of an activity relating to the secondary processing of a –* *(a) mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource; or* *(b) petroleum resource, including the refining of gas, beneficiation, oil or petroleum products; –* *in which case activity 31 in this Notice applies.*			

ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to the prospected/mined and for a linear activity, a description of the rout of the activity)

APPROVED AFFORDABLE OUTCOMES PROJECT

1. BACKGROUND INFORMATION & CURRENT STATUS

(Information extracted from the approved Affordable Outcomes Environmental Management Plan)

The Department of Mineral Resources and Energy (DMRE) granted Affordable Outcomes a prospecting right (24 July 2020) for diamonds (general, alluvial, and in kimberlite) over 333.0435 ha of the above mentioned property (see Appendix B).

As shown in the figure below, a ±5 ha mining permit application, by Wheatfields Investments 168 (Pty) Ltd (on the same property), was accepted by the DMRE and therefore excluded from the above mentioned prospecting right footprint.

The table below lists the GPS coordinates of the approved prospecting right footprint.

Table 3: GPS coordinates of the prospecting right.

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
A	28°46'50.60"	24°51'39.47"	-28.780721°	24.860964°
B	28°46'58.74"	24°52'05.35"	-28.782982°	24.868154°
C	28°47'59.29"	24°52'25.29"	-28.799804°	24.873692°
D	28°48'16.49"	24°52'39.88"	-28.804581°	24.877745°
E	28°48'25.06"	24°52'34.92"	-28.806960°	24.876366°
F	28°48'34.50"	24°51'37.36"	-28.809582°	24.860378°
EXCLUDED AREA:				
G	28°48'13.86"	24°52'07.61"	-28.80385°	24.86878°
H	28°48'20.05"	24°52'09.73"	-28.80557°	24.86937°
J	28°48'18.72"	24°52'18.62"	-28.80520°	24.87184°
K	28°48'12.35"	24°52'16.36"	-28.80343°	24.87121°

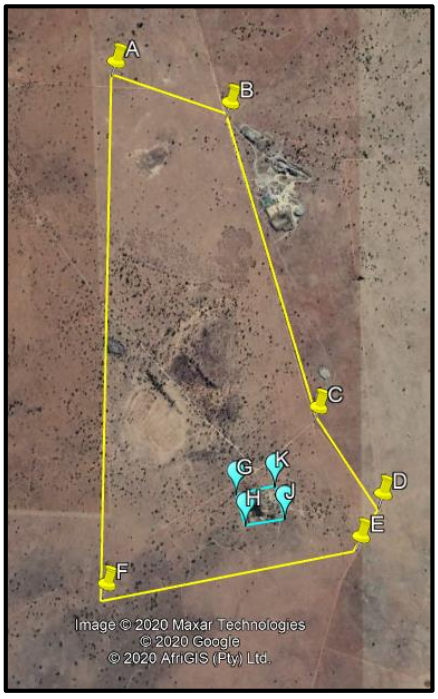


Figure 2: Satellite view showing the approved prospecting right footprint (yellow polygon) where the blue polygon shows the exclusion area (image obtained from Google Earth).

As the prospecting right was only granted in 2020, no invasive prospecting activities has commenced yet. The following table provides an indication of the proposed prospecting phases and associated activities.

Table 4: Prospecting phases of the Affordable Outcomes operation.

PHASE	ACTIVITY	SKILL(S) REQUIRED	OUTCOME
PHASE 1 & 4 Non-invasive Prospecting	➢ Geological Desktop Study. ➢ Report Writing.	➢ Geologist	➢ Desktop reports on previous drilling, maps, etc. ➢ Interpretation of geological structure from field mapping for targets selection. ➢ Investigate external diamond occurrence apart from the pipe. ➢ Study of geological maps.
PHASE 2 Invasive Prospecting	➢ Drilling.	➢ Geologist ➢ Drilling Contractor	➢ Determine the location of diamond bearing bodies/gravel.
PHASE 3 Invasive Prospecting	➢ Bulk Sampling.	➢ Geologist ➢ Sampling Contractor	➢ Determine the grade per hundred tons. ➢ Calculate mining feasibility.

2. PLANNED INVASIVE PROSPECTING ACTIVITIES

(Information extracted from the approved Affordable Outcomes Environmental Management Plan)

The approved EMP notes that the invasive prospecting phase will be initiated with the drilling of 10 Reverse Cycle (RC) percussion holes (each with an approximate depth of 20 m). Where kimberlite bodies are found the holes will be further drilled with Diamond Core (DC) drilling (each with a maximum depth of 40 m). The cores extracted from the holes will be sampled and sent for laboratory analysis to determine the possible diamond content and approximate carats per hundred tons. It is proposed that the RC holes will be backfilled in the same sequence that the soil was extracted, while the DC holes will be cased with a lockable cap.

Following the drilling programme, bulk sampling of the preferable areas will be done to determine the commercially feasibility of each kimberlite body. This will be done through the separate testing of four bulk sampling areas each with an approximate sampling footprint of 20 m x 10 m x 5 m deep (±200 m²). The EMP notes that only one excavation will be open at a time, during the bulk sampling phase, to which access will be controlled.

Upon the opening of a new sampling pit/trench, the topsoil shall be removed from the earmarked area to be stockpiled (separately) next to the relevant block for later use during the rehabilitation of the area. The excavated gravel is then screened to remove the rough boulder material from the fine gravels. The latter is then transported to the processing plant while the rough material is used for initial backfilling.

At the processing plant the gravel is washed in a rotating pan to obtain a concentrate of heavy material. The lighter material is discarded with the puddle, which is a by-product of the diamond recovery processes and treated at a dewatering screen. The 'dry mud' will be used with the boulder material for initial backfilling while the excess water is recycled and stored within the evaporation dam. The concentrate obtained for the washing plant is then treated at the sorting/recovery plant where the diamonds are recovered and the surplus material is used for further back filling purposes. After backfilling occurred the topsoil shall be evenly spread over the area to finalize the rehabilitation.

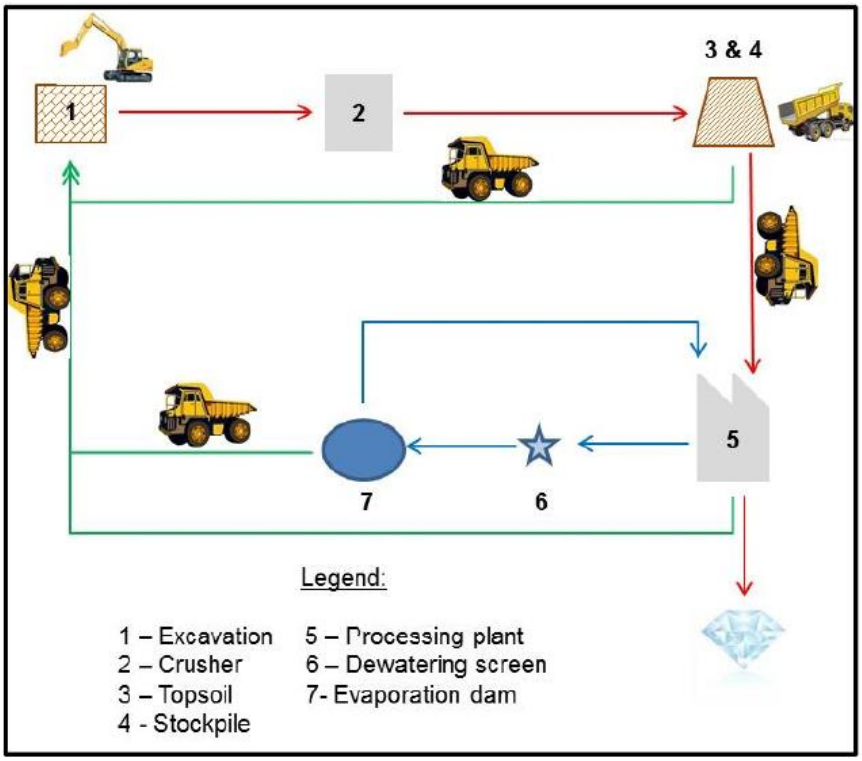


Figure 3: Schematic representation of the Bourevestinik methodology to be applied at the processing area (image obtained from the approved EMP).

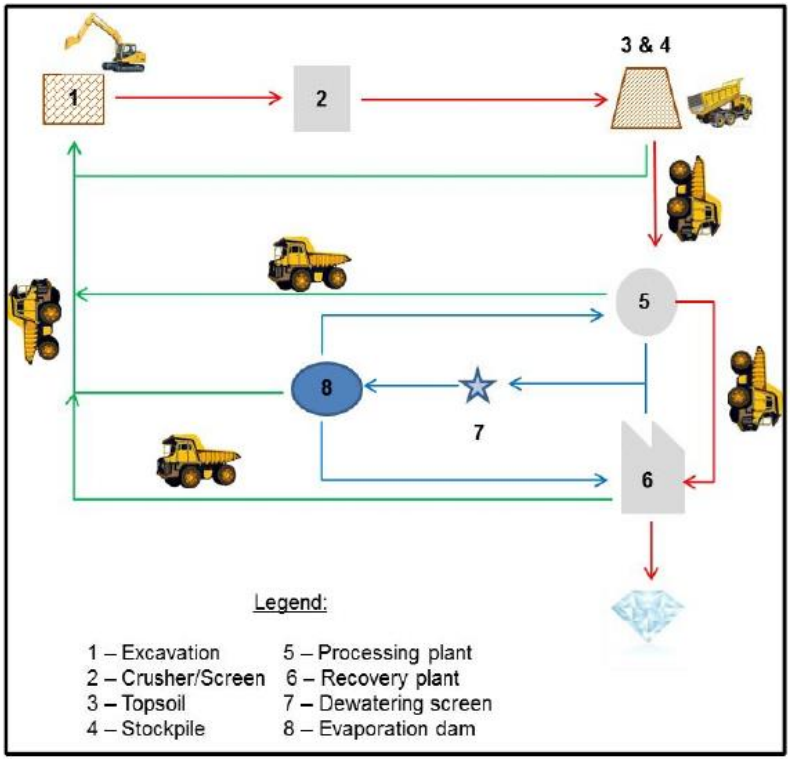


Figure 4: Schematic representation of the rotating pan plant (image obtained from the approved EMP).

2.1 Access Road

The existing farm roads will be used to access the prospecting footprint. The EMP mentions that it might be necessary for the scraping of a private access road to avoid degradation of roads used by the public to enter and move about on the Rooifontein farm. The EMP further notes that, as far as possible, internal farm roads will be used within the prospecting footprint. Should extra roads be needed, tracks will be scraped but no foreign material will be introduced to the surface of the tracks.

2.2 Topsoil, waste rock dumps and stockpiles

Where topsoil is removed it will be stored separate and safeguarded until the final rehabilitation phase. Waste rock dumps will be stored at the different sites were it was generated until it is used for backfilling during rehabilitation. Stockpiles will be stored near the processing plant for cost effective screening purposes.

2.3 Equipment and Infrastructure

The EMP notes that the facilities associated with the prospecting activity (invasive phase) may include the following:

- Chemical storage;
- Scrap yard;
- Diesel bay;
- Vehicle parking/storage lot;
- Vehicle maintenance yard;
- Chemical toilet facilities;
- Offices.

All storage, maintenance and offices will comply with the necessary regulations and specific mitigation measures will be implemented to minimize environmental risks.

It is proposed that the processing plant will include a crusher, scrubber, Bourevestnik X-ray plant, dewatering screens and/or 16 ft rotating pans. The processing activity may further make use of the following equipment:

- Excavators;
- Dumper trucks;
- Front-end loaders (FEL); and
- Sorting plant.

The size of the site camp's footprint, including the processing plant, is expected to be approximately 70 x 70 m (4 900 m²).

2.4 Water Use

The main water supply will be from one of the Kimberley Municipality's water works sites, but recycled water will also be used during the mineral processing activities. All excess water, after dewatering at the plant, will be stored within an evaporation dam for recycling purposes. The main purpose of the evaporation dam is to store and recycle water during the prospecting activities. The excess water will drain from the processing plant to the evaporation dams where it will be stored final rehabilitation.

It is expected that the proposed activity will require two evaporation dams of approximately 1 000 m³ each (20 x 10 x 5 m deep). During construction of these dams unused dump material and roughs will be used to build an

approved 45° wall. The dams will not be lined as the excess water is of non-polluting nature. The absence of lining material will enable clean cypher water to drain back into the ground water system.

The rehabilitation of the dams will be done once the excess water evaporated, and the dams are dry. The dried silt in the dams can be used as topsoil in areas where final rehabilitation is still needed.

2.5 Waste Management

Due to the nature of the project and the small scale of the activity, very little to no general waste is generated as a direct result of the prospecting activities. Any waste generated during the invasive phase, will be contained in refuse bins at the processing area that will regularly be removed to the Kimberley landfill site.

Likewise, very little (if any) hazardous waste is expected to be generated by the prospecting operation. Hazardous waste will mainly be the result of accidental spillages or breakdowns. Such contaminated areas will be cleaned up immediately (within two hours of the occurrence) and contaminated soil will be contained in designated hazardous waste containers that will be stored at the processing area until it is removed to a registered hazardous waste disposal facility.

SECTION 102 APPLICATION

3. SECTION 102 AMENDMENT PROPOSAL (OPERATIONAL PHASE)

As mentioned earlier, an area of ±5 ha was excluded from the PR Holder's prospecting footprint to allow for the mining permit application submitted by Wheatfields Investments 168 (Pty) Ltd. The DMRE issued an Environmental Authorisation (EA) for the mining permit application in November 2018, however the permit application was ultimately unsuccessful and no permit was issued.

In light of this, Affordable Outcomes CC, identified the need to incorporate the unsuccessful mining permit area (±5 ha) into their prospecting footprint seeing that the prospecting area already encloses the mining permit area (refer to Figure 1).

The addition of the ±5 ha area to the prospecting footprint will allow the PR Holder to add an additional bulk sampling site to the proposed invasive prospecting

activities. The prospecting of the additional bulk sampling site within the proposed ±5 ha area will take place in the same manner discussed above, and will therefore entail the disturbance of ±200 m² of the proposed ±5 ha area during the operational phase.

APPROVED AFFORDABLE OUTCOMES PROJECT & SECTION 102 APPLICATION (UPON APPROVAL)

4. DECOMMISSIONING PHASE

The decommissioning phase will entail the sealing and capping of the drill holes; removal of all the prospecting infrastructure and equipment from the processing area; refilling, topsoiling and landscaping of the bulk sampling pits/trenches and the decommissioning of the evaporation dams.

In summary, the decommissioning activities will consist of the following:

- Sealing and capping of all the boreholes;
- Filling of excavations with roughs, overburden and dried silt from the evaporation dams;
- Removal of all prospecting infrastructure and equipment from site;
- Ripping and landscaping of all compacted areas; and
- Replacing of topsoil and seeding of area (if applicable).

The PR Holder will also comply with the minimum closure objectives as prescribed DMRE and detailed below:

- Rehabilitation of the excavated area (bulk sampling area):

  The excavated area must serve as a final depositing area for the placement of overburden. Rocks and coarse material removed from the excavation must be dumped into the excavation.

  No waste may be permitted to be deposited in the excavations.

  Once overburden, rocks and coarse natural materials has been added to the excavation and it was profiled with acceptable contours and erosion control measures, the topsoil previously stored must be returned to its original depth over the area.

The area must be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from closure of the site.

If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager (DMRE) may require that the soil be analysed and any deleterious effects on the soil arising from the prospecting operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

- Rehabilitation of the Office/Site Camp/Processing Area:

  On completion of operations, all buildings, structures or objects on the camp/office site must be dealt with in accordance with section 44 of the MPRDA, 2002.

  Where office/camp sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface must be scarified or ripped.

  Areas contain French drains must be compacted and covered with a final layer of topsoil to the height of 10 cm above the surrounding ground surface.

  The site shall be seeded with a local or adapted seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from closure of the site.

  If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager (DMRE) may require that the soil be analysed and any deleterious effects on the soil arising from the prospecting operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

  A photographic record must be kept of all the rehabilitated areas.

- Final Rehabilitation:

  Final rehabilitation of the surface area shall entail landscaping, levelling, maintenance, and clearing of invasive plant species (if applicable). All equipment, plant and other items used during the prospecting period will be removed from site (section 44 of the MPRDA, 2002). Waste material of any description will be removed from the prospecting area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site. The management of invasive plant species will be done (if applicable) in a sporadic manner during the life of the activity. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) will be eradicated from the site. Final rehabilitation shall be completed within a period specified by the Regional Manager.

Once the prospecting area was rehabilitated the PR Holder is required to submit a closure application to the Department of Mineral Resources and Energy in accordance with section 43(4) of the MPRDA, 2002 that states: *"An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated in subsection (3) and must be accompanied by the prescribed environmental risk report".* The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998 (as amended).

The prospecting footprint falls within the boundaries of the Rooifontein Game Farm, and upon closure the land use will revert back to the landowner and lawful occupiers.

e) Policy and Legislative Context

Table 5: Policy and Legislative Context.

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 AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).	Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – Storm water mitigation & *Management of invader plant species*.	The mitigation measures proposed for the site includes specifications of the CARA, 1983.
Mine Health and Safety Act, 1996 (Act No 29 of 1996) read together with applicable amendments and regulations thereto including relevant OHSA regulations.	Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Management of Health and Safety Risks.*	The mitigation measures proposed for the site includes specifications of the MHSA, 1996
Mineral and Petroleum Resources Development Act, 2002, (Act No. 28 of 2002) read together with applicable amendments and regulations thereto. ➢ Section 102 amendment application.	Part A1(d) Description of the scope of the proposed overall activity.	Application for a Section 102 amendment application sumitted to DMRE-FS. Ref No: FS 30/5/1/1/2/10261 PR.
National Environmental Management Act,1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended by GNR 326 effective 7 April 2017) ➢ GNR 327 Listing Notice 1 Activity 20 ➢ GNR 327 Listing Notice 1 Acitivty 22	Part A1(d)(i) Listing and specified activities.	Application for a Part 2 amendment of the EMPR submitted to DMRE-FS. Ref No: FS 30/5/1/1/2/10261 PR.
National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) read together with applicable amendments and regulations thereto.	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity - *Biological Environment* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Management of invader plant species*.	The mitigation measures proposed for the site includes specifications of the NEM:BA, 2004.
National Environmental Management: Waste Act, 2008 (Act No 59 of 2008) read together with applicable amendments and regulations thereto.	Part A(1)(d)(ii) Description of the activities to be undertaken	The mitigation measures proposed for the site take into account the NEM:WA.

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 AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
NEM:WA, 2008: National norms and standards for the storage of waste (GN 926)		
National Heritage Resources Act. 1999 (Act No 25 of 1999).	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – *Human Environment* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Archaeological, Heritage and Palaeontological Aspects.* Part A(1)(t)(i)(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.	The mitigation measures proposed for the site includes specifications of the NHRA, 1999.
National Water Act, 1998 (Act No 36 of 1998) read together with applicable amendments and regulations thereto.	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – *Hydrology.* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk. Part B(1)(d)(iii) Has a water use licence been applied for?	The mitigation measures proposed for the site includes specification of the NWA, 1998.
Public Participation Guideline in terms of the NEMA EIA Regulations	Part A(1)(h)(ii) Details of the Public Participation Process Followed	Public participation was conducted in accordance with the guidelines published in terms of the NEMA EIA Regulations.

f) Need and desirability of the proposed activities.

(Describe Methodology or technology to be employed, including the type of commodity to the prospected/mined and for a linear activity, a description of the rout of the activity)

The approved Affordable Outcomes project on the Remaining Extent of the farm Rooifontein No 1722 allows the holder to prospect an area of 333.0435 ha for diamonds (alluvial and in kimberlite). As mentioned earlier, the prospecting application necessitated an exclusion area of ±5 ha that was earmarked for a mining permit applied for by

Wheatfields Investments 168 (Pty) Ltd. Upon the failure of the Wheatfields Investments 168 (Pty) Ltd mining permit application, the PR Holder identified the need to incorporate the ±5 ha area into the approved prospecting footprint as it will (upon approval of the S102 application) allow the bulk sampling of an additional area on the property that will contribute knowledge towards the feasibility of the project.

The DMRE granted Wheatfields Investments 168 (Pty) Ltd and environmental authorisation (EA) for the earmarked ±5 ha area in November 2018 whereby the holder was authorised to undertake the NEMA EIA listed activities associated with the mining of the footprint area that would have entailed the following:

- Fencing of the ±5 ha footprint with a 2.5 m fence and lockable gate;
- Clearing of an area of 4 556 m² for office, ablution, storage site and other mining related activities;
- Mining the area from the open pit in an almost circular pattern in 10 m wide blocks that would have been screened to remove the boulder material;
- Transporting the screened material to an external contractual plant in Kimberley for mineral processing and diamond recovery.

The abovementioned EA notes that: "*In view of the above, the NEMA principles, compliance with the conditions stipulated in this EA, and compliance with the EMPr, the competent authority is satisfied that the proposed listed activity/ies will not conflict with the general objectives of Integrated Environmental Management stipulated in Chapter 5 of NEMA, and that any potentially detrimental environmental impacts resulting from the listed activity/ies can be mitigated to acceptable levels*…."

This S102 application entails the incorporation of the abovementioned ±5 ha area into the approved prospecting footprint of Affordable Outcomes CC that will allow the prospecting of the area for diamonds. The bulk sampling activities proposed on the ±5 ha area will entail the disturbance of ±200 m² (as described earlier). This constitute a 99% decrease in the proposed alteration of the earmarked footprint (compared to the mining of the area), and therefore highly increasing the desirability of the proposed S102 application. The fact that the approved PR footprint already encompass the ±5 ha area further contributes to motivating the proposed S102 application.

g) Motivation for the overall preferred site, activities and technology alternative.

SECTION 102 APPLICATION

Project Alternative 1 was identified as the preferred and only viable site alternative based on the following:

- The approved PR footprint encompasses the proposed ±5 ha area and therefore the extension area can easily be incorporated into the prospecting programme;
- The addition of the extension area will allow the PR Holder to add another bulk sampling site to the prospecting programme.
- The DMRE issued an EA for the mining of the proposed extension area, thereby confirming that no sensitive areas were identified that deters mining/mining related activities;
- Upon closure, the land use of the prospecting area can be returned to the landowner and lawful occupiers.

The environmental impact assessment process assessed the feasibility of the proposed alternative to identify fatal flaws that are deemed as severe as to prevent the activity continuing, or warrant another site or project alternative. The outcome of the assessment showed that should the mitigation measures and monitoring programmes proposed in this document be implemented, no fatal flaws could be identified that prevents the activity continuing. In light of the above, the approved EMPR of the prospecting proposal was updated to incorporate the project related mitigation measures and monitoring programmes identified during this assessment process.

h) Full description of the process followed to reach the proposed preferred alternatives within the site.

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

i) Details of the development footprint alternatives considered.

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

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

Site Alternatives:

DMRE approved the prospecting of 333.0435 ha of the Remaining Extent of the farm Rooifontein No 1722 (formerly known as Speculatie No 217) in 2020. The earmarked

±5 ha area (to which this S102 application is applicable) is enclosed by the abovementioned 333 ha prospecting right (refer to Figure 1), and therefore no site alternatives apply to the current prospecting operation nor the S102 application.

Project Alternatives:

***Status Quo* / No-go Alternative:**

The approved PR right allows for the prospecting of ±333 ha of the abovementioned property through the drilling of RC- and DC boreholes that will identify bulk sampling areas for more in-depth exploration.

Should the S102 application be rejected the PR Holder will not be able to prospect the excluded ±5 ha area on the property, and the prospecting programme will only entail the drilling of ±10 RC boreholes and the bulk sampling of 4 pits/trenches as discussed above.

The *status quo* / no-go alternative was not deemed the preferred option as:

- the addition of the ±5 ha area will allow the PR Holder to add a bulk sampling site to the prospecting programme;
- the proposed ±5 ha area is encompassed by the approved prospecting area and excluding it from the footprint will cause a break in the prospecting data; and
- an EA was already approved for the mining of the area thereby confirming that no sensitive areas were identified that deters mining/mining related activities.

Project Alternative 1 (P1) (Preferred and Only Project Alternative):

Project Alternative 1 therefore entails the prospecting of the proposed 337.9299 ha (333.0435 ha + 4.8864 ha) footprint area within the GPS coordinates as listed in Table 3 (above) through percussion drilling and bulk sampling.

Project Alternative 1 was identified during the assessment phase of the environmental impact assessment, by the PR Holder and project team, as the **preferred and only project alternative** due to the following:

- The approved PR footprint encompasses the proposed ±5 ha area and therefore the extension area can easily be incorporated into the prospecting programme;
- The addition of the extension area will allow the PR Holder to add another bulk sampling site to the prospecting programme.

- The DMRE issued an EA for the mining of the proposed extension area, thereby confirming that no sensitive areas were identified that deters mining/mining related activities;
- Upon closure, the land use of the prospecting area can be returned to the landowner and lawful occupiers.

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.

1. APPROVED AFFORDABLE OUTCOMES PROJECT

Prior to the approval of the Affordable Outcomes prospecting right, a public participation process was followed whereby the I&AP's and stakeholders were informed of the project and invited to comment. Notification letters to inform the identified interested and/or affected parties of the planned prospecting activities were sent via registered postage. Two newspaper advertisements were placed in the DFA and Volksblad to inform the general public and invite them to register as interested and/or affected parties and a public meeting was held. A copy of the Report on the Result of Consultation that outlines the public participation process that was followed during the initial PR application is attached as Appendix G to this report.

2. SECTION 102 APPLICATION

Regulation 32(1)(a)(aa) of the NEMA: EIA Regulations, 2017 stipulates that an applicant (for a Part 2 amendment) must submit a report reflecting the changes to the EMPR that has been subjected to a public participation process. In light of this, the relevant stakeholders and I&AP's were informed of the S102 amendment application and proposed inclusion of the earmarked ±5 ha area, by means of an advertisement in the DFA (Diamond Fields Advertiser) and on-site notices in Afrikaans and English placed at the entrance to the property. A notification letter inviting comments on the DBAR and EMPR over a 30-days commenting period (ending 04 December 2020) will be send directly to the landowner, lawful occupier, neighbouring landowners, stakeholders and any other I&AP that may register on the project. The comments received on the DBAR and EMPR will be incorporated into the final BAR and EMPR to be submitted to the DMRE for consideration and

decision taking. Thus far, the following I&AP's and stakeholders will be invited to comment on the DBAR and EMPR:

Table 6: List of the I&AP's and stakeholders that will be notified of the S102 amendment application.

STAKEHOLDERS
➢ Department of Agriculture and Rural Development; ➢ Department of Economic Small Business Development, Tourism and Environmental Affairs; ➢ Department of Labour; ➢ Department of Police, Roads and Transport; ➢ Department of Public Works and Infrastructure; ➢ Department of Water and Sanitation; ➢ Lejweleputswa District Municipality; ➢ Sol Plaatje Local Municipality; ➢ South African Heritage Resources Agency; ➢ Tokologo Local Municipality: Ward Councillor; and ➢ Tokologo Local Municipality.
LANDOWNERS, SURROUNDING LANDOWNERS & INTERESTED AND AFFECTED PARTIES
➢ De Beers consolidated mining (Pty) Ltd / Ekapa Minerals (Pty) Ltd - Remaining Extent of the farm Rooifontein No 1722 ➢ Karreeboom Kimberley (Pty) Ltd - Portion 0 of Farm No 1716 (known as Kareeboom) ➢ Kadi Trust - Portion 3 of the farm New Klippiespan No 1635 ➢ Mr BW Mopharing - Portion 2 and 10 of the farm New Klippiespan No 1635 ➢ Mr S King - Portion 8 of the farm New Klippiespan No 1635 ➢ Mr JJ Reichert - Portion 1 of the farm Rooifontein No 211 ➢ AAA Mining CC - Portion 1 of the farm Speculatie No 217 ➢ Zuikerkop Country & Game Lodge - Portion 0 of Farm No 1719 (known as Olifantsfontein) ➢ Zuikerkop Trust - Portion 0 of Farm No 1717 (known as Uitzigt) ➢ Transnet Ltd - Portion 1 of the farm Benauwdheidfontein No 124 ➢ Crown Resources (Pty) Ltd - Portion 0 of Farm 1714 (known as Petra) ➢ De Beers Consolidated Mining (Pty) Ltd - Portion 0 (Remaining Extent) of the farm Benauwdheidfontein No 124 ➢ Ekapa Minerals (Pty) Ltd - Portion 0 of Farm No 212 (known as Rietpan) ➢ Mr AJ Thompson - Portion 0 of Farm No 211 (known as Kareeboom) ➢ Rooifontein Wildlife Club

iii) Summary of issues raised by I&APs

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

Table 7: Summary of issues raised by IAPs

Interested and Affected Parties **List the name of persons consulted in this column, and** **Mark with an X where those who must be consulted were in fact consulted**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
AFFECTED PARTIES	**X**				
Landowner/s					
De Beers Consolidated Mining (Pty) Ltd / Ekapa Minerals (Pty) Ltd ➢ Remaining Extent of the farm Rooifontein No 1722 (formerly known as Speculatie No 217)	X	Any comments received from the landowner (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Lawful occupier/s of the land					
Rooifontein Wildlife Club	X	Any comments received from the Rooifontein Wildlife Club (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Landowners or lawful occupiers on adjacent properties	**X**	-	-	-	-
Karreeboom Kimberley (Pty) Ltd ➢ Portion 0 of Farm No 1716	X	Any comments received from Karreeboom Kimberley (Pty) Ltd (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Kadi Trust ➢ Portion 3 of the farm New Klippiespan No 1635	X	Any comments received from Kadi Trust (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Mr BW Mopharing ➢ Portion 2 of the farm New Klippiespan No 1635 ➢ Portion 10 of the farm New Klippiespan No 1635	X	Any comments received from Me Mopharing (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Mr S King	X	Any comments received from Mr King (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			

Interested and Affected Parties List the name of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
➢ Portion 8 of the farm New Klippiespan No 1635					
Mr JJ Reichert ➢ Portion 1 of the farm Rooifontein No 211	X	Any comments received from Mr Reichert (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
AAA Mining CC ➢ Portion 1 of the farm Speculatie No 217	X	Any comments received from AAA Mining CC (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Zuikerkop Country & Game Lodge ➢ Portion 0 of Farm 1719		Any comments received from Zuikerkop Country & Game Lodge (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Zuikerkop Trust ➢ Portion 0 of Farm 1717		Any comments received from Zuikerkop Trust (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Transnet Ltd ➢ Portion 1 of the farm Benauwdheidfontein 124		Any comments received from Transnet Ltd (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Crown Resources (Pty) Ltd ➢ Portion 0 of Farm 1714		Any comments received from Crown Resources (Pty) Ltd (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
De Beers Consolidated Mining (Pty) Ltd ➢ Portion 0 (Remaining Extent) of the farm Benauwdheidfontein 124		Any comments received from De Beers Consolidated Mining (Pty) Ltd (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Ekapa Minerals (Pty) Ltd ➢ Portion 0 of Farm 212		Any comments received from Ekapa Minerals (Pty) Ltd (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Mr AJ Thompson		Any comments received from Mr Thompson (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			

Interested and Affected Parties List the name of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
➢ Portion 0 of Farm 211					
Municipal councillor					
Tokologo Local Municipality: Ward Councillor	X	Any comments received from the ward councillor (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Municipality					
Tokologo Local Municipality (TLM)	X	Any comments received from the TLM (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA					
Department of Public Works and Infrastructure (DPWI)	X	Any comments received from the DPWI (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Department of Police, Roads and Transport (DPRT)	X	Any comments received from DPRT (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Communities	No community were identified within the study area.				
Dept. Land Affairs	Any comments received from the Department of Land Affairs (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.				
Traditional Leaders	N/A	N/A	N/A	N/A	N/A
Dept. Environmental Affairs					

Interested and Affected Parties List the name of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Department of Economic Small Business Development, Tourism, and Environmental Affairs (DEDTEA)	X	Any comments received from the DEDTEA (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Other Competent Authorities affected					
Department of Agriculture and Rural Development (DARD)	X	Any comments received from the DARD (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Department of Water and Sanitation (DWS)	X	Any comments received from the DWS (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Department of Labour (DoL)	X	Any comments received from the DoL (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Sol Plaatje Local Municipality (SPLM)	X	Any comments received from the SPLM (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Lejweleputswa District Municipality (LDM)		Any comments received from the LDM (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
South African Heritage Resources Agency (SAHRA)	X	Any comments received from the SAHRA (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
OTHER AFFECTED PARTIES					
N/A					
INTERESTED PARTIES					
N/A					

iv) The Environmental attributes associated with the alternatives.

(The environmental attributes 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)

This section describes the biophysical, cultural and socio-economic environment that may be affected, and the baseline conditions which are likely to be affected by the prospecting operation.

PHYSICAL ENVIRONMENT

CLIMATE

The climate of both the Boshof as well as Kimberley regions were included in this report as the application area is situated in the Free State Province, but in close proximity to the town of Kimberley.

The accepted average rainfall of the Boshof/Kimberley area is in the region of 300 mm. However, according to World Weather Online (following chart), the measured rainfall average for 2019 was ±37.2 mm (Boshof & Kimberley). As shown in the following charts the areas received the lowest rainfall during the winter months (June – August) and the highest in the summer (March – April).

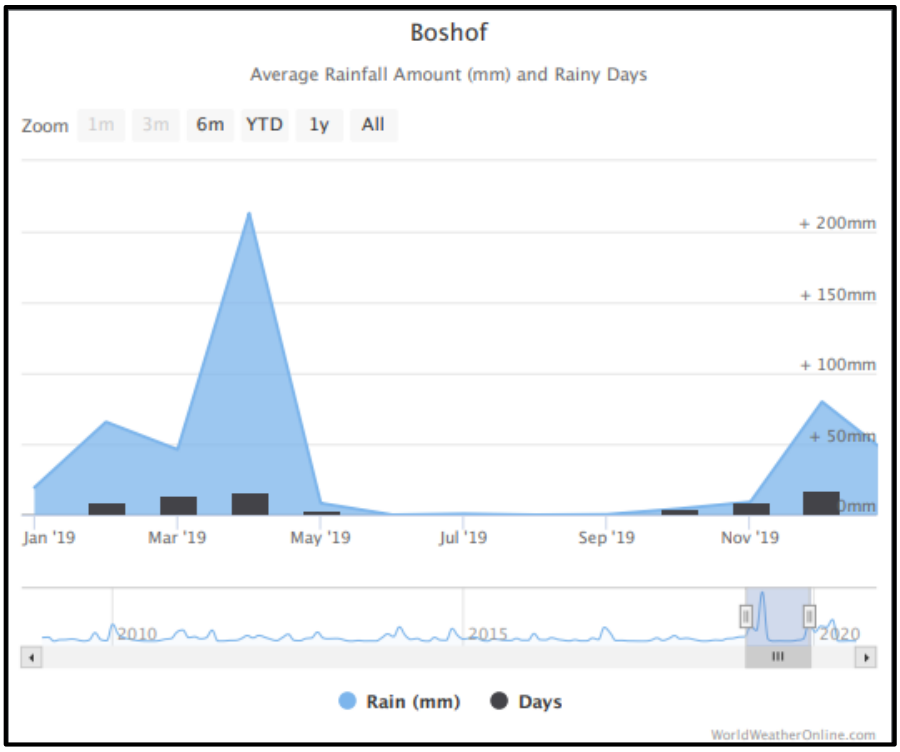


Figure 5: Average rainfall amount and rainy days of the Boshof region for 2019 (Chart obtained from World Weather Online).

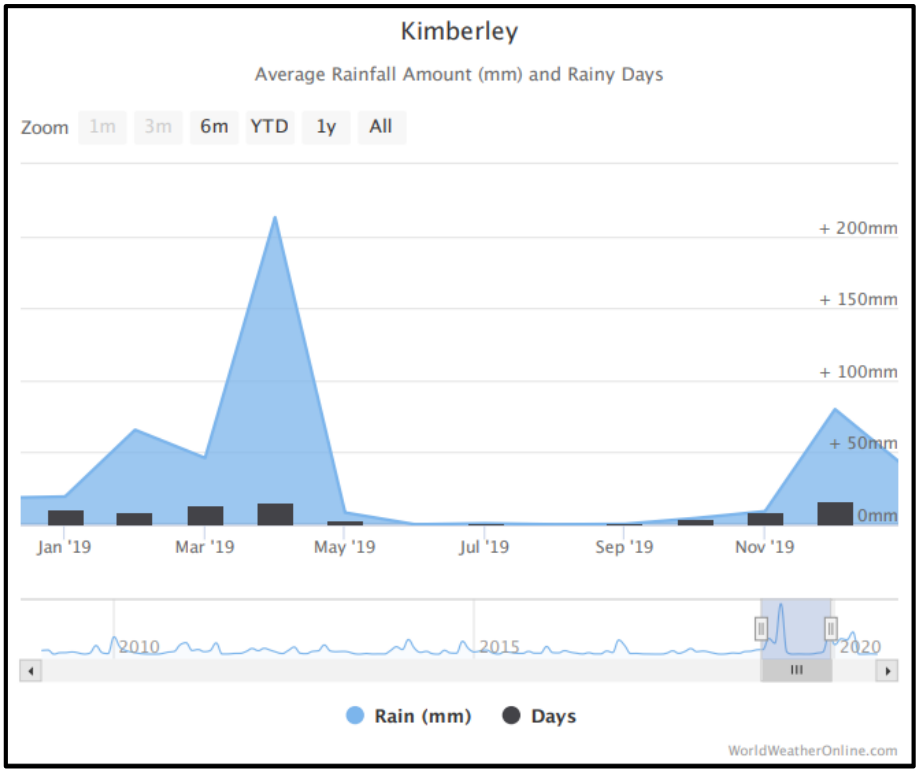


Figure 6: Average rainfall amount and rainy days of the Kimberley region for 2019 (Chart obtained from World Weather Online).

The 2019 monthly distribution of average daily maximum and minimum temperatures of Boshof and Kimberley are shown in the following charts. The region is the coldest during July and the warmest in January.

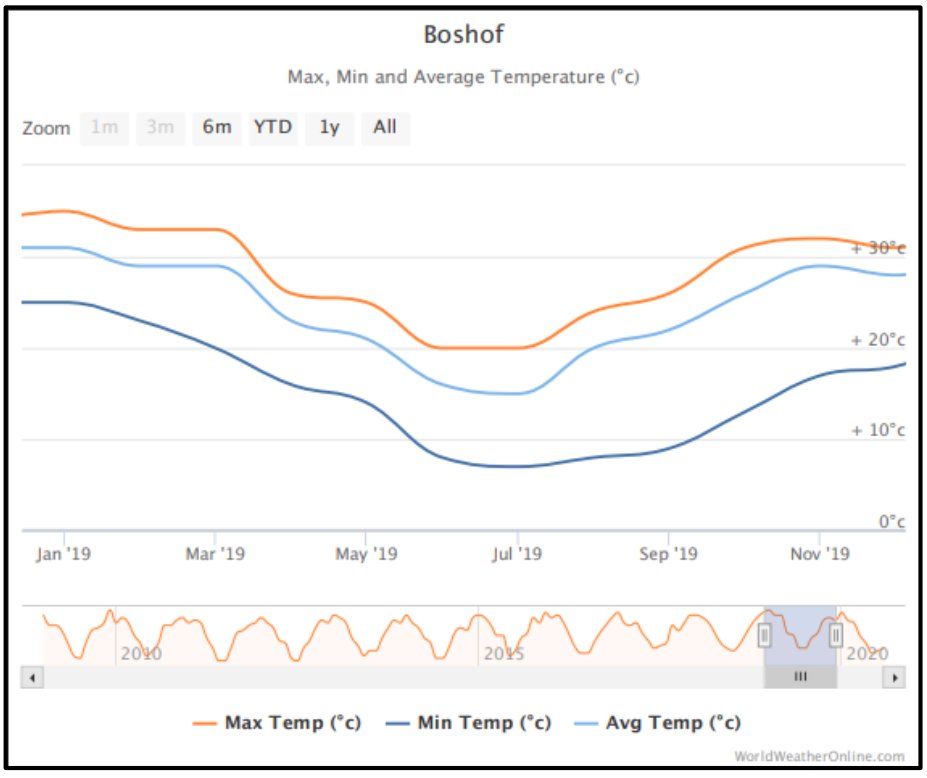


Figure 7: Statistical representation of the average, maximum, and minimum temperatures of the Boshof region (chart obtained from World Weather Online).

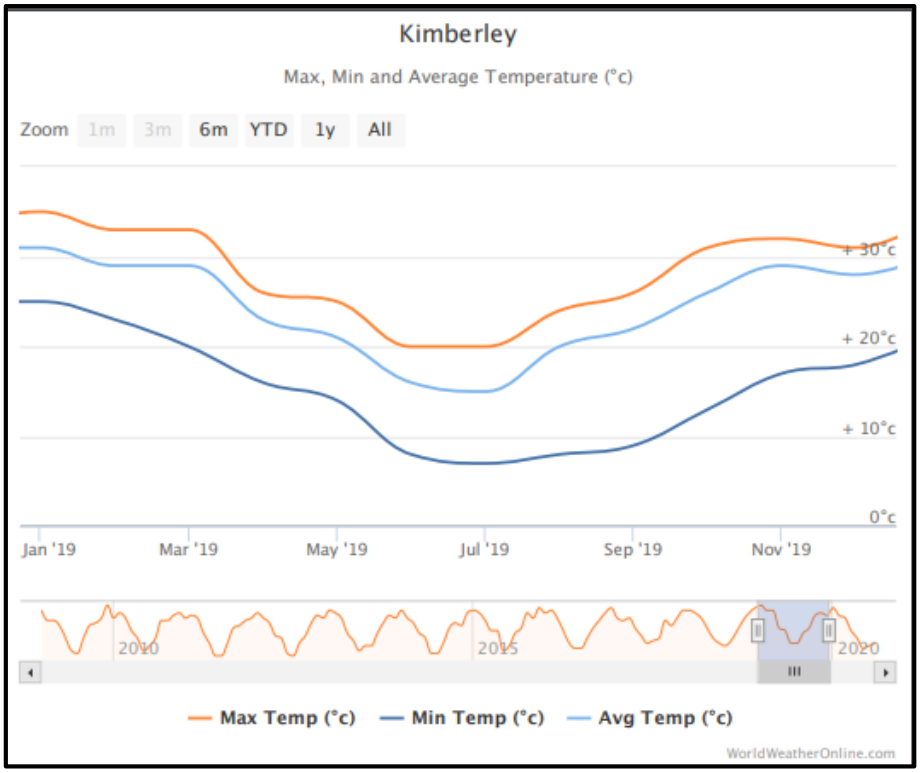


Figure 8: Statistical representation of the average, maximum, and minimum temperatures of the Kimberley region (chart obtained from World Weather Online).

The dominant wind direction of the Kimberley/Boshof region is fairly constant ranging from north to west-north-west, with the average wind speed being ±6 knots (11.11 km/h) as shown in the figure below (measured at the Kimberley Airport).

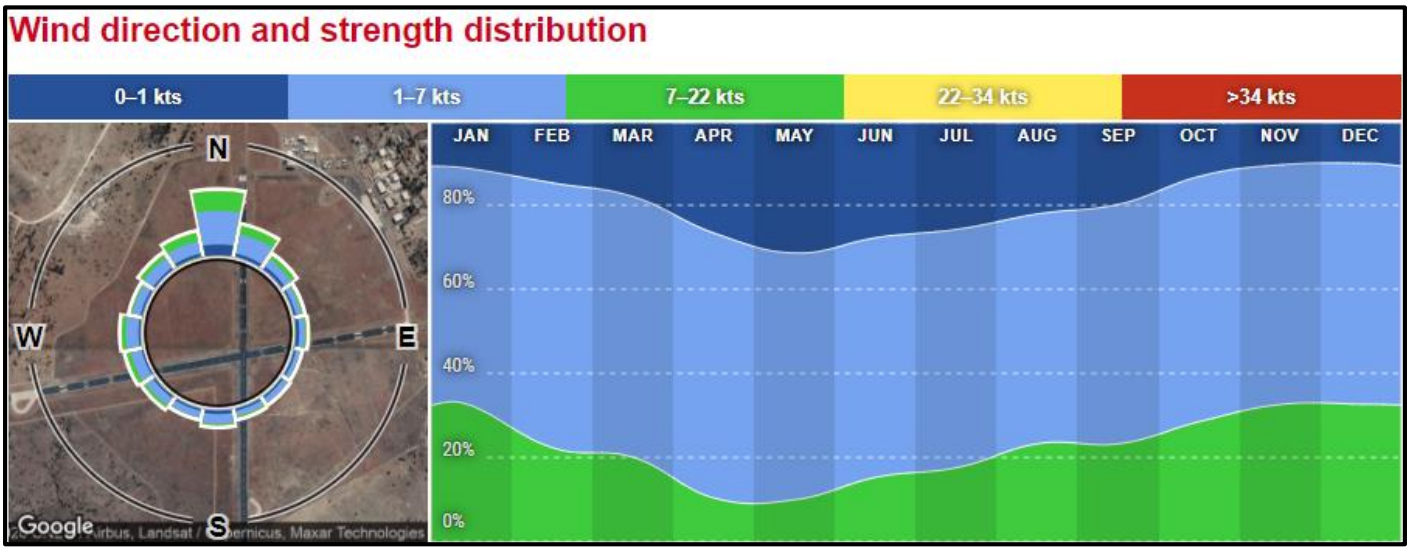


Figure 9: Image showing the dominant wind direction (first panel) and average wind speed over a 12 month period for the Kimberley area. (Image obtained from www.windfinder.com/windstatistics/kimberley)

TOPOGRAPHY

(Information extracted from the Wetland Identification and Delineation Report compiled by FGA Mining Consultants, 2016, attached as Appendix H)

The topography of the greater study area is shown in the figure below. The area forms part of the inland plateau of South Africa with elevations generally at about 1 230 amsl.

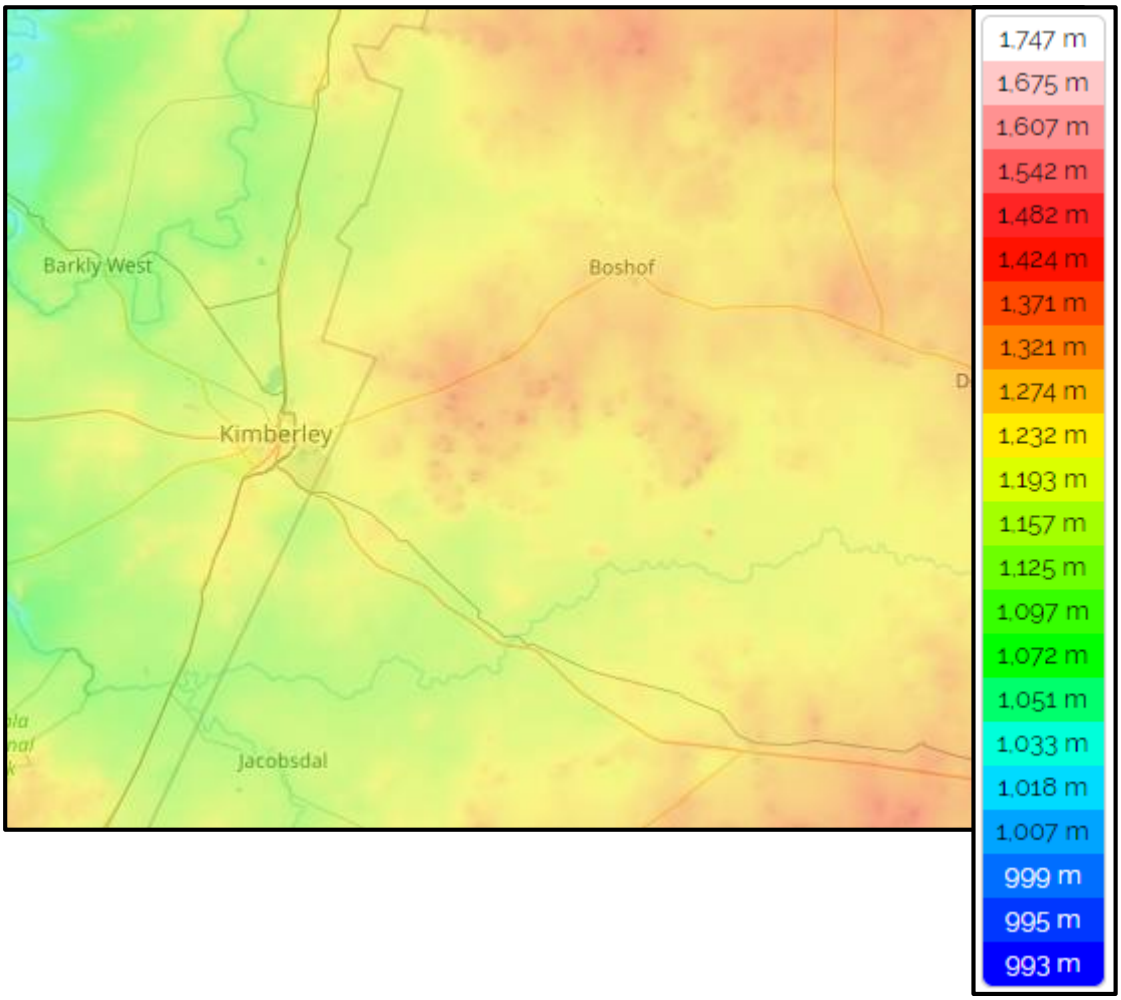


Figure 10: Map showing the topography of the greater Kimberley – Boshof area (image obtained from www.en-za.topographic-map.com/maps/qwpq/South-Afica/).

The topography of the prospecting area is relative flat with a gradual increase from the northern boundary at ±1218 amsl up the rise (1225 amsl) that is more or less in the middle of the earmarked footprint. From the highest point of the rise the topography again declines in a south-eastern direction towards the lowest point (±1210 amsl) along the southern boundary as shown in the figure below.

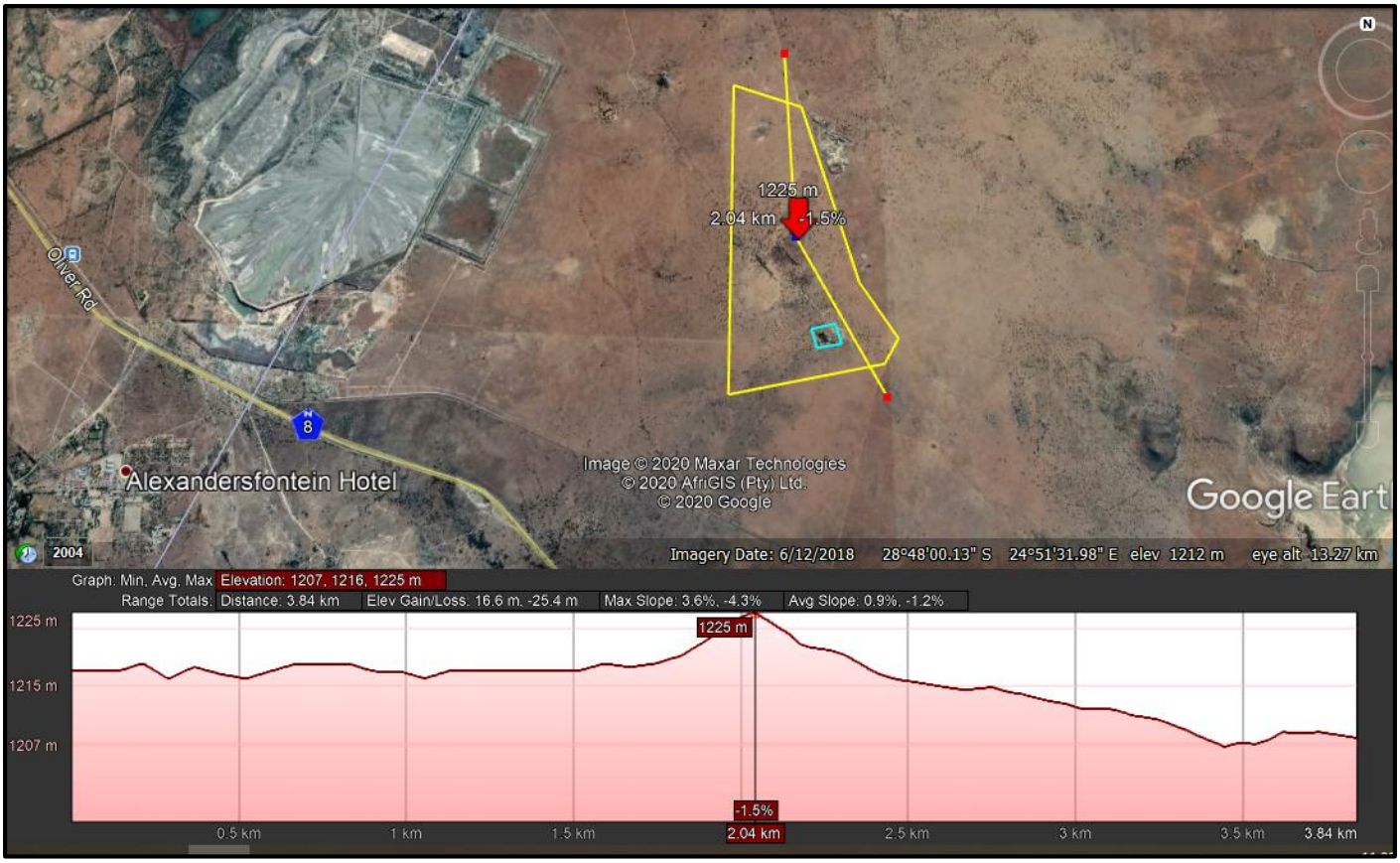


Figure 11: Elevation profile of the prospecting area (yellow polygon) (image obtained from Google Earth).

VISUAL CHARACTERISTICS

The Remaining Extent of the farm Rooifontein No 1722 is zoned for agricultural use with a mostly undisturbed footprint intersected with historic prospecting/mining areas. The prospecting footprint also falls within the boundaries of Rooifontein Game Farm (leased by the Rooifontein Wildlife Club) that is used as a tourist attraction as well as game farming, hunting, and other recreational activities. Active mining operations border the prospecting area to the west, while the areas to the north, east and south is mainly used for agricultural purposes. Due to the flat topography of the area some parts of the prospecting footprint is visible from the R64 Boshof – Kimberley road passing the site to the north as the road lays at a higher altitude.

AIR AND NOISE QUALITY

Due to the low rainfall, the air quality of the study area is characterised as being dry, arid and dusty at times. Dust is the most important pollutant given the area's rural character predominantly affected by the nearby mining operations. The noise ambiance of the study area is classified as ambient rural or pastoral with noise levels mainly affected by traffic along the R64 and the bordering mining related operations.

GEOLOGY AND SOIL

(Information extracted from the Prospecting Work Programme of Affordable Outcomes CC)

An Olifantsfontein Kimberlite Pipe occurs on the Remaining Extent of the farm Rooifontein No 1722, situated on the outskirts of Kimberley in the privately owned Rooifontein Game Farm. The kimberlite was discovered in the 1880's. A large excavation with accompanying dumps is evidence of past prospecting and mining activities. Archived documents revealed that diamonds were recovered from the kimberlite in the early 1880's.

The stratigraphy of the Kimberley and immediate surrounding area is relatively simple. The bedrock consists of +2 700-million-year-old Ventersdorp lavas. Prior to the Karoo period the Vaal River cut a network of channels closely approximating the present floodplain. These channels were then utilized by the subsequent glaciers and were finally filled with Dwyka tillites and shales. Magmatic intrusions are in the form of Karoo-aged dolerite sills and dykes and Cretaceous-aged kimberlites.

Alluvium and surficial deposits that are generally made up of red Hutton sand and clayey silt and sand cover a large portion of the project area. The Olifantsfontein Kimberlite is a Bilobate Group 1 Kimberlite, which has intruded at the contact of Ecca Shales of the Karoo Sequence and the Karoo-aged dolerite sill.

The Olifantsfontein Kimberlite is covered by up to 1 m of reddish brown soil. Below the soil is a 1 to 3 m thick layer of calcrete which graded into calcretised kimberlite and then into highly weathered yellowish kimberlite.

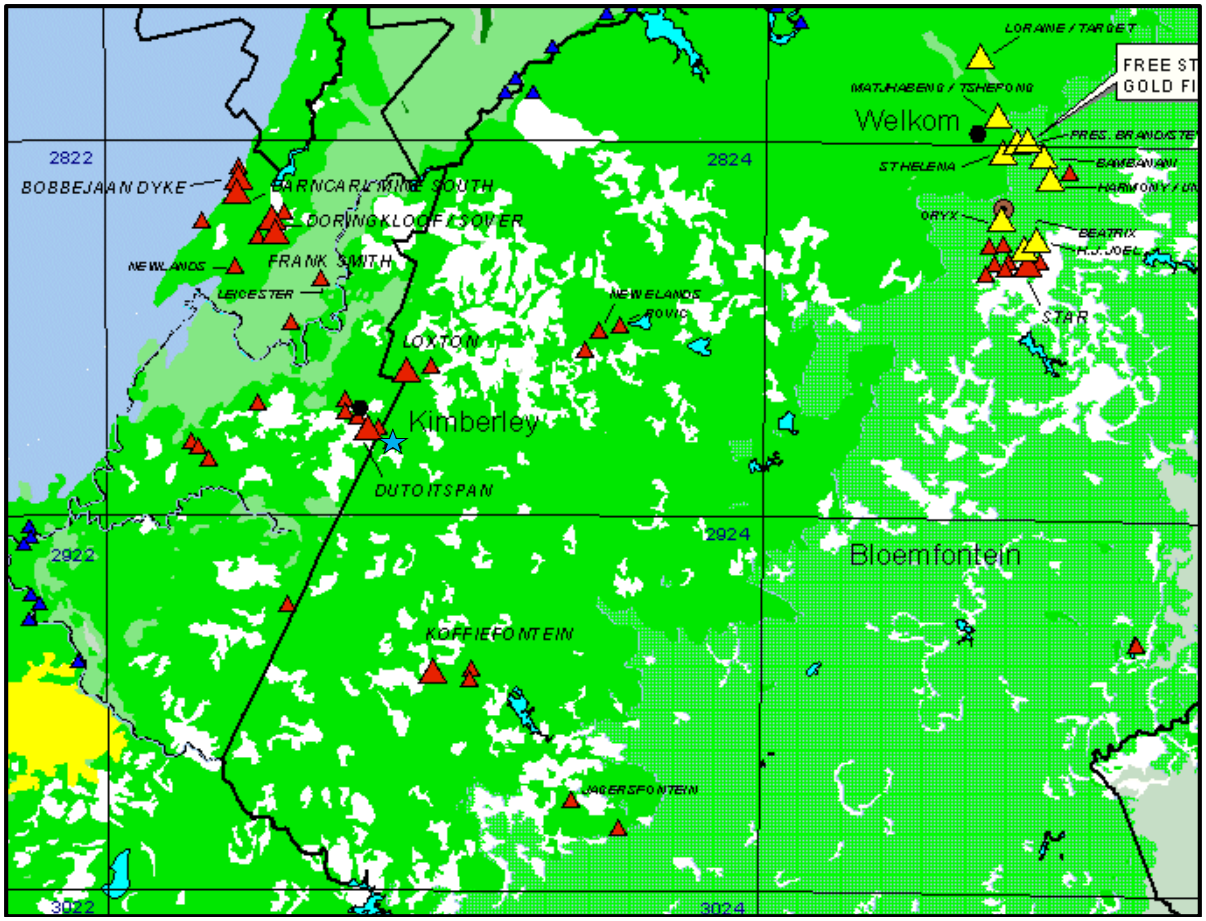


Figure 12: Simplified geology of the study area (blue star) where the green shading indicates the Dwyka and Ecca Groups, the white shows dolerite intrusions and the red triangles indicate known areas with diamond in kimberlite (image obtained from the Simplified Geology and Selected Mineral Deposits – South Africa, Lesotho and Swaziland).

HYDROLOGY

The prospecting area falls within the Riet-Modder Sub-Water Management Area (SWMA) which is managed as part of the Upper Orange Water Management Area (WMA ID 12). The Upper Orange WMA is described as that part of the Orange River upstream of Vanderkloof Dam and downstream of the Welbedacht Dam and the Lesotho Border at Oranjedraai.

According to the National Wetlands and NFEPA map of SANBI, no FEPA (Freshwater Priority Area) of conservation importance extends over the study area (see figure below). The NFEPA map did not show any drainage lines or other watercourses of importance traversing the study area.

Also refer to *Part A(1)(h)(iv)(c) Description of specific environmental features and infrastructure on the site – Site Specific Hydrology.*

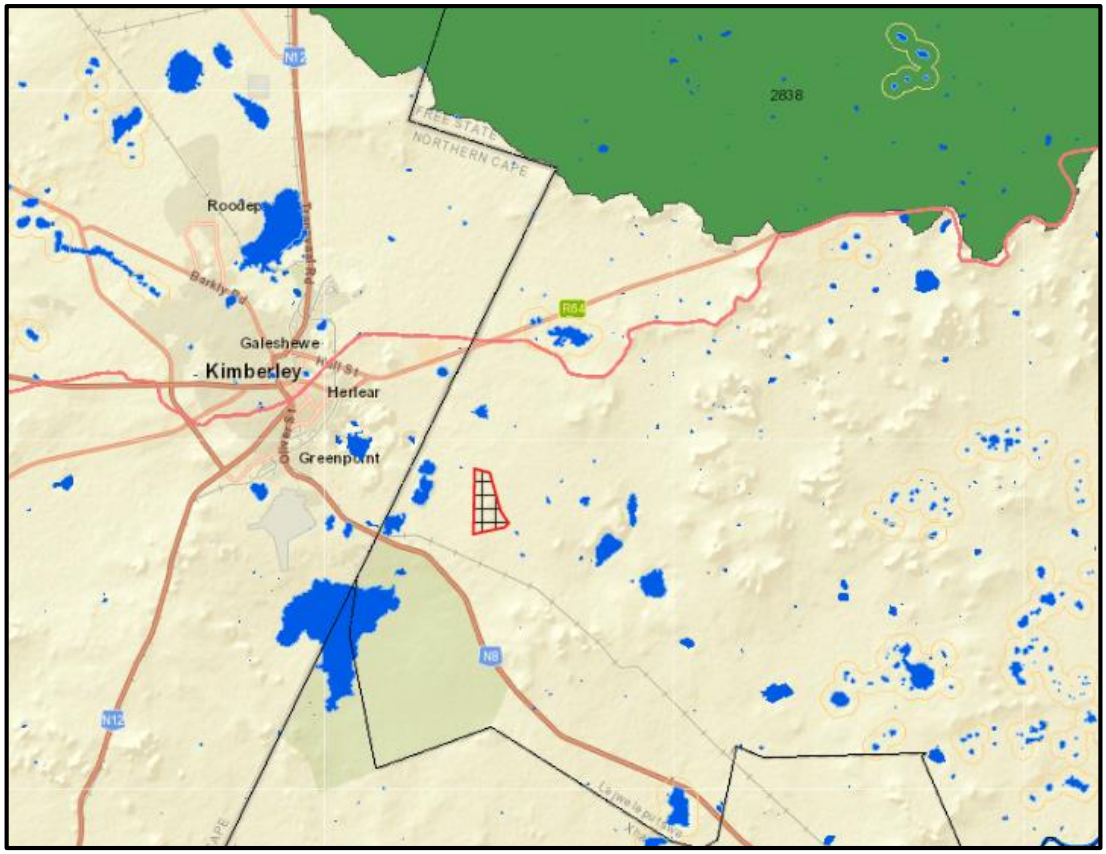


Figure 13: Map showing the position of the prospecting area (crossed polygon) in relation to the nearest FEPA (dark green shaded area to the north). (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

BIOLOGICAL ENVIRONMENT

MINING AND BIODIVERSITY

(Information extracted from the Mining and Biodiversity Guideline: Mainstreaming Biodiversity into the Mining Sector, Department of Environmental Affairs, Department of Mineral Resources and Energy, Chamber of Mines, 2013)

The Mining and Biodiversity Guideline, compiled by the South African Mining and Biodiversity Forum (SAMBF) provides the mining and prospecting sector with a practical, user-friendly manual for integrating biodiversity considerations into planning processes and managing biodiversity during the developmental and operational phases of a mine/prospecting area, from exploration through to closure.

When the prospecting footprint is layered over the Mining and Biodiversity Map, as shown in the figure below, the footprint lays between biodiversity areas of high important, but does not extend into it.

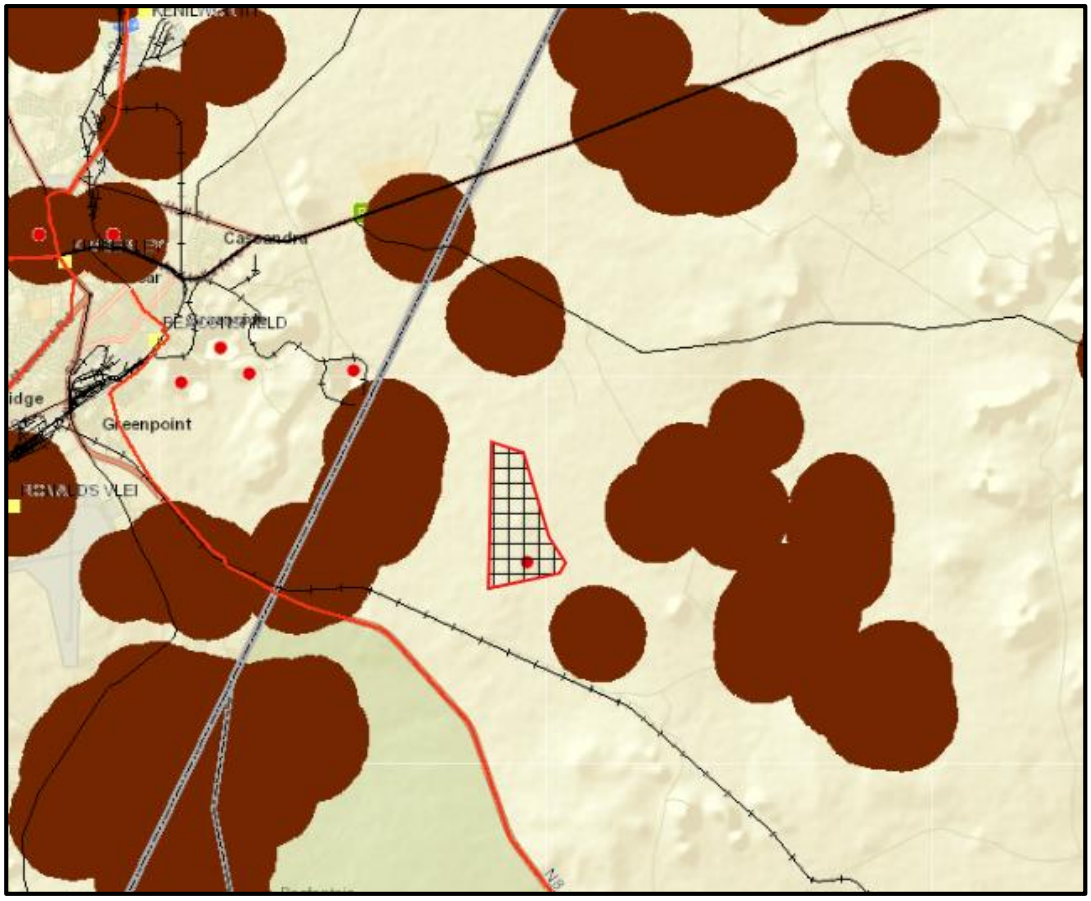


Figure 14: The Mining and Biodiversity importance map showing the prospecting footprint indicated by the red polygon. The dark brown polygons show areas of highest biodiversity importance with highest risk for mining (image obtained from the BGIS Map Viewer – Mining Guidelines).

BIODIVERSITY CONSERVATION AREAS

The 2015 Free State Biodiversity Plan as presented on the BGIS Map Viewer of SANBI shows that the study area falls within an Ecological Support Area (ESA1) (see figure below).

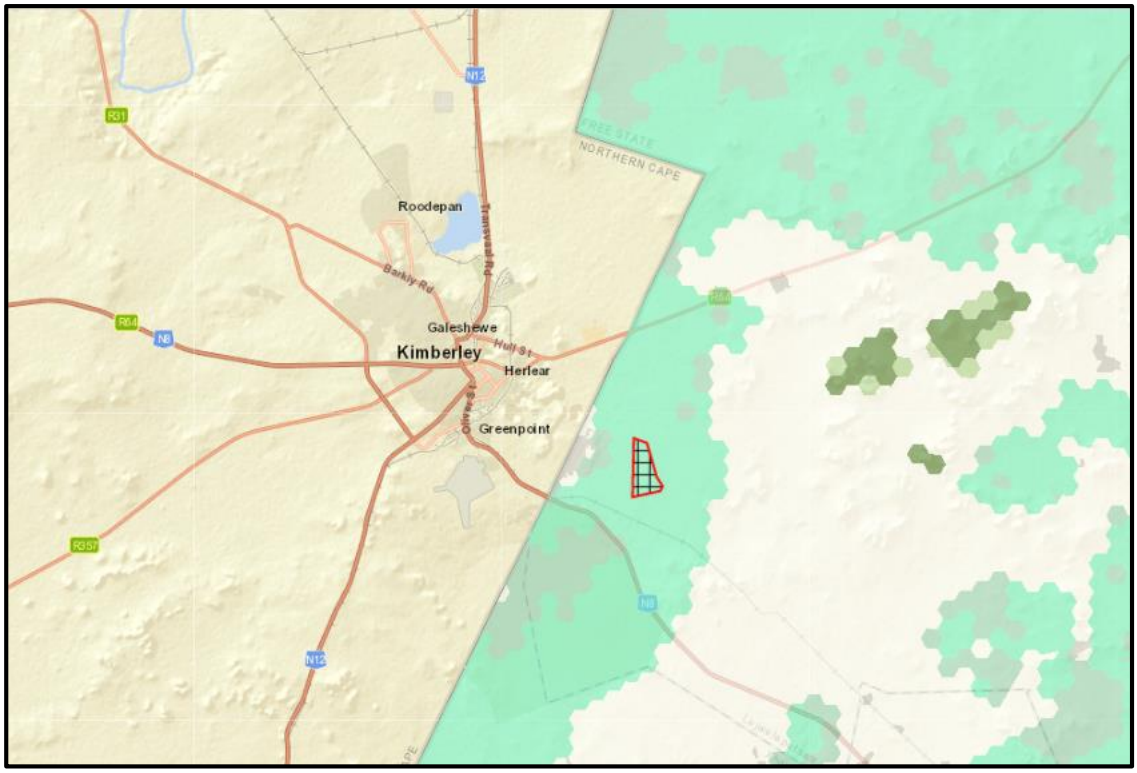


Figure 15: Prospecting area (red polygon) in relation to the Ecological Support Area (ESA1) as presented on the 2015 Free State Biodiversity Plan. (Image obtained from BGIS Map Viewer).

The Lexicon of Biodiversity Planning in South Africa provides the following definition for an ESA:

- Ecological Support Area (ESA): *"an area that must be maintained in at least fair ecological condition (semi-natural/moderately modified state) in order to support the ecological functioning of a CBA or protected area, or to generate or deliver ecosystem services, or to meet remaining biodiversity targets for ecosystem types or species when it is not possible or not necessary to meet them in natural or near-natural areas.".*

GROUNDCOVER

(Information extracted from the Biodiversity and Ecological Assessment of the Proposed Diamond Mining Operation at the Rooifontein Game Farm, EKO Environmental, 2016, attached as Appendix I)

According to Mucina and Rutherford (2012) the prospecting area lays within the Kimberley Thornveld (SVk 4) vegetation type as shown in the following figure.

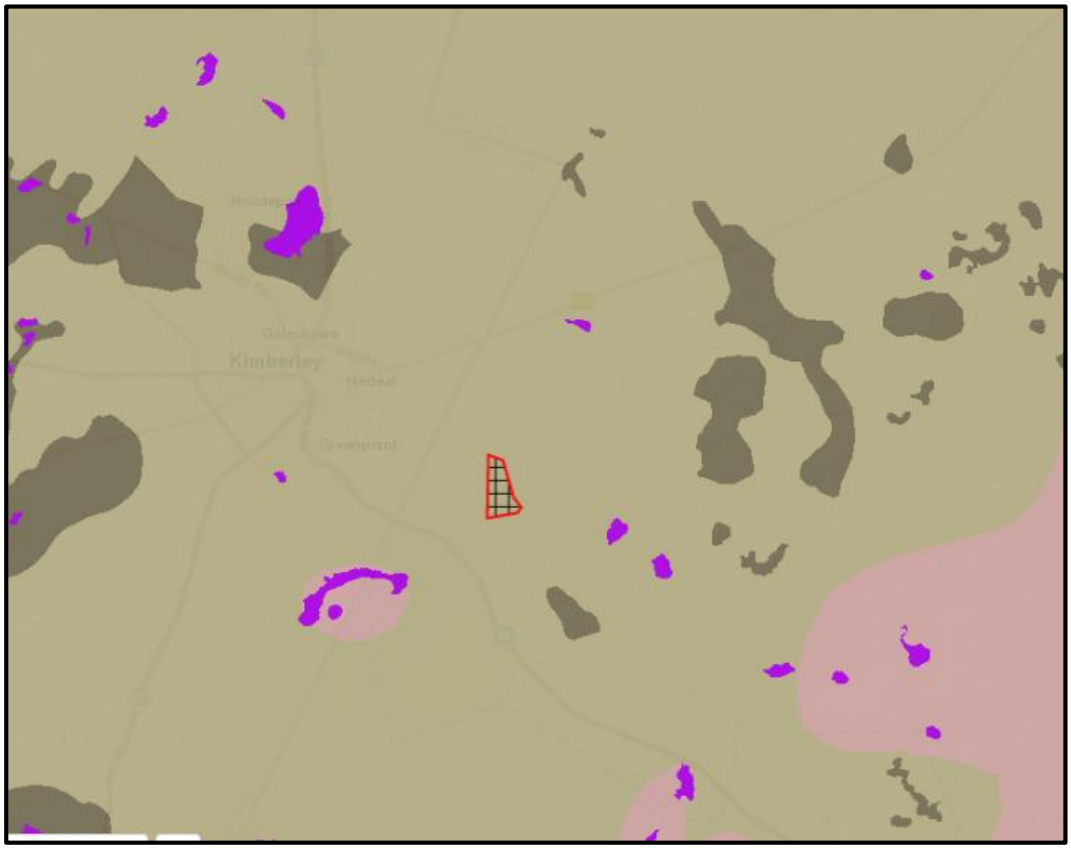


Figure 16: National vegetation cover map showing the prospecting area within the Kimberley Thornveld (light brown). (Image obtained from BGIS Map Viewer – National Vegetation Map).

The Kimberley Thornveld is characterized by slightly irregular plains with a well-developed tree- and shrub layer with occasional dense stands of *Tarchonanthus camphoratus* and *Vachellia mellifera*. The vegetation type usually has an open grass layer with much uncovered soil.

Some of the important taxa found in this vegetation type include *Vachellia karroo* (d), *V. mellifera* subsp. *detinens* (d), *V. tortilis* subsp. *heteracantha* (d), *Searsia lancea. Tarchonanthus camphoratus (d), Diospyros pallens, Ehretia rigida subsp. rigida, Euclea crispa subsp. ovata, Grewia flava, Lycium arenicola, L. hirsutum, Vachellia hebeclada* subsp. *hebeclada* (d), *Anthospermum rigidum* subsp. *pumilum*, *Helichrysum zeyheri, Aloe hereroensis* var. *hereroensis*, *Lycium cinereum, Eragrostis lehmanniana* (d), *Aristida canescens*, *A. congesta*, *A. mollissima* subsp. *argentea*, *Cymbopogon pospischilii*, *Digitaria argyrograpta*, *D. eriantha* subsp. *eriantha*, *Enneapogon*

cenchroides, *E. scoparius*, *Eragrostis rigidior*, *Heteropogon contortus*, *Themeda triandra.*

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) 2% of it is statutorily conserved in the Vaalbos National Park as well as the Sandveld-, Bloemhof Dam-, and S.A. Lombard Nature Reserves. A conservation target of 16% was set for the vegetation type.

Also refer to *Part A(1)(h)(iv)(c) Description of specific environmental features and infrastructure on the site – Site Specific Groundcover*.

FAUNA

(Information extracted from the Biodiversity and Ecological Assessment of the Proposed Diamond Mining Operation at the Rooifontein Game Farm, EKO Environmental, 2016, attached as Appendix I)

As mentioned earlier, the prospecting footprint lays within the Rooifontein Game Farm that is used for tourism, game farming, hunting and recreational purposes. In light of this, various game species occur on the property. The following faunal species are known to occur in/around the study area (non-exhaustive list):

- Aardvark (*Orycteropus afer*)
- Aardwolf (*Proteles cristatus*)
- Bat-eared Fox (*Otocyon megalotis*)
- Black-footed Cat (*Felis nigripes*) (VU)
- Blesbok (*Damaliscus pygargus* subsp. *phillipsi*)
- Blue Wildebeest (*Connochaetus taurinus)*
- Brown Hyena (*Hyaena brunnea*)
- Burchell's Zebra (*Equus quagga* subsp. *burchelli*)
- Eland (*Taurotragus oryx* subsp. *oryx*)
- Gemsbok (*Oryx gazella*)
- Ground Squirrel (*Xerus inauris*)
- Impala (*Aepyceros melampus* subsp. *melampus*)
- Kudu (*Tragelaphus strepsiceros* subsp. *strepsiceros*)
- Mountain Reedbuck (*Redunca fulvorufula* subsp. *fulvorufula*)
- Ostrich (*Struthio camelus*)
- Red Hartebeest (*Alcelaphus caama*)
- South African Hedgehog (*Atelerix frontalis*)
- Springbok (*Antidorcas marsupialis* subsp. *marsupialis*)
- Steenbok (*Raphicerus campestris*)
- Striped Weasel (*Poecilogale albinucha*)
- Waterbuck (*Kobus ellipsiprymnus* subsp. *ellipsiprymnus)*

- Yellow Mongoose (*Cynictis penicillata*)

Also refer to *Part A(1)(h)(iv)(c) Description of specific environmental features and infrastructure on the site – Site Specific Fauna.*

HUMAN ENVIRONMENT:

CULTURAL AND HERITAGE ENVIRONMENT

(Information extracted from the Phase 1 Archaeological Impact Assessment for a mining permit application on the Remainder of the farm Speculatie 217, Rossouw, 2017 & the Desktop Palaeontology Study, Durand, 2018, attached as Appendix J)

ARCHAEOLOGY:

Dr Lloyd Rossouw were contracted for a Phase 1 Archaeological Impact Assessment (AIA) for a mining permit application (±5 ha) on the study area in 2017 (see Appendix J). The study noted that the heritage footprint in the region is primarily represented by Stone Age sites and assemblages, either capped or occurring as surface occurrences, rock engraving sites, glacial pavements and structural remnants dating back to the Kimberley Diamond Rush of the 1870's and the Anglo Boer War. The early exploitation of the Vaal River Gravels by diamond diggers and the resulting development of infrastructure in the region exposed a wealth of archaeological sites that contributed to the development of prehistoric archaeology in southern Africa (Sohnge *et al*. 1937; Helgren 1979; Beaumont and Morris 1990; Forssman et al. 2010). As a result, Stone Age archaeological sites in the region are generally associated with, and mostly restricted to a variety of lacustrine contexts as well as the alluvial gravel terraces of the Vaal River (Rossouw 2017).

The AIA further noted that the development footprint is a historically significant area that also forms part of the Kimberley's historical Diamond Route as related to the Kimberley Diamond Rush of the 1870's (Van Zyl 1986). Diamonds were discovered on the farms Dorstfontein and Dutoitspan in 1870 and at Bultfontein and Vooruitzicht in 1871. The first diamond mines on Vooruitzicht became known as Old De Beers. Later that year miners from the Old De Beers Mine discovered what would become the richest diamond mine in the world, namely the Kimberley Mine, known initially as New Rush or Colesberg Kopje. Another rich diamond deposit was discovered on the farm Benaauwdheidsfontein in 1890, later to become known as the Wesselton Mine. All these mines lie within a radius of 5 km from the study area (Rossouw 2017).

Also refer to *Part A(1)(h)(iv)(c) Description of specific environmental features and infrastructure on the site – Site Cultural and Heritage Environment.*

PALAEONTOLOGY:

The South African Heritage Resources Agency (SAHRA) compiled the Palaeontological (fossil) Sensitivity Map (PSM) to guide developers, heritage officers and practitioners in screening palaeontologically sensitive areas at the onset of a project. When the footprint of the prospecting area is placed on the PSM, it shows the study area to extend over an area of high (orange) to insignificant (grey) concern as presented in the figure below.

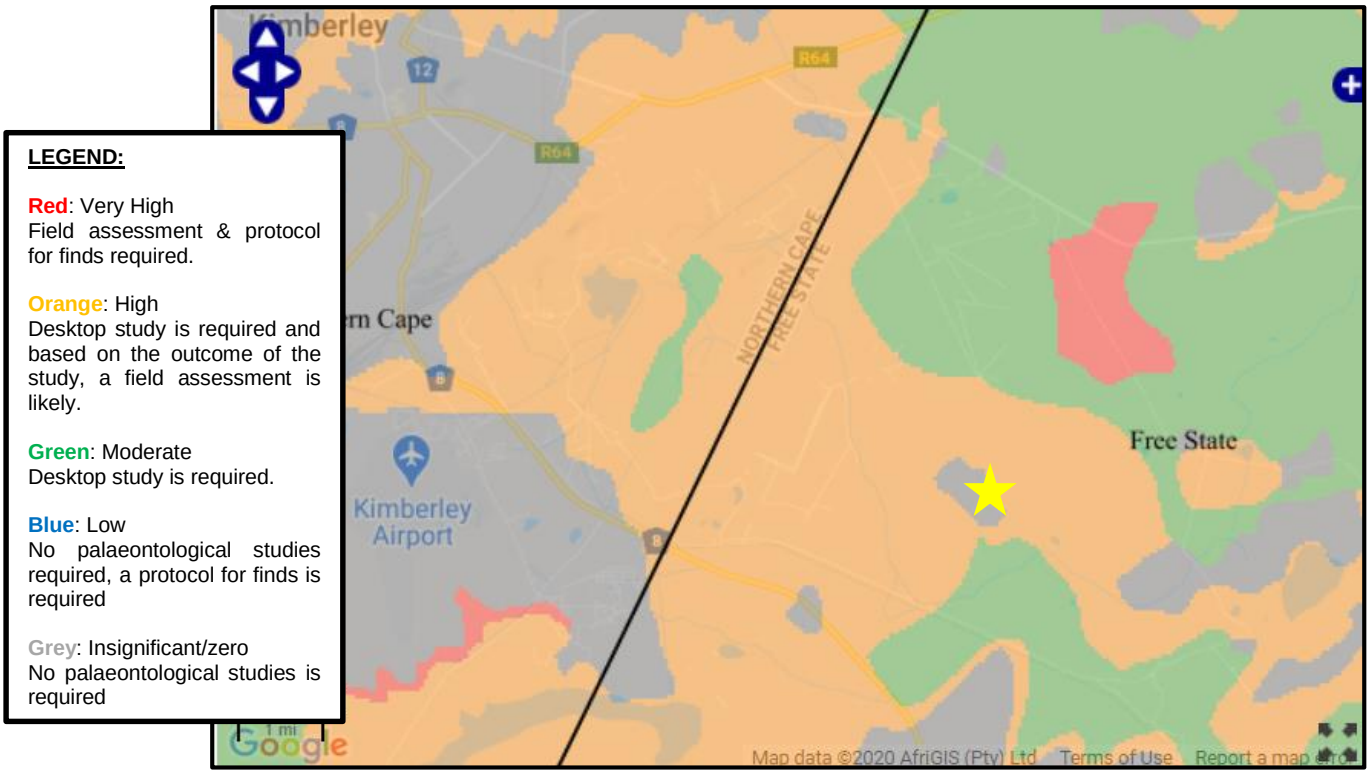


Figure 17: The SAHRA palaeontological sensitivity map shows the prospecting footprint (yellow star) falls in an area of high (yellow) to insignificant (grey) concern.

Dr JF Durand compiled a palaeontology desktop study of the area under investigation in 2018, the report found that the study area and vicinity are underlain by rocks of the Ecca Group which is covered in places by Quaternary to Recent deposits. The Prince Albert Formation occurs in the south-western half of the Karoo Basin. The northern facies of this formation which is approximately 90 m thick in the Kimberley region is characterised by the predominance of greyish to olive-green micaceous shale and grey silty shale as well as a pronounced transition to the underlying glacial deposits. Dark-grey to black carbonaceous shale and fine-to medium-grained feldspathic arenite and wacke are also present. Calcareous concretions and irregular carbonate bodies are found in the sandstones and mudrocks of this formation. Few exposures of this formation are visible because of its tendency to weather and because it is largely covered with wind-blown sand (Bosch, 1993; Johnson *et al*., 2009). A dolerite sill occurs adjacent to the study area. Most of the Karoo age rocks in the region are

covered by sand, alluvium and calcrete of Quaternary to Recent age (Partridge *et al*., 2009).

The desktop study described the palaeontological potential of the study area as follows (Durand 2018):

Prince Albert Formation of the Ecca Group:

This formation has yielded marine invertebrates (bivalves, nautiloids, brachiopods), palaeoniscoid fish, sharks, fish coprolites, protozoans (foraminiferans, radiolarians), petrified wood, palynomorphs (spores, acritarchs), non-marine trace fossils (especially arthropods, fish, also structures which resemble worm burrows), possible stromatolites and oolites (McLachlan and Anderson, 1973; Bosch, 1993; Johnson *et al*., 2009).

Quaternary deposits:

Alluvium, scree, sand, gravel and soil dating from the Late Cenozoic to Recent cover the southern part of the Prince Albert Formation in the study area. Although no fossils or sub-fossils been reported from the Quaternary sediments in the study area, there is always the possibility that something may be discovered. In spite of these Quaternary fossiliferous deposits being extremely rare there are well documented cases of remains of tortoises, snail shells, ostrich eggs, termitaria, bones etc. that have been discovered elsewhere (Macrae, 1999; Partridge *et a*l., 2009).

Conclusion of Desktop Study:

The area is underlain by weathered Karoo aged rocks and it is unlikely that fossils will be found during prospecting. The chances of finding fossils are increased however when fresh unweathered rocks are exposed during mining. The Prince Albert Formation may have undergone thermal metamorphosis in the study area due to dolerite intrusions. In the unlikely event that fossils are found in the study area the palaeontologist proposed that a chance-find procedure be implemented.

SOCIO-ECONOMIC ENVIRONMENT

(Information extracted from the Tokologo Local Municipality: Integrated Development Plan 2018/19)

The study area is located within ward 3 of the Tokologo Local Municipality (TLM). The TLM is a category B municipality located within the Lejweleputswa district in the Western Free State Province. Boshof is the capital town and is situated in the centre, whilst Dealesville is further east of Boshof**,** and Hertzogville is situated in the north of the municipal area. Dealesville is the smallest town within Tokologo Local Municipality.

According to the revised population estimates based on the 2011 (Statistics South Africa, 2011), the TLM has a population of 28 984 with a population growth rate of 1.6%. South Africa as a whole is estimated to have an average annual growth rate of 1.4% which is less than that of TLM's growth rate.

Gender Profile

The Pie Chart below indicates that gender ratio in the TLM is comprised of 50.3% females and 49.7% males (StatsSA). The age/sex distribution of the TLM shows the highest number of people in the TLM are between the age of 0 – 29 years of age.

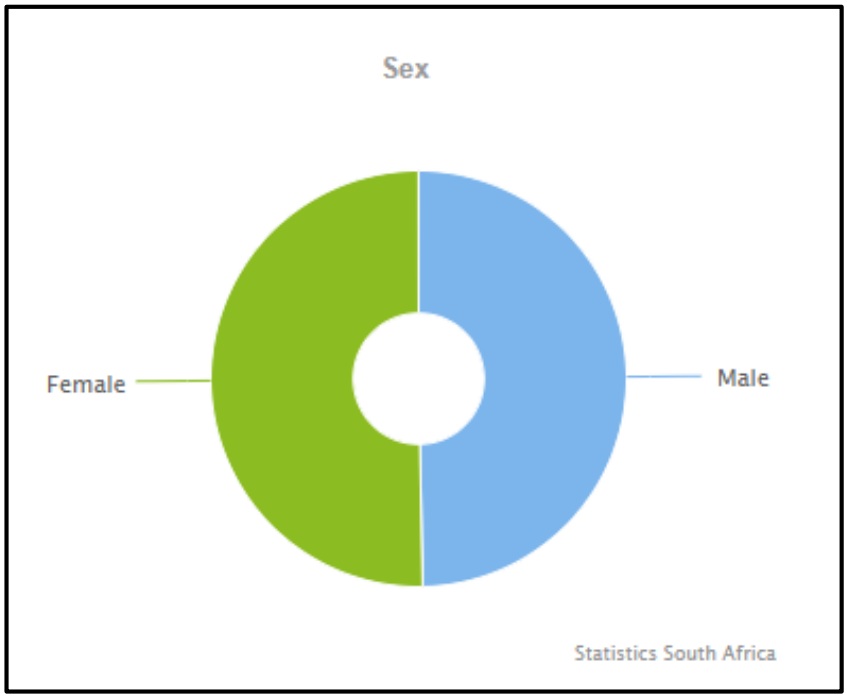


Figure 18: Gender profile (image obtained from Statistics South Africa).

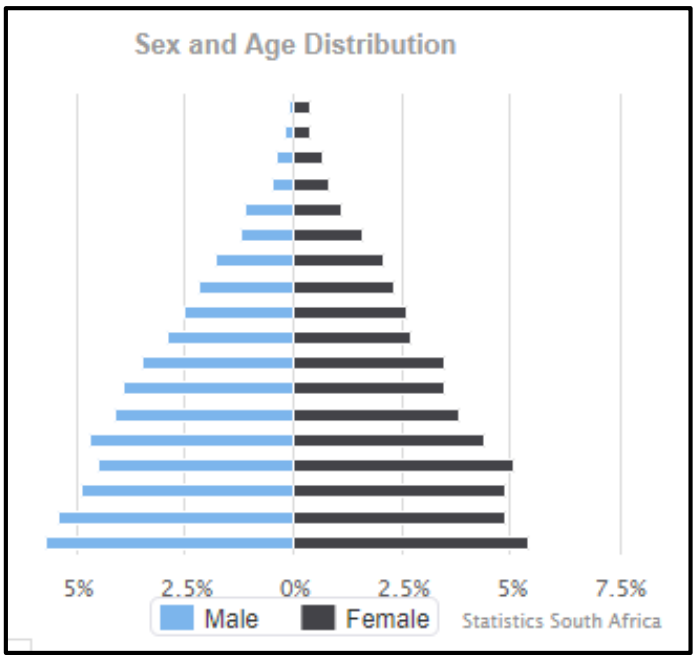


Figure 19: Gender and age distribution profile (image obtained from Statistics South Africa).

Population Profile

Below is a pie chart which indicates the total black African population of TLM at 84.5%, Coloured at 4.6%, and White population at 9.9%. The Indian/Asian and others form the lowest proportions of the population with the former accounting for 0.7% and the latter 0.3%.

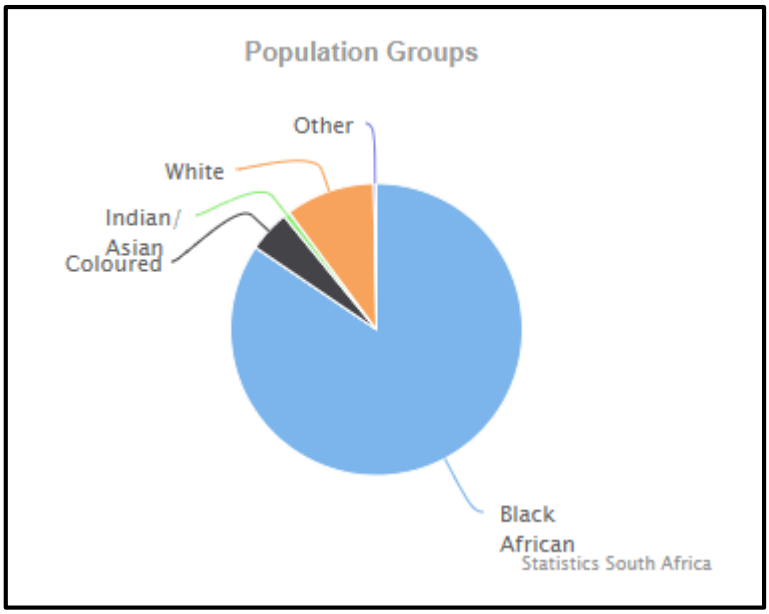


Figure 20: Population profile of the Tokologo municipal area (image obtained from Statistics South Africa).

Economic Profile

The TLM is well known for its agriculture, and farming sectors. The agricultural land is mostly used for game, sheep and cattle farming with various cash crops sown in the area. The municipality has ±9 122 people who are economically active, and of these 27.4% are unemployed. Twenty-four point seven percent of the average household income of the TLM range between R 19 601 – R 38 200, followed by an average income of R 9 601 – R 19 600 at 28.2%, while 11.1% of the households registered an income of R 38 201 – R 76 400 as shown below.

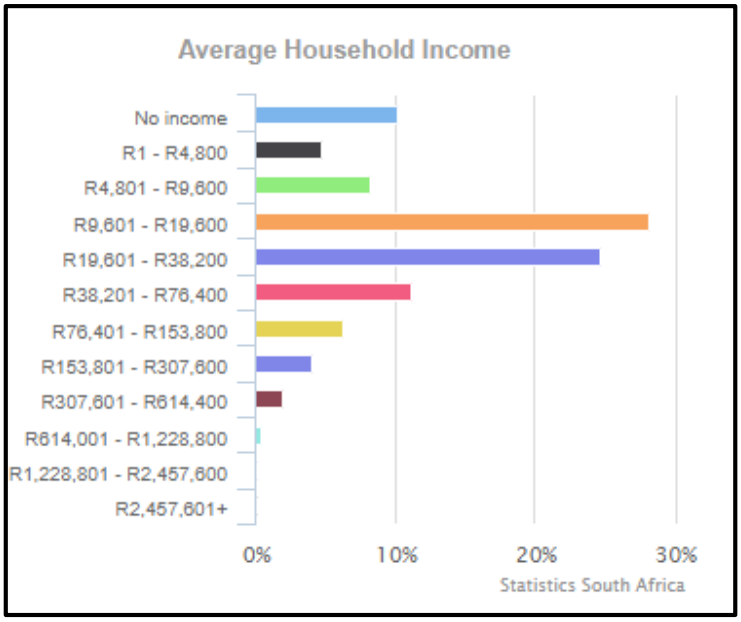


Figure 21: Average Household Income profile of the Tokologo municipal area (image obtained from Statistics South Africa).

The 2011 statistics showed an increase in the youth unemployment rate of the municipality from 33.1%, in 2001, to 35.8%. The average unemployment rate of the TLM increased from 26.8% (2001) to 27.5% in 2011. As mentioned earlier, the economic activities of the TLM comprise of agriculture, followed by mining, community services, and trade.

Education Levels

Twenty point eight percent of the population above the age of 20 has no schooling, 17.8% has obtained matric and 5.1% obtained higher education. The matric rate increased from 12% in 2001 to 17.8% in 2011, the no schooling rate decreased from 31.5% to 20.8% and the Higher Education increased from 2.7% to 5.1%.

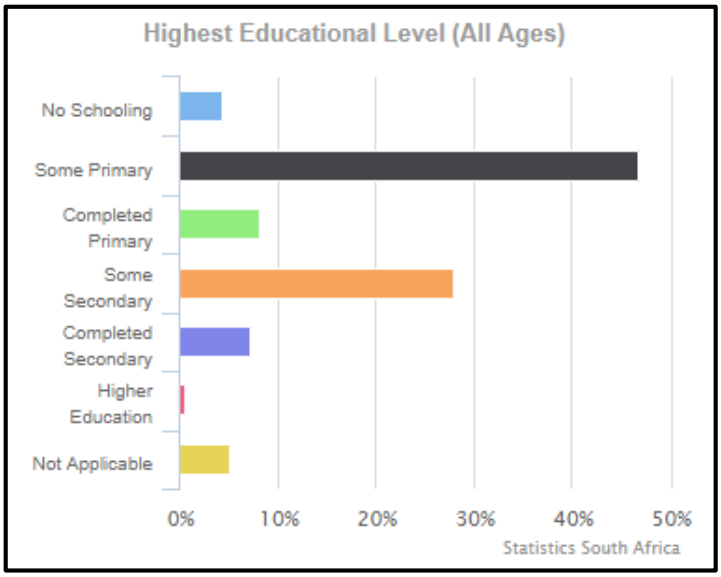


Figure 22: Highest educational level of the Tokologo municipal area (image obtained from Statistics South Africa).

(b) Description of the current land uses

The Remaining Extent of the farm Rooifontein No 1722 (formerly known as Speculatie No 217) is situated in a rural setting on the outskirts of Kimberley within the Free State Province, ±3.5 km east of the Wesselton Mine and ±5.7 km south of the R64 Boshof-Kimberley provincial road. The study area is located in the Rooifontein Game Farm that, as mentioned earlier, is used for tourism, game farming, hunting and other recreational activities.

The immediate surrounding land uses, adjacent of the prospecting area, include: agricultural activities (game/grazing), tourism and diamond mining (Wesselton Mine). The following table provides a description of the land uses and/or prominent features that occur within a 500 m radius of the prospecting footprint:

Table 8: Land uses and/or prominent features that occur within/within 500 m radius of prospecting area.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area is surrounded by natural areas used for agricultural purposes.
Low density residential	-	**NO**	-
Medium density residential	-	**NO**	-
High density residential	-	**NO**	-
Informal residential	-	**NO**	-
Retail commercial & warehousing	-	**NO**	-
Light industrial	-	**NO**	-
Medium industrial	-	**NO**	-
Heavy industrial	-	**NO**	-
Power station	-	**NO**	-
High voltage power line	-	**NO**	-
Office/consulting room	-	**NO**	-
Military or police base / station / compound	-	**NO**	-
Spoil heap or slimes dam	-	**NO**	The spoil heaps/dams of the Wesselton mine is >2 km from the nearest boundary of the prospecting area.
Quarry, sand or borrow pit	**YES**	-	The prospecting footprint extends across historic mining areas and include an open cast pit previously mined for diamonds.
Dam or reservoir	**YES**	-	Some farm dams occur within the prospecting footprint.
Hospital/medical centre	-	**NO**	-
School/ crèche	-	**NO**	-
Tertiary education facility	-	**NO**	-
Church	-	**NO**	-
Old age home	-	**NO**	-
Sewage treatment plant	-	**NO**	-
Train station or shunting yard	-	**NO**	-
Railway line	-	**NO**	-
Major road (4 lanes or more)	-	**NO**	The R64 provincial gravel road is the nearest to the prospecting footprint at ±3 km away.
Airport	-	**NO**	-
Harbour	-	**NO**	-
Sport facilities	-	**NO**	-
Golf course	-	**NO**	-
Polo fields	-	**NO**	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
Filling station	-	**NO**	-
Landfill or waste treatment site	-	**NO**	-
Plantation	-	**NO**	-
Agriculture	**YES**	-	The prospecting area forms part of the Rooifontein Game Farm.
River, stream or wetland	-	**NO**	-
Nature conservation area	**YES**	-	The Rooifontein Game Farm is managed as a privately owned nature reserve.
Mountain, hill or ridge	**YES**	-	The prospecting footprint extends across a small rise on the property.
Museum	-	**NO**	-
Historical building	-	**NO**	
Protected Area	-	**NO**	-
Graveyard	-	**NO**	-
Archaeological site	**YES**	-	The prospecting footprint extends across various areas of archaeological value. Refer to *Part A(1)(h)(iv)(c) Description of specific environmental features and infrastructure on the site – Site Cultural and Heritage Environment & Appendix J.*
Other land uses (describe)	-	**NO**	-

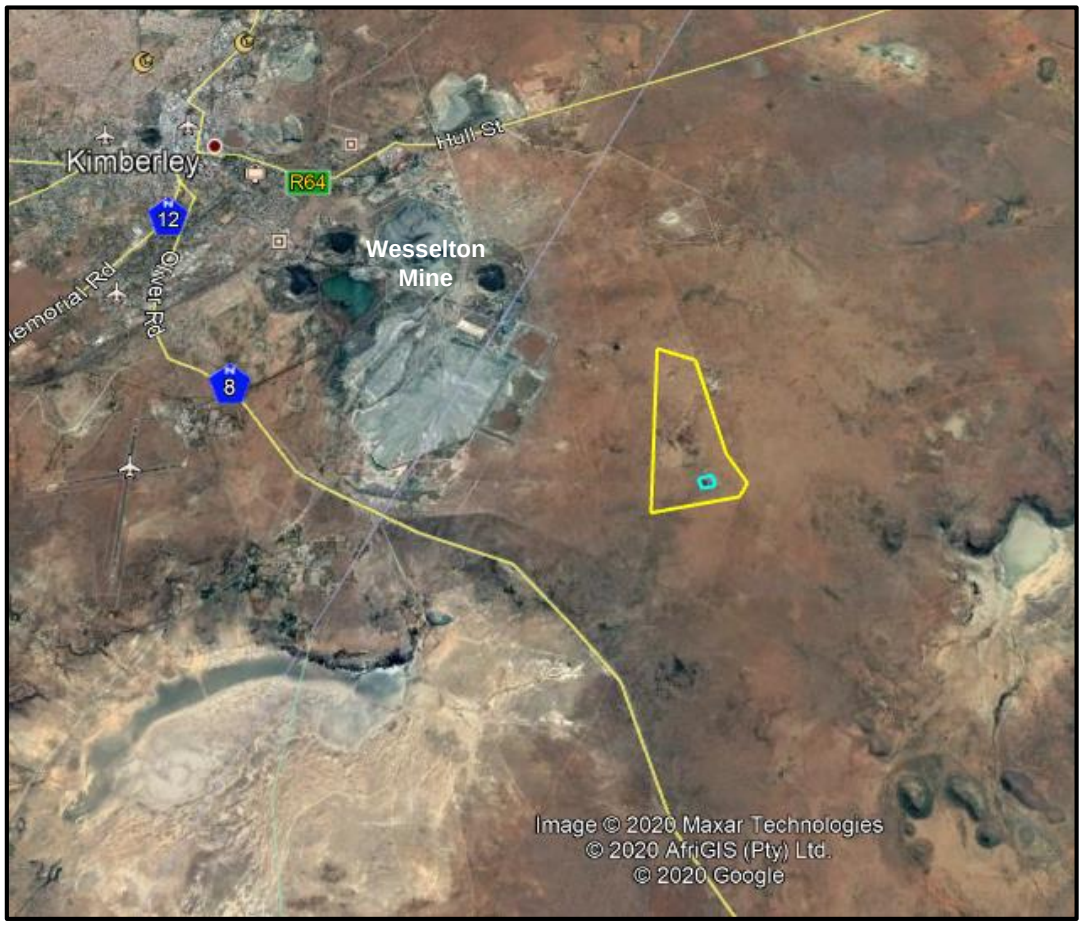


Figure 23: Map showing the position of the prospecting area (yellow polygon) and S102 extension area (blue polygon) in relation to the Wesselton Mine and the town of Kimberley (image obtained from Google Earth).

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

SPECIFIC ENVIRONMENTAL FEATURES

SITE SPECIFIC TOPOGRAPHY

As mentioned earlier, the natural topography of the study area (approved prospecting footprint) is best described as a relative flat area with a gradual increase towards the centre of the footprint, upon which it declines towards the south-east.

The topography of the earmarked ±5 ha area is flat with an average slope of 0.6% as shown in the following figure.

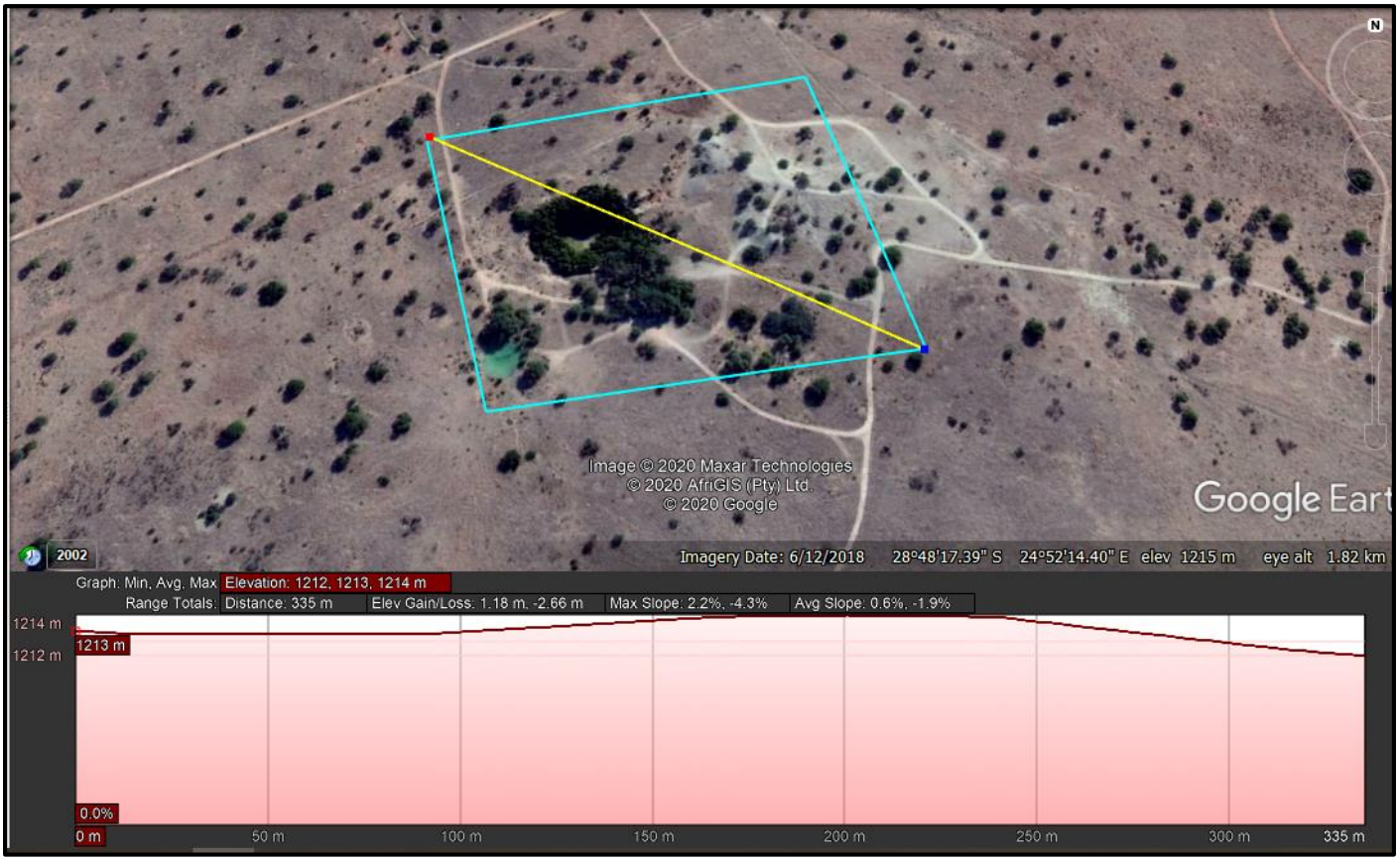


Figure 24: Elevation profile of the ±5 ha area (image obtained from Google Earth).

EKO Environmental confirmed in 2016 that the topography of the ±5 ha area consists of a plain with no discernible slope (see Appendix I). The old tailings dump formed a positive landscape feature although this is artificial and part of the natural topography.

The bulk sampling phase of the prospecting activities will have a temporary impact on the topography of the area. However, upon rehabilitation of the pits/trenches and removal of the prospecting infrastructure, the topography of the study area should be restored to its pre-prospecting state. The potential for the prospecting activities to negatively impact the topography of the study area is of low significance as the activity will have no residual impact on the environment upon closure of the PR.

SITE SPECIFIC VISUAL CHARACTERISTICS

The approved PR extends over ±333 ha of the earmarked property, with the possible addition of ±5 ha (should the S102 application be approved). The figures below show the viewshed analysis of the prospecting area within a ±10 km radius. The green shaded areas show the positions from where the prospecting area is visible. Due to the size of the PR footprint the viewshed analysis was drawn for the northern boundary, centre position, and the southern boundary.

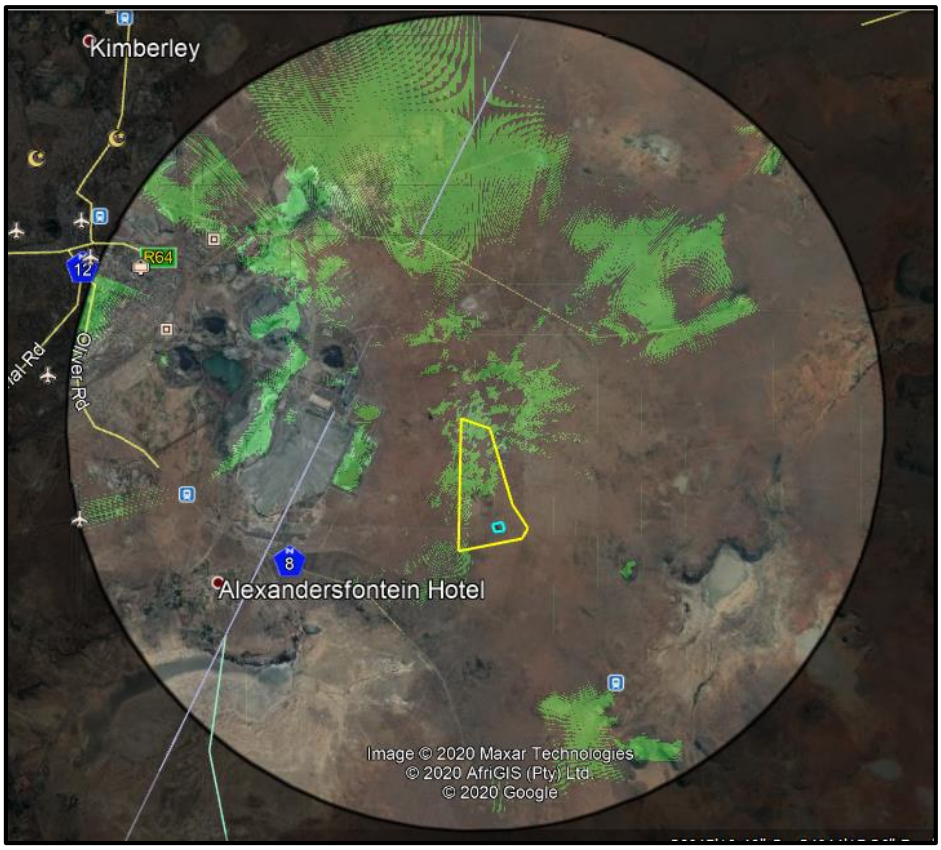


Figure 25: Viewshed of the northern boundary of the prospecting area (image obtained from Google Earth).

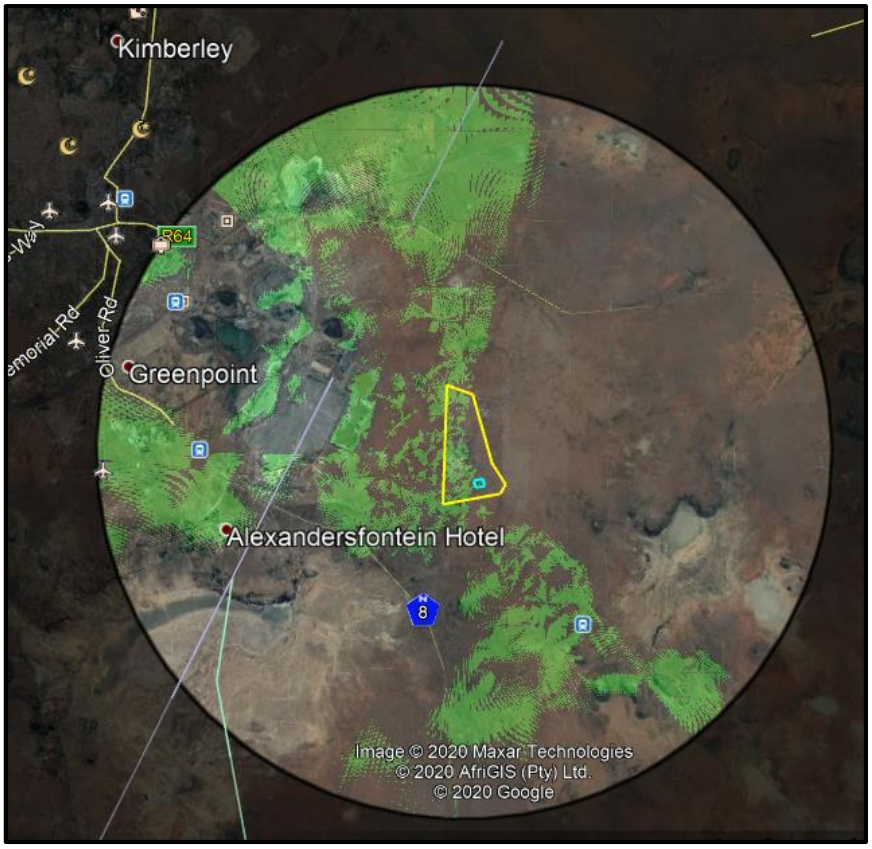


Figure 26: Viewshed of the centre position of the prospecting footprint (image obtained from Google Earth).

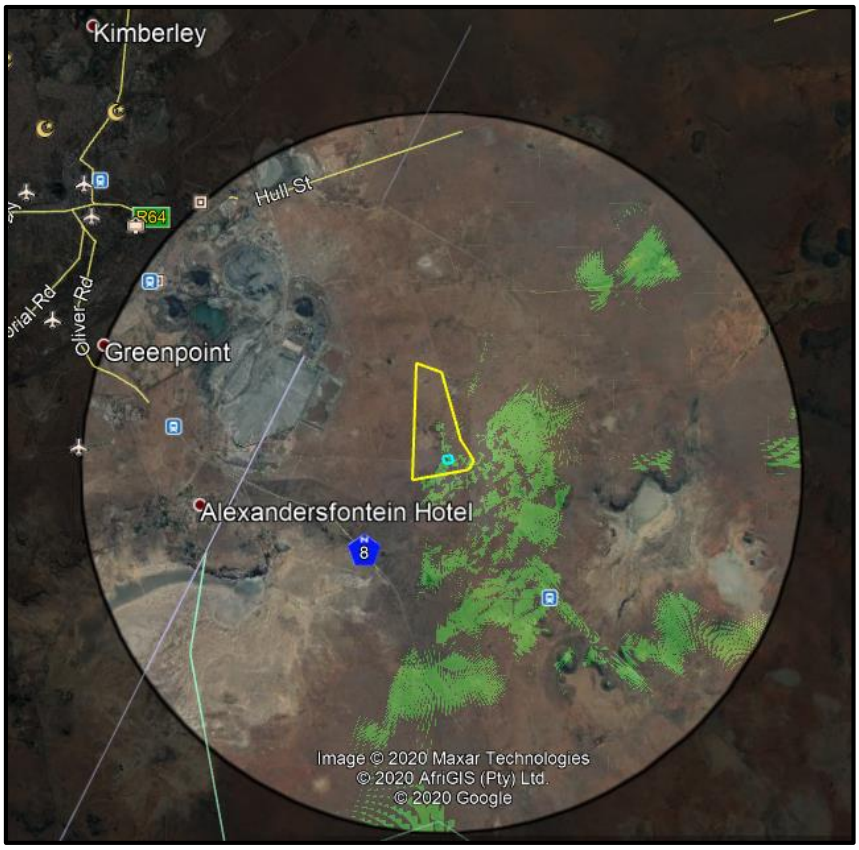


Figure 27: Viewshed of the southern boundary of the prospecting area (image obtained from Google Earth).

The following conclusions were made from the viewshed analysis:

- **Northern Boundary –** Very low intermittent visibility mainly from the higher laying areas to the.

- **Centre –** Due to the rise in elevation the visibility of this area accordingly increases towards the northwest and southeast.

- **Southern Boundary –** Very low intermittent visibility mainly from the south-east with no visibility from the north to the west.

As mentioned earlier, the area of disturbance is expected to be ±1 ha of the entire 337.9299 ha (should the S102 application be approved), that will be reinstated upon closure of the operation. In light of this, the potential impact of the prospecting operation on the visual characteristics of the receiving environment is deemed to be of very low significance.

SITE SPECIFIC AIR AND NOISE QUALITY

The prospecting footprint is ±3.5 km from the nearby Wesselton Mine and within the Rooifontein Game Farm. Should the S102 application be approved, the reconstructed Olifantsfontein Hotel will also fall with the footprint of the prospecting area.

Presently, the air quality of the study area is mainly impacted on by the nearby mining operations, traffic on the surrounding gravel roads, and dust generated from dry denuded areas. Emission into the atmosphere is controlled by the National Environmental Management: Air Quality Act, 2004. The prospecting activity does not trigger an application in terms of the said act. Should the PR Holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use.

The potential impact on the noise ambiance of the receiving environment is expected to be of low-medium significance and representative of the nearby mining operations in the area.

SITE SPECIFIC GEOLOGY AND SOIL

(Information extracted from the Prospecting Work Programme of Affordable Outcomes CC)

The aim of the proposed prospecting operation is to determine the site specific geology of the approved footprint. The operation will commence (Phase 1) with geological desktop studies over the application area (337.9299 ha) to establish whether or not other kimberlite bodies and/or alluvial gravel beds are present on the application area.

The methodology to be used for this purpose is current, and updated geological information regarding the Rooifontein farm, satellite imagery and field visits will be consulted. The information obtained will then be mapped to produce a graphical model of the area that will advise the geological report. The geological report will include recommendations and suggestions on the locality of the boreholes to be drilled during Phase 2.

Phase 2 will entail the start of the invasive activities as drilling will be done on determined possible diamond carrying bodies to a recommended depth or until bed rock is reached. As mentioned earlier, RC percussion drilling will initially be used for the drilling of the holes, but where kimberlite bodies are found the holes will be further drilled with DC drilling. The cores extracted will be sampled and sent for laboratory analysis for the determination of possible diamond content and approximate carats per hundred tons. The bulk sampling phase (Phase 3), described earlier, will follow once the results of Phases 1 and 2 was analysed and the bulk sampling locations established.

Following Phase 3, detailed geological models will be drafted using all the prospecting results and information obtained. These models will be used as graphical illustrations within the report to be compiled. The Geological Report will contain all relevant information in regard to the prospecting results obtained with geological interpretations and recommendations for future reference.

SITE SPECIFIC HYDROLOGY

(Information extracted from the Wetland Identification and Delineation Report with regards to the Application Area of Wheatfield Investments (Pty) Ltd, FGA Mining Consultants, 2016, attached as Appendix H)

FGA Mining Consultants (FGA) was contracted in 2016 to identify any wetlands within the study area (±5 ha) (see Appendix H). FGA reported that the central portion of South Africa, especially around Kimberley and the western portion of the Free State is well known for its non-perennial pans on the almost featureless landscape. These pans are mostly high in salinity and various small-scale salt mines are to be found. During the wet season these pans get filled with run-off water within the micro catchment areas around these pans. Each pan has an own micro catchment area where run-off water is collected in non-perennial streams that mouth into the lower lying pan. Normally these non-perennial streams increase the micro-catchment area of such a pan to a limited extent. As the pans are not interlinked or linked to larger drainage systems on surface, the water evaporates and or penetrates to refill the groundwater in the direct vicinity of the pan/s (FGA 2016).

The report found that the study area (±5 ha extension area) is situated between 1200 amsl – 1220 amsl, while the nearest saltpans are both below 1200 amsl. The saltpan south of the application area is situated between 1160 amsl and 1180 amsl while the further pan to the east is situated between 1180 amsl and 1200 amsl. This second pan is 5 km to the east of the abovementioned study area.

The nearest point of the southern pan's catchment is just south of the study area. The upper reaches of this catchment of the non-perennial stream is higher than the application area, which causes run-off water in the direct vicinity of the application water flowing towards the southwest, rather than in the direction of the catchment.

Figure 28: Location of the study area (±5 ha extension area) in relation to the nearest wetlands and their bodies. (Image obtained from the FGA Wetland Identification and Delineation Report, 2016).

FGA concluded that based on the initial desktop study, it is clear that, considering the characteristics of the surface soils and absorption rate of water, none of the water from the direction of the application area, can or will reach the micro catchment areas of the two wetland situations identified.

In 2016 EKO Environmental (EKO) also confirmed that no wetlands, drainage lines or watercourses occur on or near the site (±5 ha) although the old mining pit has formed an artificial waterbody (see Appendix I). The artificial waterbody formed by the old mining pit is not considered to have any significant conservation value in terms of ecology. The pit does not perform any vital ecosystem function. It is currently utilised by game as a watering hole. However, in the opinion of the specialist, as an artificial

feature this can easily be replicated post prospecting (if needed) or at another location. The same was found for the small artificial pond. EKO mentioned that an ephemeral pan is located approximately 420 meters north west of the site but is unlikely to be affected by the mining operations.

In light of the above, if water and waste management mitigation measures are followed (as proposed in this report) the prospecting activities will not influence the surrounding wetlands.

SITE SPECIFIC GROUNDCOVER

(Information extracted from the Biodiversity and Ecological Assessment of the Proposed Diamond Mining Operation at the Rooifontein Game Farm, EKO Environmental, 2016 & Veld Conditions and Grazing Potential of Rooifontein Nature Reserve for Management Purposes, Anderson, 2008, attached as Appendix I)

The approved EMPR of the PR Holder notes that Dr PC Anderson divided the area into seven vegetation units: Dwarf Shrubland, Mixed Grassland, *Acacia tortilis* Savanna, Grassy Shrubland, *Eragrostis lehmanniana* Grassland, Pan Shrubland and Paardeberg Vlei. The prospecting footprint (337.9299 ha) falls within the *Acacia tortilis* Savanna which has a well-developed tree and large shrub component with a fairly good grass layer. This vegetation unit forms an open savanna on the deeper sandy soils with Umbrella Thorn as the dominant tree species.

The ecological study conducted by EKO Environmental (EKO) in 2016 on the ±5 ha (extension) area found that the natural vegetation was largely transformed by historical mining activities (see Appendix I). EKO found that a large portion of the site consists of an old mining pit and tailings dump, and that a portion of the site is also utilised as a recreational camping area with small building, and artificial pond and structures associated with the camping area. Several dirt tracks also occur on the site. Due to the long period after last mining activities the area has rehabilitated itself to a large degree although the species composition is altered from the natural condition largely due to the transformation of the topography and habitat.

The report found that although the site is situated within the Savanna Biome and the vegetation structure consists of open grassland with scattered trees, the old mining pit and camping area has caused an increased tree cover with a closed canopy. Dwarf karroid shrubs are prominent and indicative of overgrazing and disturbance.

Dominant trees around the mining pit and scattered on the site include *Vachellia tortilis, V. karroo, Diospyros lycioides, Searsia lancea, Ziziphus mucronate, Lycium hirsutum* and *Ehretia rigida*. A single specimen of the protected *Boscia albitrunca* (Shepherds Tree) was noted on the site. The species is widespread and common and therefore not of significant conservation significance. It is however still a protected species and

a permit will have to obtained to remove it. In shade under trees the grass, *Setaria verticilata*, is common. *Asparagus larcinus*, a shrub or climber is also associated with the understorey of the tree layer. A common exotic herb under trees is *Urtica urens*.

The vegetation surrounding the artificial waterbody within the mining pit is dominated by *Cynodon dactylon*, a common grass along dams. The grass layer remaining on the site is dominated by *Eragrostis lehmanniana, E. obtusa, Tragus berteronianus, Cymbopogon pospischilii, Heteropogon contortus* and *Aristida congesta*. Dwarf karroid shrubs are prominent on the site and dominant in areas. This is indicative of overgrazing and disturbance of the site. These include *Gnidia polycephala, Lycium horridum, L. cinerium, Aptosimum spinescens, Pentzia incana, Chrysocoma ciliata, Asparagus suaveolens* and *Rosenia humilis*. The *Acacia tortilis* Savanna vegetation unit (Anderson 2008) has however been altered to some degree by the historical mining pit and tailings dump. According to this study (Anderson 2008) the vegetation unit is severely over-utilised as indicated by the dominance of the Bitterbush (*Chrysocoma ciliata*). This specific site is also considered to be disturbed with reference to the dominance of dwarf karroid shrubs but overgrazing may be a secondary impact whilst disturbance caused by the mining pit, tailings dump and camping area being the primary impact.

The site does contain a few exotic species including the weed, *Urtica urens*. However, several specimens of the exotic *Prosopis glandulosa* (Mesquite Tree) were identified on the site indicating disturbance. This species is also considered a serious invader of arid areas in the western half of the country and has the potential to spread and form an infestation. Their ability to decrease diversity is well known especially along watercourses.

No rare or endangered species could be identified on the site and it is considered unlikely that such species will occur here. However, a single specimen of the protected *Boscia albitrunca* (Shepherds Tree) was noted on the site.

A large specimen of *Vachellia tortilis* (Umbrella Thorn) occurs on the site. This tree is of significant age and size and is considered to have some conservation value. The species is however common, widespread and not protected. This specimen is also not listed as a Champion Tree of South Africa (Individual Trees and Groups of Trees Declared as Protected Under Section 12 of the National Forests Act of 1998 by the Department of Agriculture, Forestry and Fisheries). It can therefore not be considered of high conservation value. However, efforts should still be made to retain the tree on the site as far as possible

In conclusion, the site is considered to be modified to a large degree, notably disturbed and no vegetation species or ecological function of high conservation significance occur on the site (±5 ha extension area).

SITE SPECIFIC FAUNA

The terrestrial site specific fauna of the study area represents the fauna of the surrounding environment. Birds of conservation significance known to occur in the area is the Secretary Bird (*Sagittarius serpentarius*). No nests were noted in trees on the site although these seem to be suitable. The site (±5 ha extension area) is however frequented by campers and it is considered unlikely that the species will inhabit the site.

The fauna within the PR footprint will not be impacted by the prospecting activities as they will be able to move away or through the site, without being harmed. Workers must be educated and managed to ensure that no fauna of the site is harmed.

SITE SPECIFIC CULTURAL AND HERITAGE ENVIRONMENT

(Information extracted from the Phase 1 Archaeological Impact Assessment for a mining permit application on the Remainder of the farm Speculatie 217, Rossouw, 2017 & the Desktop Palaeontology Study, Durand, 2018, attached as Appendix J)

Following the earlier discussion regarding the archaeological status of the site, Rossouw (2017) found a large excavation pit with accompanying dumps within the study area (±5 ha extension area) that is evidence of late 19th century prospecting and mining activities at the site, which was to become known as the Olifantsfontein Mine. A modern reconstruction of the Olifantsfontein Hotel, purported to have been erected at the mine during the 1880's is located next to the historical mining pit. The proposed ±5 ha extension area is located ±800 m south of a large dolerite outcrop with potential engraving sites, as well as sangars and trenches associated with the Anglo Boer War. The remnants of a tram line as well as 19th century and early 20th century refuse middens are also found in the area. Several uncapped and weathered stone tool flakes were recorded during the pedestrian survey (2017), but no evidence was found of *in situ* Stone Age archaeological material, capped or distributed as surface scatters on the landscape.

Rossouw notes that the proposed development footprint (±5 ha extension area) is located within a historical mining area that forms part of a historically significant landscape central to the Kimberley Diamond Rush of the 1870's and the area is therefore considered to be of high historical (and historical archaeological) significance. Rossouw concluded that the mining of the development area would likely

have an adverse effect on the integrity of Kimberley's historical landscape, and advised against mining at the site.

Prospecting (instead of mining) of the area will however entail the bulk sampling of one pit/trench within the footprint of the ±5 ha area with a maximum footprint disturbance of 200 m². It is suggested that the footprint of the bulk sampling pit/trench be determined in consultation with an archaeologist to prevent disturbance to any of the surrounding historical sites of importance, and that the mitigation measures proposed in this report strictly be followed at all times.

SITE SPECIFIC INFRASTRUCTURE

As mentioned earlier, the modern reconstruction of the Olifantsfontein Hotel as well as an artificial pond is present within the ±5 ha area to be added to the approved PR footprint should the S102 application be granted.

No prospecting activities are planned over any of the existing structures on the farm. The Olifantsfontein Hotel will remain intact, and will not be disturbed by the prospecting programme. Other infrastructure within the PR footprint comprises of farm roads and fences. None of these structures will be impacted by the prospecting activities.

(d) Environmental and current land use map.

(Show all environmental and current land use features)

The environmental and current land use map is attached as Appendix E.

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

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

As the prospecting of the Affordable Outcomes Application was already approved, the impacts associated with the proposed activity were listed under *Part A(1)(i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.*

For the proposed S102 extension area (±5 ha) the following potential impacts were identified for each main activity in each phase. The significance rating was determined using the methodology as explained under *vi) Methodology Used in Determining and Ranking the Significance*. The impact rating listed below was determined for each impact **prior** to bringing the proposed mitigation measures into consideration, therefore the worst-case scenario and

should be seen as a preliminary assessment. The degree of mitigation indicates the possibility of partial, full or no mitigation of the identified impact.

OPERATIONAL PHASE – PROSPECTING AND BULK SAMPLING

Visual intrusion due to prospecting operation

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium					**Degree of Mitigation: Partial**		
2	3	1	2	4	5	3	**6**

Dust nuisance due to prospecting activities

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium					**Degree of Mitigation: Full**		
2	3	2	2.3	4	4	4	**9.2**

Noise nuisance due to prospecting activities

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Medium					**Degree of Mitigation: Partial**		
2	3	2	2.3	4	5	4.5	**10.4**

Soil contamination associated with littering and hydrocarbon spills

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium					**Degree of Mitigation: Full**		
3	3	2	2.6	3	3	3	**7.8**

Negative impact on the natural vegetation of the footprint

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium					**Degree of Mitigation: Full**		
2	3	1	2	3	2	2.5	**5**

Infestation of the prospecting area with invader plant species

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium					**Degree of Mitigation: Full**		
3	4	2	3	4	2	3	**9**

Potential impact on fauna within the footprint area

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Medium					**Degree of Mitigation: Full**		
3	3	3	3	3	2	3.5	**10.5**

Potential impact on areas/infrastructure of heritage or cultural concern

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium					**Degree of Mitigation: Full**		
4	5	5	4.7	3	1	2	**9.4**

Deterioration of the access road due to the prospecting area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium					**Degree of Mitigation: Full**		
3	4	3	3.3	4	2	3	**9.9**

Potential impact on the management and use of the Rooifontein Game Farm

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium					**Degree of Mitigation: Full**		
3	3	3	3	4	5	4.5	**13.5**

DECOMMISSIONING PHASE

Safety risk posed by uncapped boreholes or open excavations left by contractor

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium					**Degree of Mitigation: Full**		
4	5	1	3.3	4	1	2.5	**8.3**

Potential impact associated with litter/hydrocarbon spills left in the prospecting area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium					**Degree of Mitigation: Full**		
4	5	2	3.6	4	1	2.5	**9**

Erosion of access roads or vehicle tracks

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium					**Degree of Mitigation: Full**		
3	5	3	3.6	3	2	2.5	**9**

Return of prospecting area to agricultural use **(Positive Impact)**

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium-High					**Degree of Mitigation: N/A**		
5	5	1	3.6	5	5	5	**18**

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.)

APPROVED AFFORDABLE OUTCOMES PROJECT

The following criteria was used, in the approved EMPR of the PR Holder, to assign significance to the potential impacts.

SEVERITY:

Low negative impact	**I**ndicates a state of 'calmness' concluding that the effect the operations may have on the environment is so insignificant that the wellbeing of the environment or any individual will not be degraded or prohibited.
Medium negative impact	Describes a state of 'manageable stress', giving the idea of that the effect of the operations on the environment is significant enough to cause tolerable disturbance to the wellbeing or overall conditions of the environment or any individual.)
High negative impact	Indicating a state of 'high stress', meaning that the effect of the operations on the environment is so significant that the wellbeing and overall conditions of the environment or any individual will be degraded or prohibited.

DURATION:

Short-term	Short-term duration is rated as a period less than two years and indicated as a low impact.
Medium-term	Medium-term impact is rated as the period between 2 and 5 years and indicated as a medium impact.
Long-term	Long-term impact is rated as the any period exceeding 5 years and indicated as a high impact.

SPATIAL SCALE:

Localized	The disturbance occurs within a radius of 500 m from point of existence and indicated as low impact.

Fairly widespread The disturbance is carried over a short distance, between 500 m and 1 km radius from point of existence and indicated as medium impact.

Widespread Disturbance exercise a negative affect over an area greater than 1 km radius from point of existence and indicated as high impact.)

CONSEQUENCE:

Low consequence Meaning that the probability of cumulative impact occurrence is minimal with little to no lasting effects and is indicated as low impact.

Medium consequence Meaning that the probability of cumulative impact occurring exists with a moderate, short-term lasting effect and is indicated as medium impact.

High consequence Meaning that the probability of cumulative impact occurrence is absolute with a short to medium-term lasting effect and indicated as high impact.

SIGNIFICANCE:

Low overall significance The disturbance caused by the impact is minimal with an excellent probability for total recovery after operations ceased.

Medium overall significance The disturbance caused by the impact is moderate with a good chance for total recovery over an intermediate period after operations ceased.

High overall significance The disturbance caused by the impact is severe with a poor to no probability for recovery after operations ceased.

LEGEND FOR TABLE

Se = Severity
D = Duration
SP = Spatial scale
C = Consequence
P = Probability

L = Low negative impact
M = Medium negative impact
H = High negative impact
pos = Positive impact

SECTION 102 APPLICATION

Methodology for the assessment of the potential environmental, social and cultural impacts.

DEFINITIONS AND CONCEPTS:

Environmental significance:

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

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

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

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

Impact

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

Consequence

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

Likelihood

A qualitative term covering both probability and frequency.

Frequency

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

Probability

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

Environment

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

Methodology that will be used

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

Environmental Significance = Overall Consequence X Overall Likelihood

Determination of Overall Consequence

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

Determination of Severity / Intensity

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

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

Table 9: Table to be used to obtain an overall rating of severity, taking into consideration the various criteria.

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

Type of criteria	Rating				
	1	2	3	4	5
Biophysical (Air quality, water quantity and quality, waste production, fauna and flora)	Insignificant change / deterioration or disturbance	Moderate change / deterioration or disturbance	Significant change / deterioration or disturbance	Very significant change / deterioration or disturbance	Disastrous change / deterioration or disturbance

Determination of Duration

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

Table 10: Criteria for the rating of duration.

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

Determination of Extent/Spatial Scale

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

Table 11: Criteria for the rating of extent / spatial scale.

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

Determination of Overall Consequence

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

Table 12: Example of calculating overall consequence.

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

Determination of Likelihood:

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

Determination of Frequency

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

Table 13: Criteria for the rating of frequency.

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

Determination of Probability

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

Table 14: Criteria for the rating of probability.

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

Overall Likelihood

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

Table 15: Example of calculating overall likelihood.

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

Determination of Overall Environmental Significance:

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

Table 16: Determination of overall environmental significance.

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

Qualitative description or magnitude of Environmental Significance

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

Table 17: Description of environmental significance and related action required.

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

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

High — Of the highest order possible within the bounds of impacts which could occur. In the case of negative impacts, there would be no possible mitigation and / or remedial activity to offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit.

Medium-High — Impacts of a substantial order. In the case of negative impacts, mitigation and / or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these. In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.

Medium — Impact would be real but not substantial within the bounds of those, which could occur. In the case of negative impacts, mitigation and / or remedial activity would be both feasible and fairly easily possible, In case of positive impacts; other means of achieving these benefits would be about equal in time, cost and effort.

Low-Medium — Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and / or remedial activity would be either easily achieved of little would be required, or both. In case of positive impacts

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

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)

As explained earlier, Project Alternative 1 entails the prospecting of the proposed 337.9299 ha footprint area through percussion drilling and bulk sampling. Project Alternative 1 was identified as the preferred and only project alternative due to the following:

- The approved PR footprint encompasses the proposed ±5 ha area and therefore the extension area can easily be incorporated into the prospecting programme;
- The addition of the extension area will allow the PR Holder to add another bulk sampling site to the prospecting programme.
- The DMRE issued an EA for the mining of the proposed extension area, thereby confirming that no sensitive areas were identified that deters mining/mining related activities;
- Upon closure, the land use of the prospecting area can be returned to the landowner and lawful occupiers.

APPROVED AFFORDABLE OUTCOMES PROJECT – POTENTIAL POSITIVE IMPACTS:

- Rehabilitation of the prospecting area.

APPROVED AFFORDABLE OUTCOMES PROJECT – POTENTIAL NEGATIVE IMPACTS:

DRILLING:

- Noise disturbance;
- Air quality loss;
- Soil pollution;
- Soil compaction; and
- Littering pollution.

BULK SAMPLING:

- Vegetation loss;
- Noise disturbance;
- Air quality loss;
- Soil pollution;
- Soil compaction;
- Littering pollution;
- Water pollution;
- Potential impact on communities, individuals and competing land users;

CUMULATIVE IMPACTS:

- Soil erosion;
- Groundwater contamination.

SECTION 102 APPLICATION – POTENTIAL POSITIVE IMPACTS:

- The proposed ±5 ha extension area can easily be incorporated into the approved prospecting programme;
- Upon closure, the land use of the prospecting area can be returned to the landowner and lawful occupiers.

SECTION 102 APPLICATION – POTENTIAL NEGATIVE IMPACTS:

OPERATIONAL PHASE – PROSPECTING AND BULK SAMPLING

- Visual intrusion due to prospecting operation;
- Dust nuisance due to prospecting activities;
- Noise nuisance due to prospecting activities;
- Soil contamination associated with littering and hydrocarbon spills;
- Negative impact on the natural vegetation of the footprint;
- Infestation of the prospecting area with invader plant species;
- Potential impact on fauna within the footprint area;
- Potential impact on areas/infrastructure of heritage or cultural concern;
- Deterioration of the access road due to the prospecting area;
- Potential impact on the management and use of the Rooifontein Game Farm.

DECOMMISSIONING PHASE

- Safety risk posed by uncapped boreholes or open excavations left by contractor;
- Potential impact associated with litter/hydrocarbon spills left in the prospecting area; and/or
- Erosion of access roads or vehicle tracks.

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 mitigation 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)

APPROVED AFFORDABLE OUTCOMES PROJECT

(Information extracted from the approved Affordable Outcomes Environmental Management Plan)

The approved EMPR of the PR Holder proposes the following mitigation measures:

Workshop:

- The workshop will be a barn-like structure with a cemented floor.
- All chemical spillage on the floor will be treated to break them down into their natural components before cleaning of the floor.
- Unusable vehicle and machinery parts will be discarded in a container supplied in the scrap yard.
- Old diesel and/or oil and related chemicals must be discarded within appropriate marked closed containers and stored in the chemical warehouse till removal thereof.
- Hand and machinery parts will be washed in a chemical soap, which can breakdown the oil substance in the water. This used water can be recycled to a storage tank at the ablution block for flushing the toilets where after sceptical chemicals will be used in the septic tank to neutralize the negative agents.

Wash-bay:

- The wash-bay need to have a cemented floor at a gradient of 2° with a channel at the bottom to relay the water, which connect to a pipe for further relaying to a specific target site.
- The remaining three sides of the floor must have at least a 30 cm wall, preventing unwanted spillage of used water.
- If possible recycled water from the plant site can be used for this purpose and if possible returned to the evaporation dam.
- Only bio-degradable detergent must be used for this purpose to ensure possible recyclability.
- It must be ensured that electrical cords and plugs are safe from any water contact.

Diesel storage:

- Diesel tanks will stand in a leak proof bay, supporting the tank volume plus 10% and a 1 m wide cement buffer will encircle the area.
- The floor area must be constructed at a gradient and a run-off sump to capture all contaminated water to be treated by a separator.

- Vehicles which are filled with fuel will park on a cement floor for if any spillage occurs it can be cleaned.
- Two fire extinguishers will be present at all times.

Chemical warehouse:

- Storage facilities will consist of an enclosed room, consisting of a lockable entrance and cemented floor.
- All chemical containers will be standing in a waterproof bay supporting the container volume plus 5%.
- Stored chemicals must be in marked closed containers.
- For remediation purposes a neutralizing agent for each chemical must be available at the entrance of the room at all times.
- Unused chemicals must be separated from used chemicals as well as each type of chemical will be grouped to prevent cross contamination.
- Chemicals removed from storage will be in approved containers to minimize the possibility of spillage.
- Safety wear for workers will always be available for urgent situations.
- Fire extinguishers for this purpose will be available at all times.

Scrap yard:

- Is a fenced of area, clearly marked and must be kept clear of all vegetation.
- Waste types need to be separated in their different groups e.g. tin and steel are separated, as well as unusable items which needs to be removed.

Vehicle storage:

- A demarcated fenced of area away from the operational site will be cleared for vehicle storage and parking
- Areas must be continuously inspected for spillages and remediated.
- Drip pans will be readily available and no parked heavy vehicle will be without a drip pan

Sanitation:

- Concealed septic tanks must be installed above ground, where it can be regularly inspected for leakage.
- Where showers and basins are installed, the draining water can be gathered in a septic tank from where the toilets can be flushed if possible.
- Ablution blocks shall be at all times be sanitised.
- Sanitary bins will be provided within the building; no sanitary material will be allowed within the septic tanks.

Operational procedures:

- The plant site, office sites and excavation sites will be fenced off with security gates to prevent any injuries of individuals and/or wild animals.
- Roads and the amount of roads will be planned and constructed with the minimal impact on the environment.
- All vehicular traffic is restricted to the roads and to a speed of 20km/h for heavy vehicles and 40km/h for light weight vehicles.
- Suppression of dust on the roads will occur by the spraying of chemical bounded/fresh/recycled water from the plant site.
- Frequent dust monitoring activities will be lodge through consulting dust specialists to maintain acceptable dust standards.
- At excavation sites the only necessary vegetation will be cleared.
- On vegetation clearing, should any nests with chicks or eggs are discovered a local nature conservation officer shall be called to relocate the species.
- Littering of any product, including cigarette buds, at any operational site shall be seen as an offence and will not be tolerated.
- The contractor shall be responsible for any clean up resulting from the failure by his employees or suppliers.
- The contractor shall ensure that all suppliers and the delivery drivers are aware of procedures and restriction in terms of this document.
- No vehicle repairs and maintenance will occur within the operational area and are restricted to be workshop.
- All related chemicals must be handled to minimize spillage and if any occur, it must be dealt with according the relevant remediation measures.
- Washing of equipment shall be restricted to urgent maintenance requirements only.
- Several sites will be identified and colour coded water tanks will be erected for safe human water consumption
- Clean and contaminated water will be stored separately at selected demarcated sites for each and clearly marked.
- Water use in washing of the gravel will be partially from the recycle pan.
- All water obtained from the washing of ore will be recycled and stored in the recycle/evaporation pan for future use.
- The contractor shall restrict all operations that result in undue Noise disturbance to local communities to day light hours on week days.
- The contractor shall warn all local communities and/or residents that could be disturbed by noise generating activities well in advance and shall keep such activities to a minimum.

- The contractor shall be responsible for compliance with the relevant legislation with respect to noise.

Topsoil, stock and wastes:

- Where top soils and overburden are removed it will be separately stored for final rehabilitation purposes.
- Stock pile dumps will be placed near the plant site efficient mineral processing procedures.
- Waste dumps will be stored and used for backfilling after prospecting operations ceased.
- Exposed soil and material stock piles shall be protected against wind erosion and the location of the stockpiles shall be taken into consideration the prevailing wind direction and locations of sensitive receptors.
- Soil shall be exposed for a minimum time as possible once cleared of vegetation. The timing of clearing shall be co-ordinated as much as possible to avoid prolonged exposure to wind and water erosion.

Rehabilitation:

- Continuous rehabilitation is as important to the environment as that of closure rehabilitation.
- All chemical spills will be rehabilitated immediately.
- Rip and rehabilitate all unused roads and access ways
- Any erosion channels developed during the project period shall be back-filled and the areas restored to a proper condition.
- Stabilisation of cleared areas to prevent and control erosion and or sedimentation shall be actively managed.
- Rehabilitation will be finalized by the planting of indigenous species, with regular inspections for the removal of invader/pioneer species.

Safety:

- Communication with the Rooifontein Wildlife Club and the landowner will be maintained during the hunting season for the safety of workers as well as tourists.
- Employees at the chemical storage area will be supplied with safety clothing and during the cleaning of spillage it is advisable that chemical resistant boots and hand gloves are worn.
- Fire extinguishers will be kept in good order and serviced regularly and installed at all fire hazardous areas.
- Vehicles will be equipped with a red flag on a long enough rod to be easily observed by the heavy vehicle drivers, yellow light at night and a roll bar.

- Hard hats, ear plugs, safety glasses, dust masks, gloves hard point boots, reflector vests and overalls will be supplied and is compulsory before entering the prospecting area.
- The bulk sampling entrance will be clearly marked with all regulatory signs, to indicate a potential dangerous zone.
- All buildings will consist of appropriate signs indicating function and potential dangers.
- All prospecting areas where driving occurs on a narrow potentially dangerous road, will be clearly marked with command/warning signs.
- Personnel need to be trained on Health and Safety matters in line with the Health and Safety act for mining/prospecting and in handling and the remediation of chemical spills.
- A specific group of a number of volunteers will be trained in the 1st two basic levels of first aid as well as firefighting to handle the following situations, till professional help arrives at site:
  - Fire outbreaks
  - Accidental injury
  - Injury incurred from animal attacks
  - Chemical burns
  - Sudden illnesses e.g. heart attack.

Remediation measures on accidental pollution:

- Accidental pollution is the accidental spillage of chemicals, oil, fuel or leakage of the storage tanks.
- Chemicals, oil and/or fuel spillages will be treated with a neutralizing agent.
- Chemical contaminated soil will be removed and appropriately stored till the removal thereof. Stored topsoil will be evenly spread to cover the area.
- Septic tank leakage will be handled by removal of the soil to be treated and the rehabilitation of the area thereafter.
- In the outbreak of a fire, the site will be evacuated. A special group of people, who is trained in this regard, will put the fire out and secure the area.
- The contractor shall be responsible for any clean up resulting from the failure by his employees or suppliers.

Waste management:

- Waste management is very crucial to a successful prospect with Health and Environmental awareness in the front line.
- All scrap metal will be stored separately, while all unused vehicle/machinery parts will be discarded within a provided container.
- During the course of prospecting all scrap in the scrap yard will be sold to the local scrap metal agencies, before tendering it to surrounding towns.

- At closure of the mine, the remaining scrap will be sold on a tender basis to all interested agencies.
- During closure rehabilitation, the scrap yard will be inspected and all chemical spillage obviated before the entire area is ripped and rehabilitated.
- After rehabilitation of the scrap yard is completed the fence will be removed and the environment left in a natural state.

Chemical waste

- Chemical and chemical containing waste will be stored in closed containers within the chemical storage room.
- Once the area specified for these wastes is approximately 80% full, the different agencies dealing with these specific chemicals will be contacted for the safe removal thereof.

Waste water

- As most of the waste water may be reused, it is not foreseen that waste water will be on any concern, but the following must be stated for future references:
- All waste water will be treated to be used in other areas requiring the use of water, but not necessarily require clean water.
- During closure the Department of Water and Sanitation will be contacted for the authorization and specific regulation on handling waste water.
- Waste water specialist will be contracted to help manage and clean the water for safe return to the environment if possible, otherwise the removal thereof to the recommended agencies.

Domestic waste

- The contractor shall ensure that all facilities are maintained in a neat and tidy condition and the site shall be kept free of litter.
- Containers will be installed and clearly marked for this purpose.
- The waste storage area shall be fenced off to prevent wind-blowing litter.
- It is preferable that people is aware of the splitting of waste into their different categories i.e. glass, plastic, paper, tin and other waste.
- No burning, on site burring of dumping of waste shall occur.
- Contracts with the local municipality/agencies will be signed for the removal of these containers on the appropriate schedule of once a week, but if found necessary twice a week.

Human waste:

- All human waste and related waste will be contained within septic tanks installed for this purpose.
- Septic tanks and chemical toilettes will be chemically treated and maintained by a contracting agency.
- The local municipality will be contracted on the draining of the septic tank and the removal of its contents to the sewerage plant of their choice.
- Sanitation material within the bins provided will be closed in coloured plastics and disposed of with domestic waste.

Other relevant waste:

- Old tyres will be removed and sold to the appropriate agencies.
- Old fencing material will be handled as scrap metal.

SECTION 102 APPLICATION

The following mitigation measures are proposed to address/minimize the impact of the prospecting activity on the receiving/surrounding environment.

TOPOGRAPHY

Landscaping of Prospecting Area:

The decommissioning phase must entail the

- sealing and capping of the drill holes;
- removal of all the prospecting infrastructure and equipment from the processing area;
- refilling, topsoiling and landscaping of the bulk sampling pits/trenches, and
- the decommissioning of the evaporation dams.
- The PR Holder must also comply with the minimum closure objectives as prescribed by DMRE and detailed in this report.

VISUAL CHARACTERISTICS

Visual Mitigation:

The risk of the prospecting activities having a negative impact on the aesthetic quality of the surrounding environment is deemed to be of low significance should the following mitigation measures be implemented:

- Prospecting must be contained to the approved boundaries.
- Every borehole and bulk sampling site must have a neat appearance and be kept in good condition at all times.

- Vegetation removal must be limited, and the removal of large trees (>20 cm stem) or vegetation of significance (identified by an ECO) must be avoided as far as possible.
- Upon closure all the disturbed prospecting areas must be rehabilitated and landscaped to address any residual impact.

AIR AND NOISE QUALITY

Fugitive Dust Emission Mitigation:

The risk of dust, generated due to the prospecting activities, having a negative impact on the surrounding environment can be reduced to being low through the implementation of the following mitigation measures:

- The liberation of dust into the surrounding environment must be effectively controlled (when applicable) by the use of, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products).
- Speed on the access road must be limited to 40 km/h to prevent the generation of excess dust.
- Areas devoid of vegetation, which could act as a dust source, must be minimized.
- All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).

Noise Handling:

The risk of noise, generated by the prospecting activity, having a negative impact on the surrounding environment can be reduced to being low-medium through the implementation of the mitigation measures listed below:

- The PR Holder must ensure that employees and staff conduct themselves in an acceptable manner while on site.
- No loud music may be permitted at the prospecting area.
- All project related vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).
- Best practice measures shall be implemented in order to minimize potential noise impacts.

GEOLOGY AND SOIL

Waste Management:

The risk of uncontrolled waste generation having a negative impact on the surrounding environment can be reduced to being low through the implementation of the mitigation measures listed below:

- Regular vehicle maintenance, repairs and services may only take place at a designated workshop and service area. When a breakdown occurs, the contractor must arrange for the removal of the machine, within 6 hours, to a recognised workshop where it can be mended.
- Ablution facilities must be provided in the form of a chemical toilet that is placed near the area being prospected. The chemical toilet must be serviced at least once every week for the duration of the prospecting activities.
- The use of any temporary, chemical toilet facilities may not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the PR Holder.
- If a diesel bowser is used on site, it must be equipped with a drip tray at all times. Drip trays must be used during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling.
- Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site.
- A spill kit must be available on-site which can be operated by trained employees for the *ad hoc* remediation of minor chemical and hydrocarbon spillages.
- Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility.
- Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. Proof must be filed.
- General waste must be contained in refuse bins with lids that is regularly removed from the prospecting area to a recognised general waste landfill site.
- No waste may be buried or burned on the site.
- No chemicals or hazardous materials may be stored at the prospecting area.
- It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the activities is reported to the Department of Water and Sanitation and other relevant authorities.

HYDROLOGY

Storm Water Mitigation:

The following mitigation measures are proposed regarding storm water handling:

- Drainage must be controlled to ensure that runoff from the prospecting area does not culminate in off-site pollution, flooding or result in damage to storm water discharge points.
- Storm water must be diverted around the access roads and/or tracks to prevent erosion.
- Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system (if applicable).
- Dirty water must be collected and contained in a system separate from the clean water system.
- Dirty water must be prevented from spilling or seeping into clean water systems.

GROUNDCOVER

Mitigating the Potential Impact on Vegetation Cover:

The risk of the prospecting activity having a negative impact on the vegetation cover of the footprint can be reduced to being low through the implementation of the mitigation measures listed below:

- All areas outside the prospecting boundary must be declared a no-go area, and all employees must be educated accordingly.
- No plants may be removed without the approval of an environmental control officer (ECO).
- Permits must be obtained from the Department of Nature Conservation before any *Boscia albitrunca* (Shepherds Tree) is removed.
- The large *Vachelia tortilis* (Umbrella Thorn) on the site (within the ±5 ha) must be retained as far as possible due to its significant age and size.
- Seedlings of the trees on the site, *Vachellia tortilis*, should be re-established on the site if any trees have to be removed to allow for prospecting.
- Vehicle traffic must as far as possible be contained to the exiting farm roads. No crisscrossing through undisturbed areas may be allowed.

Management of Invasive Plant Species:

The risk of weeds or invader plants invading the disturbed area can be reduced to being low through the implementation of the mitigation measures listed below:

- An invasive plant species management plan must be implement on site to control weeds and invasive plants on denuded- and reinstated areas in terms of the NEM:BA, 2004 and CARA, 1983.
- Management must take responsibility to control declared invader or exotic species that germinate on rehabilitated areas. The following control methods can be used:
  - The plants can be uprooted, felled or cut off and can be destroyed completely.
  - The plants can be treated chemically by a registered pest control officer (PCO) through the use of an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.

FAUNA

Protection of Fauna:

The risk resulting from the prospecting activity on the fauna of the footprint area as well as the surrounding environment, can be reduced to low through the implementation of the mitigation measures listed below:

- The prospecting area must be fenced.
- The site manager must ensure no fauna is caught, killed, harmed, sold or played with.
- Workers must be instructed to report any animals that may be trapped in the working area.
- No snares may be set or nests raided for eggs or young.

CULTURAL AND HERITAGE ENVIRONMENT

Archaeological, Heritage and Palaeontological Aspects:

The impact on archaeological, heritage and palaeontological aspects, as a result of the prospecting activities, can be reduced to being low-medium through the implementation of the mitigation measures listed below:

- An archaeologist must approve the drilling and bulk sampling positions prior to commencement of the project.
- All prospecting must be confined to the approved footprint area.
- Known heritage resources must be avoided with a buffer zone of 30 m.
- Existing roads must be used as far as possible.
- Any future listed activity (not yet approved) must be subjected to an HIA.
- If during the operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.

- It is the responsibility of the senior on-site manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.
- The senior on-site manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify SAHRA.
- Work may only continue once the go-ahead was issued by SAHRA.

EXISTING INFRASTRUCTURE

Access Road and Infrastructure Management:

The impact on the access road, as a result of the prospecting activities, can be reduced to being low through the implementation of the mitigation measures listed below:

- Storm water must be diverted around the access road to prevent erosion.
- Vehicular movement must be restricted to the existing access road and crisscrossing of tracks through undisturbed areas must be prohibited.
- Rutting and erosion of the access road caused as a direct result of the prospecting activities must be repaired by the PR Holder.
- Prior to commencement, all contractors must sign an agreement confirming their responsibility towards the movement of their employees.
- Damages to fences (by prospecting employees) must be repaired/reinstated by the responsible contractor. Losses, due to gates left open by prospecting employees, must be compensated by the responsible entity.

EXISTING INFRASTRUCTURE

Management of prospecting in accordance with the Rooifontein Game Farm operations:

The impact on the management and operation of the Rooifontein Game Farm, as a result of the prospecting activities, can be reduced to being low-medium through the implementation of the mitigation measures listed below:

- The bulk sampling sites must be fenced for the duration of the operational phase. Access must be controlled and no unauthorised person may enter the prospecting area.
- The PR Holder must implement progressive rehabilitation, whereby each bulk sampling pit/trench is reinstated and landscaped prior to the opening of the consecutive pit/trench.
- All prospecting related vehicles/machinery must remain on the existing roads and adhere to the speed limit at all times.
- The mitigation measure with regard to dust-, noise-, safety- and fauna- and vegetation management as proposed in this report must be adhered to at all times.

GENERAL

Management of Health and Safety Risks:

The following mitigation measures are proposed to minimise the potential health and safety impacts:

- Adequate ablution facilities and water for human consumption must daily be available on site.
- Workers must have access to the correct personal protection equipment (PPE) as required by law.
- All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).
- Boreholes must daily be covered even if prospecting will continue the following day. Upon closure all boreholes must be sealed off and capped as prescribed in the rehabilitation plan.

ix) Motivation where no alternative sites were considered.

As mentioned previously, DMRE approved the prospecting activity and footprint (±333 ha) in 2020, and therefore no site alternatives apply to the current prospecting operations.

Project Alternative 1 was identified as the only project alternative with regard to the S102 application as the approved PR footprint encompasses the proposed ±5 ha area, the DMRE already issued an EA for the mining of the earmarked area (±5 ha), thereby confirming that no sensitive areas were identified that deters mining/mining related activities, and upon closure the prospecting area can be returned to the landowner and lawful occupiers. Due to the position of the ±5 ha area no viable site alternatives were identified.

x) Statement motivating the alternative development location within the overall site.
(Provide a statement motivating the final site layout that is proposed)

Project Alternative 1 was identified during the assessment phase of the environmental impact assessment as the preferred and only site alternative. The following matters contributed to the identification of the preferred project proposal:

1. **Topography** – The bulk sampling phase of the prospecting activities will have a temporary impact on the topography of the area. However, upon rehabilitation of the pits/trenches and removal of the prospecting infrastructure, the topography of the study area should be restored to its pre-prospecting state. The potential for the prospecting activities to negatively impact the topography of the study area is of low significance as the activity will have no residual impact on the environment upon closure of the PR.

2. **Visual Characteristics** – The viewshed analysis showed that the visual impact of the prospecting operation will be of low significance. The small scale of the proposed operation, and the proposed progressive rehabilitation of the prospecting area contributes to the low visual significance. Should the PR Holder successfully rehabilitate the drilling and bulk sampling sites (upon closure), no residual visual impact is expected upon closure.

3. **Air and Noise Quality** – Should the PR Holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance. The potential impact on the noise ambiance of the receiving environment is expected to be of low-medium significance and representative of the current land use.

4. **Geology and Soil –** The invasive phases (2 and 3) of the proposed activity will temporarily affect ±1 ha of the approved footprint area. The PR Holder proposes to implement progressive rehabilitation where one bulk sampling site will be reinstated prior to the opening of a consecutive pit/trench. The decommissioning phase will entail the sealing and capping of the drill holes; removal of all the prospecting infrastructure and equipment from the processing area; refilling, topsoiling and landscaping of the bulk sampling pits/trenches and the decommissioning of the evaporation dams. No residual impact is expected.

5. **Hydrology –** No wetlands, drainage lines or watercourses occur on or near the ±5 ha extension area that may be affected should the S102 application be approved. Further to the above, the PR Holder proposes that the main water supply will be from the Kimberley Municipality's water works sites, and that recycled water will also be used during the mineral processing activities. All excess water, after dewatering at the plant, will be stored within an evaporation dam for recycling purposes. The main purpose of the evaporation dam is to store and recycle water during the prospecting activities.

6. **Groundcover –** The ecologist concluded that the ±5 ha extension area was modified to a large degree, notably disturbed and that no vegetation species or ecological function of high conservation significance occur on the site. No rare or endangered species were identified within the footprint area (±5 ha). However, the protected Shepherds Tree (*Boscia albitrunca*) and the large Umbrella Thorn (*Vachellia tortilis*) must be retained if possible.

7. **Fauna -** The fauna within the PR footprint will not be impacted by the prospecting activities as they will be able to move away or through the site, without being harmed. Workers will be educated and managed to ensure that no fauna of the site is harmed. It was proposed that the bulk sampling sites have to be fenced at all times.

8. **Cultural and Heritage Environment** – The AIA concluded that the ±5 ha extension area is located within a historical mining area that forms part of a historically significant landscape central to the Kimberley Diamond Rush of the 1870's and the area is therefore considered to be of high historical (and historical archaeological) significance. The archaeologist advised against the mining of the footprint area (±5 ha) as it would likely have an adverse effect on the integrity of Kimberley's historical landscape. It is proposed that the prospecting (instead of mining) of the area will entail the disturbance of an area of 200 m² allowing for one bulk sampling pit/trench. Should the S102 application be approved, the footprint of the bulk sampling pit/trench must be determined in consultation with an archaeologist, and the mitigation measures proposed in this report must be strictly adhered to.

9. **Site Specific Infrastructure** – No prospecting activities are planned over any of the existing structures on the farm. The Olifantsfontein Hotel will remain intact, and will not be disturbed by the prospecting programme. Other infrastructure within the PR footprint comprises of farm roads and fences. None of these structures will be impacted by the prospecting activities.

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

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

The following section provides a description of the findings and recommendations of the BAR, inclusive of the relevant specialist studies, and its associated impact on the receiving and surrounding environment. The impacts and risks associated with the prospecting operation were separated into the impacts associated with the **Approved Affordable Outcomes Project**, and those associated with the **S102 Application**.

APPROVED AFFORDABLE OUTCOMES PROJECT

The following impacts are those listed in the approved EMPR of the PR Holder.

Drilling:

- Noise disturbance:

  During the drilling activities noise is generated by the machinery. The noise will be much localized and may have an impact on nearby tourist or game roaming the area. However, the impact can be regarded as low to medium as the game will move away from the area of disturbance, but shall return once activities and the source of disturbance stopped.

- Air quality loss:

  Dust will be generated during the percussion drilling activities. The dust generated may have an impact on the air quality with localized effect and may have an impact on the aesthetics of the area.

- Soil Pollution:

  Chemical soil pollution is always a possibility during mechanical prospecting operations. Working machinery and storage facilities bears a risk for chemical spillage and the impact thereof may be very severe.

- Soil compaction:

  Heavy vehicles driving off-road bears a great risk to the trampling of vegetation and the compaction of the soil.

- Littering pollution:

  Littering during the prospecting activities can happen and may have a low to medium impact on the environment depending on the type of littering and the remediation thereof.

Bulk Sampling:

- Vegetation loss:

  A total area of ±0.02 ha will be clear of vegetation for the bulk sampling excavation process and at maximum 0.49 ha for plant site establishment. The impact can be regarded as low to medium with no long term effects. If rehabilitation of these areas is done correctly full recovery of the environment is possible.

- Noise disturbance:

  During excavation, hauling and mineral processing activities noise is generated by the machinery. The noise will be much localized and may have an impact on nearby tourist or game roaming the area. However, the impact can be regarded as low to medium as the game will move away from the area of disturbance, but shall return once activities and the source of disturbance stopped.

- Air quality loss:

  Dust will be generated during the excavating and hauling activities. The dust generated may have an impact on the air quality with localized effect and may have an impact on the aesthetics of the area.

- Soil pollution:

  Chemical soil pollution is always a possibility during mechanical prospecting operations. Working machinery and storage facilities bears a risk for chemical spillage and the impact thereof may be very severe.

- Soil compaction:

  Heavy vehicles driving off-road bears a great risk to the trampling of vegetation and the compaction of the soil. The plant site area will also become compacted during the duration of the mine. If not rehabilitated vegetation re-growth is unforeseen and poses a medium risk to the environment.

- Littering pollution:

  Littering during the prospecting activities can happen and may have a low to medium impact on the environment depending on the type of littering and the remediation thereof.

- Water pollution:

  Chemical contaminated water from the mineral processing plant and storage facilities bears a risk to the environment. This impact should always be regarded as high and proper mitigation and/or remediation measures should be in place.

- Potential impact on communities, individuals and competing land users in close proximity:

  The prospecting activities may have a low negative impact on the current/competing land use of the farm such as tourist activities and hunting. The activities may be relocated to another part of the farm, but can still be operational during prospecting activities. Individuals using the farm for recreational purposes may be partially impacted by the prospecting activities, but can still enjoy the rest of the Rooifontein farm without any negative influence from the prospecting activities. Some community members will be positively impacted by the prospecting operations in the form of employment opportunities and at later stage career development initiatives when prospecting proves feasible enough for a full scale mining right operations.

Rehabilitation:

- This should almost always have a positive impact on the environment depending on the correctness of the rehabilitation process. Improper rehabilitation could negatively impact the environment in the short term, but long term effect may turn out to the positive with limited effect.

Cumulative Impacts:

- Soil erosion may occur when vegetation loss is severe and not re-established within a relatively short period of time. The main impact may lead to soil erosion is the loss of vegetation, soil pollution and soil compaction.

- Ground water contamination may occur during the raining season when runoff water enters nearby open surface water bodies. When this runoff water comes in contact with chemically polluted soil the chance for water contamination is high.

The impact significance was determined for each impact after brining the mitigation measures into consideration and therefore represents the final layout/activity proposal.

Table 18: Table of potential impact of each main activity in each phase and corresponding significance assessment.

ACTIVITY	DESCRIPTION	Se	D	SP	C	P	Si
1. CONSTRUCTION PHASE IMPACTS							
Road construction	Loss of vegetation + habitat	L	L	L	L	L	L
Eskom line	Loss of vegetation + habitat	NOT APPLICABLE					
Plant construction	Loss of vegetation + habitat	L	L	L	L	L	L
Pipeline installation	Loss of vegetation + habitat	L	L	L	L	L	L
Offices	Loss of vegetation + habitat	L	L	L	L	L	L
2. OPERATIONAL PHASE IMPACTS							
Prospecting	Geological degradation	H	L	L	M	H	H
Disposal	Topographic changes – dump	H	L	L	H	H	H
Prospecting	Topographic change – pit	H	L	L	H	H	H
Prospecting	Soil pollution – accidental spills and leakages.	H	L	L	M	M	H
Operation	Soil pollution (workshop, store, parking)	H	L	L	M	M	H
Operation	Loss of grazing	L	L	L	L	L	L
Operation	Loss of or disturbance to plants	L	L	L	L	L	L
Extraction of groundwater	Depressed water table	NOT APPLICABLE					
Operation	Problem plant invasion	L	L	L	L	L	L
Operation	Effect on animals	L	L	L	M	M	L
*Waste water disposal	Water regime (regional)	L	L	L	L	L	L
Prospecting	Noise (earth moving equipment and crushers)	L	L	L	M	H	L
Operation	Air quality: Dust – Transport	L	L	L	M	H	L

ACTIVITY	DESCRIPTION	Se	D	SP	C	P	Si
Operation	Air quality: Dust – Crusher	L	L	L	L	H	L
Prospecting	Noise – blasting nuisance – regional	NOT APPLICABLE					
Prospecting	Noise – blasting nuisance – personnel	NOT APPLICABLE					
Prospecting	Loss of archaeological items	L	L	L	L	L	L
Operation	Sensitive landscapes	L	L	L	L	L	L
Prospecting	Visual impact	L	L	L	L	L	L
3. DECOMMISSIONING PHASE IMPACTS							
Demolition	Waste disposal	POSITIVE					
Rehabilitation	Re-vegetation	POSITIVE					
4. RESIDUAL IMPACTS AFTER CLOSURE							
Vacated site	Rehabilitation of exposed areas	POSITIVE					
Vacated site	Safety risks	POSITIVE					

All potential cumulative impacts can be regarded as medium in significance.

SECTION 102 APPLICATION:

During the impact assessment process associated with the S102 application, the following potential impacts were identified of each main activity in each phase. An initial significance rating (listed under *Part A(1)(h)(v) Impacts and Risks Identified*) was determined for each potential impact should the mitigation measures proposed in this document not be implemented on-site. The impact assessment process then continued in identifying mitigation measures to address the impact that the prospecting activity may have on the surrounding environment.

The significance rating was again determined for each impact using the methodology as explained under *vi) Methodology Used in Determining and Ranking the Significance*. The impact ratings listed below was determined for each impact **after** bringing the proposed mitigation measures into consideration and therefore represents the final layout/activity proposal.

OPERATIONAL PHASE – PROSPECTING AND BULK SAMPLING

Visual intrusion due to prospecting operation

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium					**Degree of Mitigation: No mitigation**		
2	3	1	2	4	5	3	**6**

Dust nuisance due to prospecting activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
2	1	2	1.7	2	2	2	**3.4**

Noise nuisance due to prospecting activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium					**Degree of Mitigation: Partial**		
2	3	2	2.3	3	3	3	**6.9**

Soil contamination associated with littering and hydrocarbon spills

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
3	1	1	1.6	2	1	1.5	**2.4**

Negative impact on the natural vegetation of the footprint

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
2	3	1	2	2	1	1.5	**3**

Infestation of the prospecting area with invader plant species

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
2	1	2	1.6	2	2	2	**3.2**

Potential impact on fauna within the footprint area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
2	1	1	1.3	2	1	1.5	**2**

Potential impact on areas/infrastructure of heritage or cultural concern

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium					**Degree of Mitigation: Full**		
4	5	5	4.7	2	1	1.5	**7.1**

Deterioration of the access road to the prospecting area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
2	2	2	2	2	2	2	**4**

Potential impact on the management and use of the Rooifontein Game Farm

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium					**Degree of Mitigation: Full**		
2	2	2	2	3	4	3.5	**7**

DECOMMISSIONING PHASE

Safety risk posed by uncapped boreholes or open excavations left by contractor

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
3	1	1	1.6	2	1	1.5	**2.4**

Potential impact associated with litter/hydrocarbon spills left in the prospecting area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
3	1	1	1.7	2	1	1.5	**2.6**

Erosion of access roads or vehicle tracks

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
2	3	1	2	2	1	1.5	**3**

Return of prospecting area to agricultural use **(Positive Impact)**

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium-High					**Degree of Mitigation: Full**		
5	5	1	3.6	5	5	5	**18**

j) Assessment of each identified potentially significant impact and risk

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

Table 19: Assessment of each identified potentially significant impact and risk

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
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.)	(E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, air pollution, etc…etc…etc.)		In which impact is anticipated. (E.g. Construction, commissioning, operational Decommissioning closure, post closure.)	If not mitigated.	(modify, remedy, control, or stop) through (e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc etc) E.g. Modify through alternative method Control through noise control Control through management and monitoring through rehabilitation.	If not mitigated.
SECTION 102 APPLICATION						
➢ Prospecting and Bulk Sampling	➢ Visual intrusion due to prospecting operation.	The visual impact may affect the aesthetics of the landscape.	Operational Phase	➢ Low-Medium	<u>Control:</u> Implementing proper housekeeping.	➢ Low-Medium
➢ Prospecting and Bulk Sampling	➢ Dust nuisance due to prospecting activities.	Increased dust generation will impact on the air quality of the receiving environment.	Operational Phase	➢ Low-Medium	<u>Control:</u> Dust suppression methods and proper housekeeping.	➢ Low
➢ Prospecting and Bulk Sampling	➢ Noise nuisance due to prospecting activities.	Should noise levels become excessive it	Operational Phase	➢ Medium	<u>Control:</u> Noise suppression methods and proper housekeeping.	➢ Low-Medium

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
		may have an impact on the noise ambiance of the receiving environment.				
➢ Prospecting and Bulk Sampling ➢ Decomissioning	➢ Soil contamination assocated with littering and hydrocarbon spills. ➢ Potential impact assocaited with litter/hydrocarbon spills left in the prospecting area.	Contamination of the footprint area will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to the PR Holder.	Operational Phase	➢ Low-Medium ➢ Low-Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan.	➢ Low ➢ Low
➢ Prospecting and Bulk Sampling	➢ Negative impact on the natural vegeation of the footprint.	This will impact on the biodiversity of the receiving environment.	Operational Phase	➢ Low-Medium	Control: Minimise the removal of vegetation and confining vehicular traffic to existing roads/tracks.	➢ Low
➢ Prospecting and Bulk Sampling	➢ Infestation of the prospecting ara with invader plant species.	This will impact on the biodiversity of the receiving environment.	Operational Phase	➢ Low-Medium	Control: Implementing invader plant control measures.	➢ Low
➢ Prospecting and Bulk Sampling	➢ Potential impact on fauna within the footprint area.	This will impact on the biodiversity of the receiving environment.	Operational Phase	➢ Medium	Control & Stop: Implementing good management practices.	➢ Low
➢ Prospecting and Bulk Sampling	➢ Potential impact on area/infrastructure of heritage or cultural concern.	This could impact on the cultural and heritage legacy of the receiving environment.	Operational Phase	➢ Low-Medium	Control & Stop: Implementing good management practices, as well as the chance-find protocol.	➢ Low-Medium

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
➢ Prospecting and Bulk Sampling ➢ Decommissioning	➢ Deterioration of the access road to the prospecting area. ➢ Erosion of access roads or vehicle tracks.	Collapse of the road infrastructure will affect the landowners.	Operational Phase	➢ Low-Medium ➢ Low-Medium	Control & Remedy: Maintaining the access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to prospecting.	➢ Low ➢ Low
➢ Prospecting and Bulk Sampling	➢ Potential impact on the managmenet and use of the Rooifontein Game Farm.	This will negatively impact the use of the footprint as a game farm for recreational purposes.	Operational Phase	➢ Medium	Control: Confining the prospecting activities to the smallest possible area and implementing progressive rehabilitation throughout the operational phase.	➢ Low-Medium
➢ Decommissioning and Rehabilitation	➢ Safety risk posed by uncapped boreholes or open excavations left by contractor.	Uncapped boreholes/excavations will pose a safety risk to the animals and humans of the area.	Operational Phase	➢ Low-Medium	Control: Implementing the mitigation measures and rehabiltiation plan.	➢ Low

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked Appendix K.

k) Summary of specialist reports.

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

Table 20: Summary of specialist reports

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
The following specialist studies formed part of the mining permit application submitted by Wheatfields Investments 168 (Pty) Ltd. The findings of the specialists were deemed applicable to this S102 application as the area of importance (±5 ha) is the same, and therefore the recommendations of the specialists were incorporated into this report.			
Archaeological Impact Assessment Phase 1 Archaeological Impact Assessment for a mining permit application on the Remainder of the farm Speculatie 217 (now Rooifontein 1722), Boshof District, FS Province. *(See Appendix J for a full copy of the document)*	**Recommendation:** "The proposed development footprint is located within an area considered to be of high historical (and historical archaeological) significance. The proposed development will likely have an adverse effect on the integrity of Kimberley's historical landscape. Further mining or mining related activities at Rooifontein 1722 are not advised."	The recommendation of the specialist was incorporated into this report, and the following was added: Prospecting of the area will entail the bulk sampling of one pit/trench within the footprint of the ±5 ha area with a maximum footprint disturbance of 200 m². It is suggested that the footprint of the bulk sampling pit/trench be determined in consultation with an archaeologist to prevent disturbance to any of the surrounding historical sites of importance, and that the mitigation measures proposed in this report strictly be followed at all times.	Part A(1)(h)(c) Description of specific environmental features and infrastructure on site – Site Specific Cultural and Heritage Environment. Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Archaeological, Heritage and Palaeontological Aspects.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
Biodiversity and Ecological Assessment Report on the biodiversity and ecological assessment of the proposed diamond mining operations at the Rooifontein Game Farm on the Remainder of the Farm Dutoitspan 119 (Rooifontein 1722) near Kimberley, Free State Province. *(See Appendix I for a full copy of the document)*	**The specialist made the following recommendations:** ➢ The monitoring and eradication of weeds will have to take place continuously and followed up after cessation of mining activities. ➢ Hunting, capturing and trapping of fauna should be prevented by making this a punishable offense during the construction phase. ➢ A permit should be obtained to remove any specimens of the protected *Boscia albitrunca* (Shepherds Tree) occurring on the site. ➢ The large *Vachellia tortilis* (Umbrella Thorn) on the site is not formally protected but should be retained as far as possible due to its significant age and size. ➢ Rehabilitation of the mining area should be comprehensive and should include the following: ➢ Spoil and tailings resulting from the mining operations should be returned to excavations in order to re-instate the topography of the site. ➢ Any slimes dam or storage facility should be demolished and material returned to excavations. The risk of groundwater pollution should also be determined. ➢ The topography of the site should be re-instated as far as possible. ➢ Eradication and monitoring of weed establishment should take place and should be extended after cessation of mining. ➢ The mined area should be seeded with vegetation from the surrounding area. ➢ Seedlings of the trees on the site, *Vachellia tortilis*, should be established on the site to replace those which were removed during mining. ➢ Topsoil should be removed prior to mining, protected from wind erosion and weed establishment and replaced on the site during rehabilitation.	All the recommendations proposed by the ecologist were deemed applicable to this S102 application and therefore included as mitigation measures in this report.	Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Groundcover.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
	➢ Adequate monitoring of rehabilitation success should be done and remedial action taken where required. ➢ After mining has ceased all manmade materials should be removed from the site, i.e. structures, concrete, waste, etc.		
Wetland Identification and Delineation Report Wetland identification and delineation report with regards to the application area of Wheatfield Investments (Pty) Ltd on a certain piece of land on the farm Rooifontein 1722. *(See Appendix H for a full copy of the document)*	**Conclusion:** "Based on the initial desktop study, it is clear that, considering the characteristics of the surface soils and absorption rate of water, none of the water from the direction of the application area, can or will reach the micro catchment areas of these two wetland situations identified. Would the water and waste management plan of the applicant be followed; the project will not influence any wetlands near it. As is the case, a site visit deems unnecessary to confirm what has already been determined though imagery."	The report did not make any suggestions that could be incorporated into the this report.	N/A

l) Environmental impact statement

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

The key findings of the environmental impact assessment entail the following:

Project Proposal

Affordable Outcomes CC submitted a Section 102 (S102) amendment application in terms of the MPRDA, 2002 to incorporate the ±5 ha extension area, previously applied for by Wheatfields Investments 168 (Pty) Ltd, into the approved PR footprint of 333.0435 ha. The S102 application necessitates an application for a Part 2 amendment of the holder's EMP in terms of GNR 326 Section 31, and further constitute listed/specified activities in terms of the NEMA: EIA Regulations, 2014 (as amended) and therefore requires a basic assessment process. The invasive prospecting phase will constitute the drilling of ±10 boreholes (RC and/or DD holes) followed by the bulk sampling of five pits/trenches. The proposed activity will necessitate the disturbance of ±1 ha of the approved PR footprint.

Topography

The bulk sampling phase of the prospecting activities will have a temporary impact on the topography of the area. However, upon rehabilitation of the pits/trenches and removal of the prospecting infrastructure, the topography of the study area should be restored to its pre-prospecting state. The potential for the prospecting activities to negatively impact the topography of the study area is of low significance as the activity will have no residual impact on the environment upon closure of the PR.

Visual Characteristics

The viewshed analysis showed that the visual impact of the prospecting operation will be of low significance. The small scale of the proposed operation, and the proposed progressive rehabilitation of the prospecting area contributes to the low visual significance. Should the PR Holder successfully rehabilitate the drilling and bulk sampling sites (upon closure), no residual visual impact is expected upon closure.

Air and Noise Quality

Should the PR Holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed

to be of low significance. The potential impact on the noise ambiance of the receiving environment is expected to be of low-medium significance and representative of the current land use.

Geology and Soil

The invasive phases (2 and 3) of the proposed activity will temporarily affect ±1 ha of the approved footprint area. The PR Holder proposes to implement progressive rehabilitation where one bulk sampling site will be reinstated prior to the opening of a consecutive pit/trench. The decommissioning phase will entail the sealing and capping of the drill holes; removal of all the prospecting infrastructure and equipment from the processing area; refilling, topsoiling and landscaping of the bulk sampling pits/trenches and the decommissioning of the evaporation dams. No residual impact is expected.

Hydrology

No wetlands, drainage lines or watercourses occur on or near the ±5 ha extension area that may be affected should the S102 application be approved. Further to the above, the PR Holder proposes that the main water supply will be from the Kimberley Municipality's water works sites, and that recycled water will also be used during the mineral processing activities. All excess water, after dewatering at the plant, will be stored within an evaporation dam for recycling purposes. The main purpose of the evaporation dam is to store and recycle water during the prospecting activities.

Groundcover:

The ecologist concluded that the ±5 ha extension area was modified to a large degree, notably disturbed and that no vegetation species or ecological function of high conservation significance occur on the site. No rare or endangered species were identified within the footprint area (±5 ha). However, the protected Shepherds Tree (*Boscia albitrunca*) and the large Umbrella Thorn (*Vachellia tortilis*) must be retained if possible.

Fauna

The fauna within the PR footprint will not be impacted by the prospecting activities as they will be able to move away or through the site, without being harmed. Workers will be educated and managed to ensure that no fauna of the site is harmed. It was proposed that the bulk sampling sites have to be fenced at all times.

Cultural and Heritage Environment

The AIA concluded that the ±5 ha extension area is located within a historical mining area that forms part of a historically significant landscape central to the Kimberley Diamond Rush of the 1870's and the area is therefore considered to be of high historical (and historical archaeological) significance. The archaeologist advised against the mining of the footprint area (±5 ha) as it would likely have an adverse effect on the integrity of Kimberley's historical landscape. It is proposed that the prospecting (instead of mining) of the area will entail the disturbance of an area of 200 m² allowing for one bulk sampling pit/trench. Should the S102 application be approved, the footprint of the bulk sampling pit/trench must be determined in consultation with an archaeologist, and the mitigation measures proposed in this report must be strictly adhered to.

Site Specific Infrastructure

No prospecting activities are planned over any of the existing structures on the farm. The Olifantsfontein Hotel will remain intact, and will not be disturbed by the prospecting programme. Other infrastructure within the PR footprint comprises of farm roads and fences. None of these structures will be impacted by the prospecting activities.

ii) Final Site Map

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

See the proposed site plan attached as Appendix D.

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

APPROVED AFFORDABLE OUTCOMES PROJECT – POTENTIAL POSITIVE IMPACTS:

- Rehabilitation of the prospecting area.

APPROVED AFFORDABLE OUTCOMES PROJECT – POTENTIAL NEGATIVE IMPACTS:

DRILLING:

- Noise disturbance;
- Air quality loss;

- Soil pollution;
- Soil compaction; and
- Littering pollution.

BULK SAMPLING:

- Vegetation loss;
- Noise disturbance;
- Air quality loss;
- Soil pollution;
- Soil compaction;
- Littering pollution;
- Water pollution;
- Potential impact on communities, individuals and competing land users;

CUMULATIVE IMPACTS:

- Soil erosion;
- Groundwater contamination.

SECTION 102 APPLICATION – POTENTIAL POSITIVE IMPACTS:

- The proposed ±5 ha extension area can easily be incorporated into the approved prospecting programme;
- Upon closure, the land use of the prospecting area can be returned to the landowner and lawful occupiers.

SECTION 102 APPLICATION – POTENTIAL NEGATIVE IMPACTS:

OPERATIONAL PHASE – PROSPECTING AND BULK SAMPLING

- Visual intrusion due to prospecting operation;
- Dust nuisance due to prospecting activities;
- Noise nuisance due to prospecting activities;
- Soil contamination associated with littering and hydrocarbon spills;
- Negative impact on the natural vegetation of the footprint;
- Infestation of the prospecting area with invader plant species;
- Potential impact on fauna within the footprint area;
- Potential impact on areas/infrastructure of heritage or cultural concern;
- Deterioration of the access road due to the prospecting area;
- Potential impact on the management and use of the Rooifontein Game Farm.

DECOMMISSIONING PHASE

- Safety risk posed by uncapped boreholes or open excavations left by contractor;
- Potential impact associated with litter/hydrocarbon spills left in the prospecting area; and/or
- Erosion of access roads or vehicle tracks.

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

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

Table 21: Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
SECTION 102 APPLICATION			
TOPOGRAPHY Landscaping of Prospecting Area.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Seal and cap all the drill holes; ➢ Remove all the prospecting infrastructure and equipment from the processing area; ➢ Refill, topsoil and landscape the bulk sampling pits/trenches, and ➢ Decommission the evaporation dams. ➢ Ensure compliance with the minimum closure objectives as prescribed by DMRE and detailed in this report.	➢ Minimise the impact of the proposed project on the topography of the receiving environment and ensure no residual impact remains after closure.
VISUAL CHARACTERISTICS Mitigating the visual impact.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Contain prospecting to the approved boundaries. ➢ Ensure every borehole and bulk sampling site has a neat appearance and is kept in good condition at all times. ➢ Limit vegetation removal, and avoid the removal of large trees (>20 cm stem) or vegetation of significance (identified by ECO). ➢ Rehabilitate and landscape every borehole and bulk sampling site to address any residual impact.	➢ Minimise the impact of the proposed project on the visual characteristics of the receiving environment during the operational phase, and ensure no residual impact remains after closure.
AIR QUALITY Dust management	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Control the liberation of dust into the surrounding environment by the use of; inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). ➢ Limit speed on the access roads to 40 km/h to prevent the generation of excess dust.	➢ Dust prevention measures are applied to minimise the generation of dust.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		➢ Minimise areas devoid of vegetation. ➢ Ensure dust generating activities comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012).	
NOISE AMBIANCE Noise mitigation.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Ensure that employees and staff conduct themselves in an acceptable manner while on site. ➢ No loud music may be permitted at the prospecting area. ➢ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996. ➢ Implement best practice measures to minimise potential noise impacts.	➢ Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.
GEOLOGY AND SOIL Waste management	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Ensure regular vehicle maintenance, repairs and services only take place at a designated workshop and service area. When a breakdown occurs, arrange for the removal of the machine within 6 hours to a recognised workshop where it can be mended. ➢ Provide ablution facilities in the form of a chemical toilet that is placed near the area being prospected. Ensure the toilet is serviced at least once every week for the duration of the prospecting activities. ➢ Ensure that the use of any temporary, chemical toilet facilities does not cause any pollution to water sources or pose a health hazard. In addition, ensure that no form of secondary pollution arise from the disposal of refuse or sewage from the temporary, chemical toilets. Address any pollution problems arising from the above immediately. ➢ Equip the diesel bowser with a drip tray if used on site. The nozzle of the bowser must rest in a sleeve to prevent dripping after refuelling. ➢ Clean drip trays after use. Do not use dirty drip trays.	➢ Wastes are appropriately handled and safely disposed of at a recognised waste facility.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		➢ Keep a spill kit on site. ➢ Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. ➢ Collect the contaminated soil from spillage that occurred, such as oil or diesel leaking from a burst pipe, within the first hour of occurrence, in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. File proof. ➢ Contain general waste in site vehicles and daily remove waste from the prospecting area to a recognised general waste landfill site. ➢ Prevent the burning or burying of waste on site. ➢ Do not store chemicals or hazardous materials at the prospecting area. ➢ Report any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities to the Department of Water and Sanitation and other relevant authorities.	
HYDROLOGY Storm water management.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Control drainage to ensure that runoff from the prospecting area does not culminate in off-site pollution, flooding or result in damage to storm water discharge points. ➢ Divert storm water around the access roads and/or tracks to prevent erosion. ➢ Keep clean water clean, and route it to a natural watercourse by a system separate from the dirty water system (if applicable). ➢ Collect dirty water and contain it in a system separate from the clean water system. ➢ Prevent dirty water from spilling or seeping into clean water systems.	➢ Uncontrolled storm water impact to the environment is avoided.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
GROUNDCOVER Vegetation management.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Declare the area outside the prospecting boundary a no-go area, and educate all employees accordingly. ➢ Do not remove plants without the approval of an environmental control officer (ECO). ➢ Obtain permits before any *Boscia albitrunca* (Shepherds Tree) is removed. ➢ Retain the large *Vachelia tortilis* (Umbrella Thorn) on the site (within the ±5 ha) due to its significant age and size. ➢ Re-establish seedlings of the trees on the site, *Vachellia tortilis*, if any trees have to be removed to allow for prospecting. ➢ Contain vehicle traffic (as far as possible) to the existing farm roads. Do not allow crisscrossing through undisturbed areas.	➢ Vegetation clearing (if needed) is controlled and restricted to the authorised prospecting footprint.
GROUNDCOVER Mitigating invader plants.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Implement an invasive plant species management plan to control all invasive plant species on denuded- and reinstated areas in terms of NEM:BA, 2004 and CARA, 1983. ➢ Control declared invader or exotic species on the rehabilitated areas.	➢ Prospecting area is kept free of invasive plant species.
FAUNA Mitigating the fauna component.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Fence the prospecting area. ➢ Ensure no fauna is caught, killed, harmed, sold or played with. ➢ Instruct workers to report any animals that may be trapped in the working area. ➢ Ensure no snares are set or nests raided for eggs or young.	➢ Disturbance to fauna is minimised.
CULTURE/HERITAGE Mitigating cultural/heritage aspects.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.	➢ Arrange an archaeologist to approve the drilling and bulk sampling positions prior to commencement of the project. ➢ Confine all prospecting to the footprint area.	➢ Impact to cultural/heritage resources is avoided or at least minimised.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
	Compliance to be monitored by the Environmental Control Officer.	➢ Demarcate known heritage resources with a 30 m buffer zone and manage as a no-go area. ➢ Use existing roads as far as possible. ➢ Subject any future listed activity (not yet approved) to an HIA. ➢ Implement the following change find procedure when discoveries are made on site: ▪ If during the operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. ▪ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area. ▪ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify SAHRA. ▪ Work may only continue once the go-ahead was issued by SAHRA.	
EXISTING INFRASTRUCTURE Control of access road.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Divert storm water around the access road to prevent erosion. ➢ Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas. ➢ Repair rutting and erosion of the access road caused as a direct result of prospecting. ➢ Sign an agreement, prior to commencement, confirming responsibility towards the movement of employees. ➢ If responsible, repair/reinstate damaged fences and/or compensate losses due to gates left ajar.	➢ The access road remains accessible to the road users during the operational phase, and upon closure the road is returned in a better, or at least the same state as received by the PR Holder.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
EXISTING INFRASTRUCTURE Management of prospecting in accordance with the Rooifontein Game Farm operations.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Fence the bulk sampling sites for the duration of the operational phase and control access. ➢ Implement progressive rehabilitation, whereby each bulk sampling pit/trench is reinstated and landscaped prior to the opening of the consecutive pit/trench. ➢ Ensure all prospecting related vehicles/machinery remain on the existing roads and adhere to the speed limit at all times. ➢ Adhere to the mitigation measure with regard to dust-, noise-, safety- and fauna- and vegetation management as proposed in this report.	➢ The impact of the prospecting activities is kept to a minimum during the operational phase and negated with no residual impact upon decommissioning of the area.
GENERAL Health and safety aspects.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Ensure adequate ablution facilities and water for human consumption is daily available on site. ➢ Ensure that workers have access to the correct PPE as required by law. ➢ Manage all operations in compliance with the Mine Health and Safety Act, 1996 (Act No 29 of 1996). ➢ Cover boreholes daily. ➢ Seal and cap all boreholes as prescribed in the rehabilitation plan, upon closure.	➢ Employees work in a healthy and safe environment.

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

The management objectives listed in this report under *Part A(1)(m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* above should be considered for inclusion in the environmental authorisation.

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

(Which relate to the assessment and mitigation measures proposed)

The assumptions made in this document which relate to the assessment and mitigation measures proposed, stem from site specific information gathered from site inspections, desktop studies as well as the specialist study. No uncertainty regarding the proposed project or the receiving environment could be identified.

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

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

Should the mitigation measures and monitoring programmes proposed in this document be implemented on site, no fatal flaws could be identified that were deemed as severe as to prevent the activity continuing.

ii) Conditions that must be included in the authorisation

The management objectives listed in this report under *Part A(1)(m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* should be considered for inclusion in the environmental authorisation.

q) Period for which the Environmental Authorisation is required.

The PR Holder requests the Environmental Authorisation to be valid for the duration of the prospecting right.

r) Undertaking

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

The undertaking required to meet the requirements of this section is provided at the end of the EMPR and is applicable to both the Basic Assessment Report and the Environmental Management Programme report.

s) Financial Provision

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

i) Explain how the aforesaid amount was derived

The average annual amount required to manage and rehabilitate the affected environment was estimated to be ±R 903 550.

The PR Holder confirmed that the rehabilitation cost associated with the re-instatement of the prospecting area (337.9299 ha) will be in the region of ±R 100 000 for the first year, and ±R 150 000 for the second year. The remaining costs are associated with the management of the proposed activity.

ii) Confirm that this amount can be provided from operating expenditure.

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

The funding for the Affordable Outcomes prospecting operation will be furnished by Affordable Outcomes CC. The company secured sufficient funds that can be leveraged to fund the proposed prospecting operation.

t) Specific Information required by the competent Authority

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

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

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

The following potential impacts were identified that may impact on socio-economic conditions of directly affected persons:

- **Visual intrusion associated with the prospecting activities:**

  The bulk sampling phase of the prospecting activities will require the removal of vegetation and the establishment of temporary infrastructure on site. The scale of the footprint area (±1 ha) to be disturbed, as well as the fact that progressive rehabilitation of the bulk sampling pits/trenches is proposed will contribute to minimising the impact of the proposed activity on the receiving environment.

- **Dust nuisance caused as a result of the prospecting activities:**

  The prospecting activity will contribute dust emissions generated by the operation of earthmoving equipment for the duration of the invasive operational phase. Should the PR Holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use.

- **Noise nuisance as a result of prospecting activities:**

  The potential impact on the noise ambiance of the receiving environment is expected to be of low-medium significance and representative of the machinery already operating in the area.

- **Prospecting affecting the socio-economic conditions of the Rooifontein Game Farm:**

  The prospecting area forms part of the larger Rooifontein Game Farm which is a tourist attraction with game farming, hunting and other recreational activities.

  Although the socio-economic conditions of the farm may be directly influence it would be of very small and insignificant scale as only ±10 drill holes and 5 separate bulk samples, each with an approximate footprint of 200 m^2, will be utilized for the prospecting activities. As mentioned earlier, the PR Holder will open one bulk sampling site at a time; further reducing the impact on the surrounding activities. The prospecting activities will be fenced for the duration of the operational phase.

- **Access control and management of existing infrastructure:**

  As mentioned earlier, the prospecting campaign will be headed by a contractor. Site management will at all times be responsible for the movement of their employees. No prospecting personnel will be allowed to wander outside the approved footprint. The contractor will sign an agreement to this affect upon appointment, and will be held responsible for any damages directly caused by the prospecting personnel.

(2) 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 No 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of the Act, attach the investigation report as Appendix 2.19.2 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6 and 2.12 herein).

SECTION 102 APPLICATION:

The archaeological impact assessment report compiled for the mining permit application of Wheatfields Investments 168 (Pty) Ltd noted that the ±5 ha area is located within an area considered to be of high historical (and historical archaeological) significance as it was central to the Kimberley Diamond Rush of the 1870's.

Should the S102 application be approved, the PR Holder must contract the expertise of a qualified archaeologist to approve the positions of the drilling and bulk sampling sites prior to commencement. As listed under the mitigation measures in this report, a 30 m buffer zone must be demarcated and managed as a no-go area around all the known heritage resources.

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

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

Site Alternatives:

DMRE approved the prospecting of 333.0435 ha of the Remaining Extent of the farm Rooifontein No 1722 (formerly known as Speculatie No 217) in 2020. The earmarked ±5 ha area (to which this S102 application is applicable) is enclosed by the abovementioned 333 ha prospecting right (refer to Figure 1), and therefore no site alternatives apply to the current prospecting operation nor the S102 application.

Project Alternatives:

Project Alternative 1, as discussed earlier, was identified during the assessment phase of the environmental impact assessment by the PR Holder and project team, as the preferred and only viable site alternative. Should the S102 application be approved, the PR Holder will be allowed to incorporate the ±5 ha exclusion area into the approved prospecting

footprint. The addition of the extension area will allow the PR Holder to add another bulk sampling site to the prospecting programme.

No-go Alternative:

Should the S102 application be rejected the PR Holder will not be able to prospect the excluded ±5 ha area on the property, and the prospecting programme will only entail the drilling of ±10 RC boreholes and the bulk sampling of four pits/trenches as discussed above.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME.

a) Details of the EAP,

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

The details and expertise of Christine Fouché of Greenmined Environmental that acts as EAP on this project has been included in Part A Section 1(a) as well as Appendix M as required.

b) Description of the Aspects of the Activity

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

The aspects of the activity that are covered by the draft environmental management programme has been described and included in Part A, section (1)(h).

c) Composite Map

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

As mentioned under Part A, section (1)(l)(ii) this map has been compiled and is attached as Appendix D to this document.

d) Description of impact management objectives including management statements

i) Determination of closure objectives.

(Ensure that the closure objectives are informed by the type of environment described in 2.4 herein)

The closure objectives are to create a post-prospecting state as close as possible to the state of the surrounding environment. This can be accomplished by the correctness of rehabilitation and proper after-care activities. The end-land use after final rehabilitation would probably be the continuation of game farming and tourist recreational activities, but is dependable on the decision of the landowner.

The approved EMP notes that rehabilitation of prospecting related activities will form an integral part of the prospecting operations and proposes the following:

- Backfilling of the excavation will start once prospecting activities of that specific bulk sample ceased.
- The rough will be discarded back into the excavation together with the surplus from the recovery plant.
- Stored overburden and topsoil (or dried sand from the evaporation dam) will be used in their respective order and evenly spread over the area.
- The area will be regularly checked for invader/pioneer plant species and the vegetation re-growth monitored until satisfaction is reached.
- The plant site will be cleared of foreign materials and ripped to loosen the ground for vegetation re-growth.
- After final rehabilitation is completed a 1 to 2 year after-care plan is initiated to ensure a satisfying vegetation re-growth rate and the successful establishment of indigenous vegetation.

In summary, the decommissioning activities will therefore consist of the following:

- Sealing and capping of all the boreholes;
- Filling of excavations with roughs, overburden and dried silt from the evaporation dams;
- Removal of all prospecting infrastructure and equipment from site;
- Ripping and landscaping of all compacted areas; and
- Replacing of topsoil and seeding of area (if applicable).

The PR Holder will also comply with the minimum closure objectives as prescribed DMRE and detailed below:

- Rehabilitation of the excavated area (bulk sampling area):

  The excavated area must serve as a final depositing area for the placement of overburden. Rocks and coarse material removed from the excavation must be dumped into the excavation.

  No waste may be permitted to be deposited in the excavations.

  Once overburden, rocks and coarse natural materials has been added to the excavation and it was profiled with acceptable contours and erosion control measures, the topsoil previously stored must be returned to its original depth over the area.

The area must be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from closure of the site.

If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager (DMRE) may require that the soil be analysed and any deleterious effects on the soil arising from the prospecting operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

- Rehabilitation of the Office/Site Camp/Processing Area:

On completion of operations, all buildings, structures or objects on the camp/office site must be dealt with in accordance with section 44 of the MPRDA, 2002.

Where office/camp sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface must be scarified or ripped.

Areas contain French drains must be compacted and covered with a final layer of topsoil to the height of 10 cm above the surrounding ground surface.

The site shall be seeded with a local or adapted seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from closure of the site.

If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager (DMRE) may require that the soil be analysed and any deleterious effects on the soil arising from the prospecting operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

A photographic record must be kept of all the rehabilitated areas.

- Final Rehabilitation:

Final rehabilitation of the surface area shall entail landscaping, levelling, maintenance, and clearing of invasive plant species (if applicable). All equipment, plant and other items used during the prospecting period will be removed from site (section 44 of the MPRDA, 2002). Waste material of any description will be

removed entirely from the prospecting area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site. The management of invasive plant species will be done in a sporadic manner during the life of the activity. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) will be eradicated from the site. Final rehabilitation shall be completed within a period specified by the Regional Manager.

ii) Volume and rate of water use required for the operation

It is proposed that the prospecting operation will require ±1 Ml/month to allow for the bulk sampling activities. Potable water will daily be transported to the site by the employees.

iii) Has a water use licence has been applied for?

As no bulk sampling or drilling is proposed in or near a natural watercourse, the prospecting activity does not require a water use authorisation in terms of Section 39 of the NWA, 1998. As mentioned earlier, the main water supply will be from one of the Kimberley Municipality's water work sites and recycled water will also be used during the mineral process activities.

iv) Impacts to be mitigated in their respective phases

Table 22: Impact to be mitigated in their respective phases

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
(as listed in 2.11.1)	of operation in which activity will take place. State; Planning and design, Pre-Construction, Operational, Rehabilitation, Closure, Post closure	(volumes, tonnages and hectares or m^2)	(describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants)	(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either – Upon cessation of the individual activity or Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
SECTION 102 APPLICATION					
➢ Prospecting and Bulk Sampling	Decommissioning Phase	±1 ha	**<u>Topographic Mitigation</u>** ➢ Sealing and capping of the drill holes; ➢ Removal of all the prospecting infrastructure and equipment from the processing area; ➢ Refilling, topsoiling and landscaping of the bulk sampling pits/trenches, and ➢ The decommissioning of the evaporation dams. ➢ The PR Holder must also comply with the minimum closure objectives as prescribed by DMRE and detailed in this report	Management of the prospecting area must be in accordance with the: ➢ MPRDA, 2008 ➢ NEMA, 1998	Throughout the decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
➢ Prospecting and Bulk Sampling	Operational Phase	±1 ha	**Visual Mitigation** ➢ Prospecting must be contained to the approved boundaries. ➢ Every borehole and bulk sampling site must have a neat appearance and be kept in good condition at all times. ➢ Vegetation removal must be limited, and the removal of large trees (>20 cm stem) or vegetation of significance (identified by an ECO) must be avoided as far as possible. ➢ Upon closure all the disturbed prospecting areas must be rehabilitated and landscaped to address any residual impact.	Management of the prospecting area must be in accordance with the: ➢ MPRDA, 2008 ➢ NEMA, 1998	Throughout the operational phase.
➢ Prospecting and Bulk Sampling	Operational Phase	±1 ha	**Fugitive Dust Emission Mitigation:** ➢ The liberation of dust into the surrounding environment must be effectively controlled (when applicable) by the use of, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). ➢ Speed on the access road must be limited to 40 km/h to prevent the generation of excess dust. ➢ Areas devoid of vegetation, which could act as a dust source, must be minimized. ➢ All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).	Dust generation must be managed in accordance with the: ➢ NEM:AQA. 2004 Regulation 6(1) ➢ National Dust Control Regulations, GN No R827 ➢ ASTM D1739 (SANS 1137:2012)	Throughout the operational-, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
➢ Prospecting and Bulk Sampling	Operational Phase	±1 ha	**Noise Handling:** ➢ The PR Holder must ensure that employees and staff conduct themselves in an acceptable manner while on site. ➢ No loud music may be permitted at the prospecting area. ➢ All project related vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996). ➢ Best practice measures shall be implemented in order to minimize potential noise impacts.	Noise generation must be managed in accordance with the: ➢ NEM:AQA. 2004 Regulation 6(1) ➢ NRTA, 1996	Throughout the operational-, and decommissioning phase.
➢ Prospecting and Bulk Sampling ➢ Decomissioning	Operational Phase & Decommissioning Phase	±1 ha	**Waste Management:** ➢ Regular vehicle maintenance, repairs and services may only take place at a designated workshop and service area. When a breakdown occurs, the contractor must arrange for the removal of the machine, within 6 hours, to a recognised workshop where it can be mended. ➢ Ablution facilities must be provided in the form of a chemical toilet that is placed near the area being prospected. The chemical toilet must be serviced at least once every two weeks for the duration of the prospecting activities. ➢ The use of any temporary, chemical toilet facilities may not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution	Prospecting related waste must be managed in accordance with the: ➢ NWA, 1998 ➢ NEM:WA, 2008 ➢ NEM:WA, 2008: National norms and standards for the storage of waste (GN 926) ➢ NEMA, 1998 (Section 30)	Throughout the operational-, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			problems arising from the above are to be addressed immediately by the PR Holder. ➢ If a diesel bowser is used on site, it must be equipped with a drip tray at all times. Drip trays must be used during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling. ➢ Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site. ➢ A spill kit must be available on-site which can be operated by trained employees for the *ad hoc* remediation of minor chemical and hydrocarbon spillages. ➢ Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. ➢ Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. Proof must be filed. ➢ General waste must be contained in refuse bins with lids that is regularly removed from the prospecting area to a recognised general waste landfill site. ➢ No waste may be buried or burned on the site. ➢ No chemicals or hazardous materials may be stored at the prospecting area.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the activities is reported to the Department of Water and Sanitation and other relevant authorities.		
➢ Prospecting and Bulk Sampling	Operational Phase	±1 ha	**Storm Water Mitigation:** ➢ Drainage must be controlled to ensure that runoff from the prospecting area does not culminate in off-site pollution, flooding or result in damage to storm water discharge points. ➢ Storm water must be diverted around the access roads and/or tracks to prevent erosion. ➢ Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system (if applicable). ➢ Dirty water must be collected and contained in a system separate from the clean water system. ➢ Dirty water must be prevented from spilling or seeping into clean water systems.	Storm water must be managed in accordance with the: ➢ CARA, 1983 ➢ NEMA, 1998 ➢ NWA, 1998	Throughout the operational phase.
➢ Prospecting and Bulk Sampling	Operational Phase	±1 ha	**Mitigation the Potential Impact and Vegetation Cover:** ➢ All areas outside the prospecting boundary must be declared a no-go area, and all employees must be educated accordingly. ➢ No plants may be removed without the approval of an environmental control officer (ECO). ➢ Permits must be obtained from the Department of Nature Conservation before	Vegetation cover must be managed in accordance with the: ➢ CARA, 1983 ➢ NEMA, 1998 ➢ NEM:BA 2004	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			any *Boscia albitrunca* (Shepherds Tree) is removed. ➢ The large *Vachelia tortilis* (Umbrella Thorn) on the site (within the ±5 ha) must be retained as far as possible due to its significant age and size. ➢ Seedlings of the trees on the site, *Vachellia tortilis*, should be re-established on the site if any trees have to be removed to allow for prospecting. ➢ Vehicle traffic must as far as possible be contained to the exiting farm roads. No crisscrossing through undisturbed areas may be allowed.		
➢ Prospecting and Bulk Sampling ➢ Decommissioning	Operational Phase & Decommissioning Phase	±1 ha	**<u>Management of Invader Plant Species:</u>** ➢ An invasive plant species management plan must be implement on site to control weeds and invasive plants on denuded- and reinstated areas in terms of the NEM:BA, 2004 and CARA, 1983. ➢ Management must take responsibility to control declared invader or exotic species that germinate on rehabilitated areas. The following control methods can be used: ▪ The plants can be uprooted, felled or cut off and can be destroyed completely. ▪ The plants can be treated chemically by a registered pest control officer (PCO) through the use of an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.	Invader plants must be managed in accordance with the: ➢ CARA, 1983 ➢ NEM:BA 2004	Throughout the operational, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
➢ Prospecting and Bulk Sampling	Operational Phase	±1 ha	**Protection of Fauna:** ➢ The prospecting area must be fenced; ➢ The site manager must ensure no fauna is caught, killed, harmed, sold or played with. ➢ Workers must be instructed to report any animals that may be trapped in the working area. ➢ No snares may be set or nests raided for eggs or young.	Fauna must be managed in accordance with the: ➢ NEM:BA 2004	Throughout the and operational phase.
➢ Prospecting and Bulk Sampling	Operational Phase	±1 ha	**Archaeological, Heritage and Palaeontological Aspects:** ➢ An archaeologist must approve the drilling and bulk sampling positions prior to commencement of the project. ➢ All prospecting must be confined to the approved footprint area. ➢ Known heritage resources must be avoided with a buffer zone of 30 m. ➢ Existing roads must be used as far as possible. ➢ Any future listed activity (not yet approved) must be subjected to an HIA. ➢ If during the operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.	Cultural/heritage aspects must be managed in accordance with the: ➢ NHRA, 1999	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ It is the responsibility of the senior on-site manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area. ➢ The senior on-site manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify SAHRA. ➢ Work may only continue once the go-ahead was issued by SAHRA.		
➢ Prospecting and Bulk Sampling	Operational Phase	±1 ha	**Access Road and Infrastructure Mitigation:** ➢ Storm water must be diverted around the access road to prevent erosion. ➢ Vehicular movement must be restricted to the existing access road and crisscrossing of tracks through undisturbed areas must be prohibited. ➢ Rutting and erosion of the access road caused as a direct result of the prospecting activities must be repaired by the PR Holder. ➢ Prior to commencement, all contractors must sign an agreement confirming their responsibility towards the movement of their employees. ➢ Damages to fences (by prospecting employees) must be repaired/reinstated by the responsible contractor. Losses, due to gates left open by prospecting employees, must be compensated by the responsible entity.	The site infrastructure must be managed in accordance with the: ➢ NRTA, 1996 ➢ MPRDA, 2002	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
➢ Prospecting and Bulk Sampling	Operational Phase	±1 ha	**Management of prospecting in accordance with the Rooifontein Game Farm operations:** ➢ The bulk sampling sites must be fenced for the duration of the operational phase. Access must be controlled and no unauthorised person may enter the prospecting area. ➢ The PR Holder must implement progressive rehabilitation, whereby each bulk sampling pit/trench is reinstated and landscaped prior to the opening of the consecutive pit/trench. ➢ All prospecting related vehicles/machinery must remain on the existing roads and adhere to the speed limit at all times. ➢ The mitigation measure with regard to dust-, noise-, safety- and fauna- and vegetation management as proposed in this report must be adhered to at all times.	The site must be managed in accordance with the: ➢ MPRDA, 2002 ➢ NEMA, 1998	Throughout the operational phase.
➢ Prospecting and Bulk Sampling	Operational Phase	±1 ha	**Management of Health and Safety Risks:** ➢ Adequate ablution facilities and water for human consumption must daily be available on site. ➢ Workers must have access to the correct personal protection equipment (PPE) as required by law. ➢ All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996). ➢ Boreholes must daily be covered even if prospecting will continue the following day. Upon closure all boreholes must be sealed off and capped as prescribed in the rehabilitation plan.	Health and safety aspects must be managed in accordance with the: ➢ MHSA, 1996 ➢ OHSA, 1993 ➢ OHSAS, 18001	Throughout the operational and decommissioning phase.

e) Impact Management Outcomes

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

Table 23: Impact Management Outcomes

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..)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure))	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc..) E.g. • Modify through alternative method. • Control through noise control • Control through management and monitoring • Remedy through rehabilitation.	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
SECTION 102 APPLICATION					
➢ Prospecting and Bulk Sampling	➢ Visual intrusion due to prospecting operation.	The visual impact may affect the aesthetics of the landscape.	Operational Phase	<u>Control:</u> Implementing proper housekeeping.	Management of the prospecting area must be in accordance with the: ➢ MPRDA, 2008 ➢ NEMA, 1998
➢ Prospecting and Bulk Sampling	➢ Dust nuisance due to prospecting activities.	Increased dust generation will impact on the air quality of the receiving environment.	Operational Phase	<u>Control:</u> Dust suppression methods and proper housekeeping.	Dust generation must be managed in accordance with the: ➢ NEM:AQA. 2004 Regulation 6(1) ➢ National Dust Control Regulations, GN No R827 ➢ ASTM D1739 (SANS 1137:2012)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
➢ Prospecting and Bulk Sampling	➢ Noise nuisance due to prospecting activities.	Should noise levels become excessive it may have an impact on the noise ambiance of the receiving environment.	Operational Phase	Control: Noise suppression methods and proper housekeeping.	Noise generation must be managed in accordance with the: ➢ NEM:AQA. 2004 Regulation 6(1) ➢ NRTA, 1996
➢ Prospecting and Bulk Sampling ➢ Decomissioning	➢ Soil contamination assocated with littering and hydrocarbon spills. ➢ Potential impact assocaited with litter/hydrocarbon spills left in the prospecting area.	Contamination of the footprint area will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to the PR Holder.	Operational Phase	Control & Remedy: Proper housekeeping and implementation of an emergency response plan.	Prospecting related waste must be managed in accordance with the: ➢ NWA, 1998 ➢ NEM:WA, 2008 ➢ NEM:WA, 2008: National norms and standards for the storage of waste (GN 926) ➢ NEMA, 1998 (Section 30)
➢ Prospecting and Bulk Sampling	➢ Negative impact on the natural vegeation of the footprint.	This will impact on the biodiversity of the receiving environment.	Operational Phase	Control: Minimise the removal of vegetation and confining vehicular traffic to existing roads/tracks.	Vegetation cover must be managed in accordance with the: ➢ CARA, 1983 ➢ NEMA, 1998 ➢ NEM:BA 2004
➢ Prospecting and Bulk Sampling	➢ Infestation of the prospecting ara with invader plant species.	This will impact on the biodiversity of the receiving environment.	Operational Phase	Control: Implementing invader plant control measures.	Invader plants must be managed in accordance with the: ➢ CARA, 1983 ➢ NEM:BA 2004
➢ Prospecting and Bulk Sampling	➢ Potential impact on fauna within the footprint area.	This will impact on the biodiversity of the	Operational Phase	Control & Stop: Implementing good management practices.	Fauna must be managed in accordance with the: ➢ NEM:BA 2004

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
		receiving environment.			
➢ Prospecting and Bulk Sampling	➢ Potential impact on area/infrastructure of heritage or cultural concern.	This could impact on the cultural and heritage legacy of the receiving environment.	Operational Phase	Control & Stop: Implementing good management practices, as well as the chance-find protocol.	Cultural/heritage aspects must be managed in accordance with the: ➢ NHRA, 1999
➢ Prospecting and Bulk Sampling ➢ Decommissioning	➢ Deterioration of the access road to the prospecting area. ➢ Erosion of access roads or vehicle tracks.	Collapse of the road infrastructure will affect the landowners.	Operational Phase	Control & Remedy: Maintaining the access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to prospecting.	The site infrastructure must be managed in accordance with the: ➢ NRTA, 1996 ➢ MPRDA, 2002
➢ Prospecting and Bulk Sampling	➢ Potential impact on the managmenet and use of the Rooifontein Game Farm.	This will negatively impact the use of the footprint as a game farm for recreational purposes.	Operational Phase	Control: Confining the prospecting activities to the smallest possible area and implementing progressive rehabilitation throughout the operational phase.	Management of the prospecting area must be in accordance with the: ➢ MPRDA, 2008 ➢ NEMA, 1998
➢ Decommissionoing and Rehabilitation	➢ Safety risk posed by uncapped boreholes or open excavations left by contractor.	Uncapped boreholes/excavations will pose a safety risk to the animals and humans of the area.	Operational Phase	Control: Implementing the mitigation measures and rehabiltiation plan.	Rehabilitation must take place in accordance with the: ➢ MPRDA, 2002 ➢ Rehabilitation Plan

f) Impact Management Actions

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

Table 24: Impact Management Actions

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
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.)	(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc... etc.) E.g. • Modify through alternative method. • Control through noise control • Control through management and monitoring Remedy through rehabilitation.	Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either: Upon cessation of the individual activity Or. Upon the cessation of mining bulk sampling or alluvial diamond prospecting as the case may be.	(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
SECTION 102 APPLICATION				
➢ Prospecting and Bulk Sampling	➢ Visual intrusion due to prospecting operation.	Control: Implementing proper housekeeping.	Throughout the operational phase.	Management of the prospecting area must be in accordance with the: ➢ MPRDA, 2008 ➢ NEMA, 1998

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
➢ Prospecting and Bulk Sampling	➢ Dust nuisance due to prospecting activities.	Control: Dust suppression methods and proper housekeeping.	Throughout the operational phase.	Dust generation must be managed in accordance with the: ➢ NEM:AQA. 2004 Regulation 6(1) ➢ National Dust Control Regulations, GN No R827 ➢ ASTM D1739 (SANS 1137:2012)
➢ Prospecting and Bulk Sampling	➢ Noise nuisance due to prospecting activities.	Control: Noise suppression methods and proper housekeeping.	Throughout the operational phase.	Noise generation must be managed in accordance with the: ➢ NEM:AQA. 2004 Regulation 6(1) ➢ NRTA, 1996
➢ Prospecting and Bulk Sampling ➢ Decomissioning	➢ Soil contamination assocated with littering and hydrocarbon spills. ➢ Potential impact assocaited with litter/hydrocarbon spills left in the prospecting area.	Control & Remedy: Proper housekeeping and implementation of an emergency response plan.	Throughout the operational, and decommissioning phase.	Prospecting related waste must be managed in accordance with the: ➢ NWA, 1998 ➢ NEM:WA, 2008 ➢ NEM:WA, 2008: National norms and standards for the storage of waste (GN 926) ➢ NEMA, 1998 (Section 30)
➢ Prospecting and Bulk Sampling	➢ Negative impact on the natural vegeation of the footprint.	Control: Minimise the removal of vegetation and confining vehicular traffic to existing roads/tracks.	Throughout the operational phase.	Vegetation cover must be managed in accordance with the: ➢ CARA, 1983 ➢ NEMA, 1998 ➢ NEM:BA 2004
➢ Prospecting and Bulk Sampling	➢ Infestation of the prospecting ara with invader plant species.	Control: Implementing invader plant control measures.	Throughout the operational phase.	Invader plants must be managed in accordance with the: ➢ CARA, 1983 ➢ NEM:BA 2004

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
➢ Prospecting and Bulk Sampling	➢ Potential impact on fauna within the footprint area.	Control & Stop: Implementing good management practices.	Throughout the operational phase.	Fauna must be managed in accordance with the: ➢ NEM:BA 2004
➢ Prospecting and Bulk Sampling	➢ Potential impact on area/infrastructure of heritage or cultural concern.	Control & Stop: Implementing good management practices, as well as the chance-find protocol.	Throughout the operational phase.	Cultural/heritage aspects must be managed in accordance with the: ➢ NHRA, 1999
➢ Prospecting and Bulk Sampling ➢ Decommissioning	➢ Deterioration of the access road to the prospecting area. ➢ Erosion of access roads or vehicle tracks.	Control & Remedy: Maintaining the access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to prospecting.	Throughout the operational- and decommissioning phase.	The site infrastructure must be managed in accordance with the: ➢ NRTA, 1996 ➢ MPRDA, 2002
➢ Prospecting and Bulk Sampling	➢ Potential impact on the managmenet and use of the Rooifontein Game Farm.	Control: Confining the prospecting activities to the smallest possible area and implementing progressive rehabilitation throughout the operational phase.	Throughout the operational phase.	Management of the prospecting area must be in accordance with the: ➢ MPRDA, 2008 ➢ NEMA, 1998
➢ Decommissioning and Rehabilitation	➢ Safety risk posed by uncapped boreholes or open excavations left by contractor.	Control: Implementing the mitigation measures and rehabiltiation plan.	Throughout the decommissioning phase.	Rehabilitation must take place in accordance with the: ➢ MPRDA, 2002 ➢ Rehabilitation Plan

i) Financial Provision

(1) Determination of the amount of Financial Provision.

(a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.

The closure objectives entail the sealing and capping of the drill holes; removal of all the prospecting infrastructure and equipment from the processing area; refilling, topsoiling and landscaping of the bulk sampling pits/trenches and the decommissioning of the evaporation dams. Invasive plant species will be controlled on the reinstated areas during a 12 months' aftercare period to address germination of problem plants. The PR Holder will comply with the minimum closure objectives as prescribed by DMRE.

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

This report, the Draft Basic Assessment Report, includes all the environmental objectives in relation to closure and will be made available for perusal by the landowner, registered I&AP's and stakeholders over a 30-days commenting period.

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

The requested rehabilitation plan is attached as Appendix F.

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

The decommissioning phase will entail the final rehabilitation of the prospecting footprint. Final landscaping, levelling and top dressing will be done. The rehabilitation of the prospecting area will comply with the minimum closure objectives as prescribed by DMRE and detailed below, and therefore is deemed to be compatible:

- Rehabilitation of the excavated area (bulk sampling area):

  The excavated area must serve as a final depositing area for the placement of overburden. Rocks and coarse material removed from the excavation must be dumped into the excavation.

  No waste may be permitted to be deposited in the excavations.

  Once overburden, rocks and coarse natural materials has been added to the excavation and it was profiled with acceptable contours and erosion control measures, the topsoil previously stored must be returned to its original depth over the area.

  The area must be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from closure of the site.

  If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager (DMRE) may require that the soil be analysed and any deleterious effects on the soil arising from the prospecting operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

- Rehabilitation of the Office/Site Camp/Processing Area:

  On completion of operations, all buildings, structures or objects on the camp/office site must be dealt with in accordance with section 44 of the MPRDA, 2002.

  Where office/camp sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface must be scarified or ripped.

  Areas contain French drains must be compacted and covered with a final layer of topsoil to the height of 10 cm above the surrounding ground surface.

The site shall be seeded with a local or adapted seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from closure of the site.

If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager (DMRE) may require that the soil be analysed and any deleterious effects on the soil arising from the prospecting operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

A photographic record must be kept of all the rehabilitated areas.

- Final Rehabilitation:

Final rehabilitation of the surface area shall entail landscaping, levelling, maintenance, and clearing of invasive plant species (if applicable). All equipment, plant and other items used during the prospecting period will be removed from site (section 44 of the MPRDA, 2002). Waste material of any description will be removed from the prospecting area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site. The management of invasive plant species will be done (if applicable) in a sporadic manner during the life of the activity. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) will be eradicated from the site. Final rehabilitation shall be completed within a period specified by the Regional Manager.

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

The calculation of the quantum for financial provision was according to Section B of the working manual.

Prospecting type and saleable mineral by-product

According to Tables B.12, B.13 and B.14

Mineral type	Diamonds (General) Diamonds (Kimberlite)

	Diamonds (Alluvial)
Saleable mineral by-product	None

Risk ranking

According to Tables B.12, B.13 and B.14

Primary risk ranking (either Table B.12 or B.13)	C (Low risk).
Revised risk ranking (B.14)	N/A

Environmental sensitivity of the prospecting area

According to Table B.4

Environmental sensitivity of the prospecting area	Low

Level of information

According to Step 4.2:

Level of information available	Extensive

Identify closure components

According to Table B.5 and site-specific conditions

Component No.	Main description	Applicability of closure components (Circle Yes or No)	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	**YES**	**-**
2(A)	Demolition of steel buildings and structures	**YES**	**-**
2(B)	Demolition of reinforced concrete buildings and structures	**YES**	**-**
3	Rehabilitation of access roads	**YES**	**-**
4(A)	Demolition and rehabilitation of electrified railway lines	**-**	**NO**
4(B)	Demolition and rehabilitation of non-electrified railway lines	**-**	**NO**
5	Demolition of housing and facilities	**YES**	**-**
6	Opencast rehabilitation including final voids and ramps	**YES**	**-**
7	Sealing of shafts, adits and inclines	**-**	**NO**
8(A)	Rehabilitation of overburden and spoils	**YES**	**-**
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)	**YES**	**-**
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)	**-**	**NO**
9	Rehabilitation of subsided areas	**-**	**NO**

Component No.	Main description	Applicability of closure components (Circle Yes or No)	
10	General surface rehabilitation, including grassing of all denuded areas	**YES**	**-**
11	River diversions	**-**	**NO**
12	Fencing	**YES**	**-**
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater)	**YES**	**-**
14	2 to 3 years of maintenance and aftercare	**YES**	**-**

Unit rates for closure components

According to Table B.6 master rates and multiplication factors for applicable closure components.

Component No.	Main description	Master rate	Multiplication factor
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	17	1.00
2(A)	Demolition of steel buildings and structures	241	1.00
2(B)	Demolition of reinforced concrete buildings and structures	356	1.00
3	Rehabilitation of access roads	43	1.00
4(A)	Demolition and rehabilitation of electrified railway lines	-	-
4(B)	Demolition and rehabilitation of non-electrified railway lines	-	-
5	Demolition of housing and facilities	483	1.00
6	Opencast rehabilitation including final voids and ramps	253 019	0.04
7	Sealing of shafts, adits and inclines	-	-
8(A)	Rehabilitation of overburden and spoils	168 679	1.00
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)	210 087	1.00
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)	-	-
9	Rehabilitation of subsided areas	-	-
10	General surface rehabilitation, including grassing of all denuded areas	133 622	1.00
11	River diversions	**-**	**-**
12	Fencing	152	1.00
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater)	50 807	0.17
14	2 to 3 years of maintenance and aftercare	17 782	1.00

Determine weighting factors

According to Tables B.7 and B.8

Weighting factor 1: Nature of terrain/accessibility	1.00 (Flat)
Weighting factor 2: Proximity to urban area where goods and services are to be supplied	1.05

Calculation of closure costs

Table B.10 Template for Level 2: "Rules-based" assessment of the quantum for financial provision

Table 25: Calculation of closure cost

CALCULATION OF THE QUANTUM							
Mine:	Affordable Outcomes CC			**Location:**	Boshof		
Evaluators:	C Fouché			**Date:**	29 October 2020		
No	**Description**	**Unit**	**A Quantity**	**B Master rate**	**C Multiplication factor**	**D Weighting factor 1**	**E=A *B*C*D Amount (Rand)**
			Step 4.5	**Step 4.3**	**Step 4.3**	**Step 4.4**	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	m²	900	17	1.00	1.00	R 15 300.00
2(A)	Demolition of steel buildings and structures	m^2	50	241	1.00	1.00	R 12 050.00
2(B)	Demolition of reinforced concrete buildings and structures	m^2	50	356	1.00	1.00	R 17 800.00
3	Rehabilitation of access roads	m^2	2 400	43	1.00	1.00	R 103 200.00
4(A)	Demolition and rehabilitation of electrified railway lines	m	0	419	1.00	1.00	R 0.00
4(B)	Demolition and rehabilitations of non-electrified railway lines	m	0	229	1.00	1.00	R 0.00
5	Demolition of housing and/or administration facilities	m^2	50	483	1.00	1.00	R 24 150.00
6	Opencast rehabilitation including final voids and ramps	ha	0.2	253 019	0.04	1.00	R 2 024.15
7	Sealing of shaft, audits and inclines	m^3	0	130	1.00	1.00	R 0.00
8(A)	Rehabilitation of overburden and spoils	ha	0.2	168 679	1.00	1.00	R 33 735.80
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	ha	0.04	210 087	1.00	1.00	R 8 403.48
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	0	610 192	0.51	1.00	R 0.00
9	Rehabilitation of subsided areas	ha	0	141 244	1.00	1.00	R 0.00
10	General surface rehabilitation	ha	0.98	133 622	1.00	1.00	R 130 949.56
11	River diversions	ha	0	133 622	1.00	1.00	R 0.00

12	Fencing	m	500	152	1.00	1.00	R 76 000.00
13	Water Management	ha	0.04	50 807	0.17	1.00	R 345.49
14	2 to 3 years of maintenance and aftercare	ha	1.42	17 782	1.00	1.00	R 25 250.44
15(A)	Specialists study	Sum	0				R 0.00
15(B)	Specialists study	Sum	0				R 0.00
Sum of items 1 to 15 above							R 449 208.92
Multiply Sum of 1-15 by Weighting factor 2 (Step 4.4)		1.05		R 449 208.92		**Sub Total 1**	R 471 669.37

1	Preliminary and General	6% of Subtotal 1 if Subtotal 1 <R100 000 000.00	R 28 300.16
		12% of Subtotal 1 if Subtotal 1 >R100 000 000.00	-
2	Contingency	10.0% of Subtotal 1	R 47 166.94
		Sub Total 2 (Subtotal 1 plus management and contingency)	R 547 136.46
		Vat (15%)	R 82 070.47
		GRAND TOTAL (Subtotal 3 plus VAT)	**R 629 206.93**

The amount that will be necessary for the rehabilitation of damages caused by the operation, both sudden closures during the normal operation of the project and at final, planned closure gives a sum total of R 629 206.93. The PR Holder has a financial guarantee to the value of R 629 801.76 lodged with the DMRE that is deemed sufficient to cover the rehabilitation cost of the proposed prospecting activity.

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

Herewith I, the person, whose name is stated below confirm that I am the person authorised to act as representative of the PR Holder in terms of the resolution submitted with the application. I herewith confirm that the company will provide the amount that will be determined by the Regional Manager in accordance with the prescribed guidelines.

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

g) Monitoring of Impact Management Actions
h) Monitoring and reporting frequency
i) Responsible persons
j) Time period for implementing impact management actions
k) Mechanisms for monitoring compliance

Table 26: Mechanisms for monitoring compliance with and performance assessment against the EMPR and reporting thereon.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
SECTION 102 APPLICATION				
➢ Prospecting and Bulk Sampling	**Visual Characteristics:** ➢ Visual intrusion due to prospeccting operation.	➢ Minimize the visual impact of the activity on the surrounding environment through proper site management and implementing good housekeeping practices.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Contain prospecting to the approved boundaries. ➢ Ensure every borehole and bulk sampling site has a neat appearance and is kept in good condition at all times. ➢ Limit vegetation removal, and avoid the removal of large trees (>20 cm stem) or vegetation of significance (identified by ECO). ➢ Rehabilitate and landscape every borehole and bulk sampling site to address any residual impact.	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
➢ Prospecting and Bulk Sampling	**Air Quality:** ➢ Dust nuisance due to prospecting activities.	➢ Dust suppression equipment such as a water car (when needed). ➢ Signage that clearly reduce the speed on the access roads.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Control the liberation of dust into the surrounding environment by the use of; inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). ➢ Limit speed on the access roads to 40 km/h to prevent the generation of excess dust. ➢ Minimise areas devoid of vegetation. ➢ Ensure dust generating activities comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012).	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.
➢ Prospecting and Bulk Sampling	**Noise Ambiance:** ➢ Noise nuisance due to prospecting activities.	➢ Silencers fitted to all project related vehicles, and the use of vehicles that are in road worthy condition in terms of the National Road Traffic Act, 1996.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Ensure that employees and staff conduct themselves in an acceptable manner while on site. ➢ No loud music may be permitted at the prospecting area.	Applicable throughout site establishment-, operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			➢ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996. ➢ Implement best practice measures to minimise potential noise impacts.	
➢ Prospecting and Bulk Sampling ➢ Decommissioning and Rehabilitation	**Waste Management:** ➢ Soil contamination associated with littering and hydrocarbon spills. ➢ Potential impact associated with litter/hdyrocabon spills left in the prospecting area.	➢ Oil spill kit. ➢ Sealed drip trays. ➢ Formal waste disposal system with waste registers.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Ensure regular vehicle maintenance, repairs and services only take place at a designated workshop and service area. When a breakdown occurs, arrange for the removal of the machine within 6 hours to a recognised workshop where it can be mended. ➢ Provide ablution facilities in the form of a chemical toilet that is placed near the area being prospected. Ensure the toilet is serviced at least once every two weeks for the duration of the prospecting activities. ➢ Ensure that the use of any temporary, chemical toilet facilities does not cause any pollution to water sources or pose a health hazard. In addition, ensure that no form of secondary pollution arise from the disposal of refuse or sewage from the temporary, chemical toilets. Address any pollution problems arising from the above immediately.	Applicable throughout site establishment-, operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			➢ Equip the diesel bowser with a drip tray if used on site. The nozzle of the bowser must rest in a sleeve to prevent dripping after refuelling. ➢ Clean drip trays after use. Do not use dirty drip trays. ➢ Keep a spill kit on site. ➢ Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. ➢ Collect the contaminated soil from spillage that occurred, such as oil or diesel leaking from a burst pipe, within the first hour of occurrence, in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. File proof. ➢ Contain general waste in site vehicles and daily remove waste from the prospecting area to a recognised general waste landfill site. ➢ Prevent the burning or burying of waste on site. ➢ Do not store chemicals or hazardous materials at the prospecting area. ➢ Report any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities to the Department of Water and Sanitation and other relevant authorities.	
➢ Prospecting and Bulk Sampling	**Hydrology** ➢ Storm water management.	➢ Storm water management structures such as berms to direct storm- and runoff water around the work area (when needed).	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.	Applicable throughout site establishment-, operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			Responsibility: ➢ Control drainage to ensure that runoff from the prospecting area does not culminate in off-site pollution, flooding or result in damage to storm water discharge points. ➢ Divert storm water around the access roads and/or tracks to prevent erosion. ➢ Keep clean water clean, and route it to a natural watercourse by a system separate from the dirty water system (if applicable). ➢ Collect dirty water and contain it in a system separate from the clean water system. ➢ Prevent dirty water from spilling or seeping into clean water systems.	
➢ Prospecting and Bulk Sampling	**Groundcover** ➢ Negative impact on the natural vegetation of the footprint.	➢ Pre-clearance go-ahead from ECO. ➢ Employee induction meetings. ➢ Plant removal permits. ➢ Indigenous seedlings for rehabilitation (if needed).	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Declare the area outside the prospecting boundary a no-go area, and educate all employees accordingly. ➢ Do not remove plants without the approval of an environmental control officer (ECO). ➢ Obtain permits before any *Boscia albitrunca* (Shepherds Tree) is removed. ➢ Retain the large *Vachelia tortilis* (Umbrella Thorn) on the site (within the ±5 ha) due to its significant age and size. ➢ Re-establish seedlings of the trees on the site, *Vachellia tortilis*, if any trees have to be removed to allow for prospecting.	Applicable throughout site establishment-, and operational phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			➢ Contain vehicle traffic (as far as possible) to the existing farm roads. Do not allow crisscrossing through undisturbed areas.	
➢ Prospecting and Bulk Sampling	**Groundcover:** ➢ Infestation of the prospecting area with invader plant species.	➢ Designated team to cut or pull out invasive plant species that germinated on site. ➢ Herbicide application equipment.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Implement an invasive plant species management plan to control all invasive plant species on site in terms of NEM:BA, 2004 and CARA, 1983. ➢ Control declared invader or exotic species on the rehabilitated areas.	Applicable throughout site establishment-, operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.
➢ Prospecting and Bulk Sampling	**Fauna:** ➢ Potential impact on fauna within the footprint area.	➢ Toolbox talks to educate employees how to handle fauna that enter the work areas.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Fence the prospecting area. ➢ Ensure no fauna is caught, killed, harmed, sold or played with. ➢ Instruct workers to report any animals that may be trapped in the working area. ➢ Ensure no snares are set or nests raided for eggs or young.	Applicable throughout site establishment-, and operational phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
➢ Prospecting and Bulk Sampling	➢ Potential impact on areas/infrastructure of heritage or cultural concern.	➢ Contact number of an archaeologist that can be contacted when a discovery is made on site.	<u>Role:</u> ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Responsibility:</u> ➢ Arrange an archaeologist to approve the drilling and bulk sampling positions prior to commencement of the project. ➢ Confine all prospecting to the footprint area. ➢ Demarcate known heritage resources with a 30 m buffer zone and manage as a no-go area. ➢ Use existing roads as far as possible. ➢ Subject any future listed activity (not yet approved) to an HIA. ➢ Implement the following change find procedure when discoveries are made on site: ▪ If during the operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. ▪ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area. ▪ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then	Applicable throughout site establishment-, operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			contact a professional archaeologist for an assessment of the finds who will notify SAHRA. ▪ Work may only continue once the go-ahead was issued by SAHRA.	
➢ Prospecting and Bulk Sampling	**<u>Existing Infrastructure:</u>** ➢ Deterioration of the access road to the prospecting area. ➢ Erosion of access roads or vehicle tracks.	➢ Grader to restore the road surface when needed.	<u>Role:</u> ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Responsibility:</u> ➢ Divert storm water around the access road to prevent erosion. ➢ Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas. ➢ Repair rutting and erosion of the access road caused as a direct result of the prospecting activities. ➢ Sign an agreement, prior to commencement, confirming responsibility towards the movement of employees. ➢ If responsible, repair/reinstate damaged fences and/or compensate losses due to gates left ajar.	Applicable throughout operational phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.
➢ Prospecting and Bulk Sampling	**<u>Existing Infrastructure:</u>** ➢ Potential impact on the management and use of the Rooifontein Game Farm.	➢ Fences to control access to the drilling and bulk sampling sites. ➢ Agreement signed by the contractor confirming his responsibility towards	<u>Role:</u> ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.	Applicable throughout operational phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
		the movement of employees.	Responsibility: ➢ Fence the bulk sampling sites for the duration of the operational phase and control access. ➢ Implement progressive rehabilitation, whereby each bulk sampling pit/trench is reinstated and landscaped prior to the opening of the consecutive pit/trench. ➢ Ensure all prospecting related vehicles/machinery remain on the existing roads and adhere to the speed limit at all times. ➢ Adhere to the mitigation measure with regard to dust-, noise-, safety- and fauna- and vegetation management as proposed in this report.	
➢ Prospecting and Bulk Sampling	**General:** ➢ Potential health and safety risks to employees.	➢ Stocked first aid box. ➢ Level 1 certified first aider. ➢ All appointments in terms of the Mine Health and Safety Act, 1996.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Ensure adequate ablution facilities and water for human consumption is daily available on site. ➢ Ensure that workers have access to the correct PPE as required by law. ➢ Manage all operations in compliance with the Mine Health and Safety Act, 1996 (Act No 29 of 1996). ➢ Cover boreholes daily. ➢ Seal and cap all boreholes as prescribed in the rehabilitation plan, upon closure.	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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

The Environmental Audit Report in accordance with Appendix 7 as prescribed in Regulation 34 of the EIA Regulations, 2014 (as amended) will annually be submitted to DMRE for compliance monitoring purposes or in accordance with the time period stipulated by the Environmental Authorisation.

m) Environmental Awareness Plan

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

Once the Section 102 amendment application was approved a copy of the amended EMPR will be handed to the site manager for his perusal. An induction meeting will be held with all the site workers to inform them of the Basic Rules of Conduct with regard to the environment.

ii) Manner in which risk will be dealt with in order to avoid pollution or the degradation of the environment.

The operations manager must ensure that he/she understands the EMPR document and its requirement and commitments before any prospecting continues. An Environmental Control Officer needs to check compliance of the prospecting activity to the management programmes described in the EMPR.

The following list represents the basic steps towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks.

- **<u>Site Management:</u>**
  - Stay within boundaries of site – do not enter adjacent properties.
  - Keep tools and material properly stored.
  - Smoke only in designated areas.
  - Use toilets provided – report full or leaking toilets.
- **<u>Water Management and Erosion:</u>**
  - Check that rainwater flows around work areas and are not contaminated.
  - Report any erosion.
  - Check that dirty water is kept from clean water.

- **Waste Management:**

  - Take care of your own waste.
  - Don't burn waste.
  - Pick-up any litter laying around.

- **Hazardous Waste Management (Petrol, Oil, Diesel, Grease)**

  - Never mix general waste with hazardous waste.
  - Use only sealed, non-leaking containers.
  - Keep all containers closed and store only in approved areas.
  - Always put drip trays under vehicles and machinery.
  - Empty drip trays after rain.
  - Stop leaks and spills, if safe:
    - ✓ Keep spilled liquids moving away.
    - ✓ Immediately report the spill to the site manager/supervision.
    - ✓ Locate spill kit/supplies and use to clean-up, if safe.
    - ✓ Place spill clean-up wastes in proper containers.
    - ✓ Label containers and move to approved storage area.

- **Discoveries:**

  - Stop work immediately.
  - Notify site manager/supervisor.
  - Includes – archaeological finds, cultural artefacts, contaminated water, pipes, containers, tanks and drums, any buried structures.

- **Air Quality:**

  - Wear protection when working in very dusty areas.
  - Implement dust control measures:
    - ✓ Water all roads and work areas.
    - ✓ Minimize handling of material.
    - ✓ Obey speed limit and cover trucks.

- **Driving and Noise:**

  - Use only approved access roads.
  - Respect speed limits.
  - Only use turn-around areas – no crisscrossing through undisturbed areas.

- Avoid unnecessary loud noises.
- Report or repair noisy vehicles.

➢ **Vegetation and Animal life:**

- Do not remove any plants or trees without approval of the site manager.
- Do not collect fire wood.
- Do not catch, kill, harm, sell or play with any animal, reptile, bird or amphibian on site.
- Report any animal trapped in the work area.
- Do not set snares or raid nests for eggs or young.

➢ **Fire Management:**

- Do not light any fires on site, unless contained in a drum at demarcated area.
- Put cigarette butts in a rubbish bin.
- Do not smoke near gas, paints or petrol.
- Know the position of firefighting equipment.
- Report all fires.
- Don't burn waste or vegetation.

n) Specific information required by the Competent Authority

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

The PR Holder undertakes to annually review and update the financial provision calculation, upon which it will be submitted to DMRE for review and approved as being sufficient to cover the environmental liability at the time and for closure of the prospecting area at that time.

5. UNDERTAKING

The EAP herewith confirms

a) the correctness of the information provided in the reports **X**
b) the inclusion of comments and inputs from stakeholders and I&AP's **X**
c) the inclusion of inputs and recommendations from the specialist reports where relevant, and **X**
d) that the information provided by the EAP to interested and affected parties and any response by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein **X**

Signature of the environmental assessment practitioner:

Greenmined Environmental (Pty) Ltd

Name of Company:

30 October 2020

Date:

-END-

APPENDIX A

REGULATION 42 PROSPECTING PLAN

APPENDIX B
COPY OF THE PROSPECTING RIGHT

APPENDIX C
LOCALITY MAP

APPENDIX D

SITE PLAN

APPENDIX E
SURROUNDING LAND USE MAP

APPENDIX F
REHABILITATION MAP

APPENDIX G
REPORT ON THE RESULT OF CONSULTATION

APPENDIX H
WETLAND IDENTIFICATION AND DELINEATION REPORT

APPENDIX I
BIODIVERSITY AND ECOLOGICAL ASSESSMENT

APPENDIX J
ARCHAEOLOGICAL IMPACT ASSESSMENT

APPENDIX K

SUPPORTING IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT STATEMENT

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

TYPE OF IMPACT	DURATION	PROBABILITY	SIGNIFICANCE
APPROVED AFFORDABLE OUTCOMES PROJECT			
CONSTRUCTION PHASE IMPACTS			
➢ Road construction – loss of vegetation & habitat ➢ Plant construction – loss of vegetation & habitat ➢ Pipeline installation – loss of vegetation & habitat ➢ Offices – loss of vegetation & habitat	**Duration of invasive prospecting phase**	➢ Low ➢ Low ➢ Low ➢ Low	➢ Low ➢ Low ➢ Low ➢ Low
OPERATIONAL PHASE IMPACTS			
➢ Prospecting – geological degradation ➢ Disposal – topographic changes ➢ Prospecting – topographic changes ➢ Prospecting – soil pollution ➢ Operation – loss of grazing ➢ Operation – loss of or disturbance to plants ➢ Operation – problem plant invasion ➢ Operation – effect on animals ➢ Waste water disposal – water regime ➢ Prospecting – noise ➢ Operation – air quality ➢ Prospecting – loss of archaeological items ➢ Operation – sensitive landscapes ➢ Prospecting – visual impact.	**Duration of invasive prospecting phase**	➢ High ➢ High ➢ High ➢ Medium ➢ Low ➢ Low ➢ Low ➢ Medium ➢ Low ➢ High ➢ High ➢ Low ➢ Low ➢ Low	➢ High ➢ High ➢ High ➢ High ➢ High ➢ Low ➢ Low ➢ Low ➢ Low ➢ Low ➢ Low ➢ Low ➢ Low ➢ Low
DECOMMISSIONING PHASE IMPACTS & RESIDUAL IMPACT AFTER CLOSURE			
➢ Demolition – waste disposal ➢ Rehabilitation – re-vegetation ➢ Vacated site – rehabilitation of exposed areas ➢ Vacated site – safety risks	**Duration of decommissioning phase**	➢ Positive ➢ Positive ➢ Positive ➢ Positive	

TYPE OF IMPACT	DURATION	PROBABILITY	SIGNIFICANCE
SECTION 102 APPLICATION			
OPERATIONAL PHASE – PROSPECTING AND BULK SAMPLING			
➢ Visual intrusion due to prospecting operation ➢ Dust nuisance due to prospecting activities ➢ Noise nuisance due to prospecting activities ➢ Soil contamination associated with littering and hydrocarbon spills ➢ Negative impact on the natural vegetation of the footprint ➢ Infestation of the prospecting area with invader plant species ➢ Potential impact on fauna within the footprint area ➢ Potential impact on areas/infrastructure of heritage or cultural concern ➢ Deterioration of the access road to the prospecting area ➢ Potential impact on the management and use of the Rooifontein Game Farm	**Duration of invasive prospecting phase**	➢ Possible ➢ Low Possibility ➢ Low Possibility ➢ Low Possibility ➢ Low Possibility ➢ Low Possibility ➢ Low Possibility ➢ Possible ➢ Low Possibility ➢ Possible	➢ Low-Medium ➢ Low ➢ Low-Medium ➢ Low ➢ Low ➢ Low ➢ Low ➢ Low-Medium ➢ Low ➢ Low-Medium
DECOMMISSIONING PHASE			
➢ Safety risk posed by uncapped boreholes or open excavations left by contractor ➢ Potential impact associated with litter/hydrocarbon spills left in the prospecting area ➢ Erosion of access roads or vehicle tracks ➢ Return of prospecting area to agricultural use (Positive Impact)	**Duration of invasive prospecting phase**	➢ Low Possibility ➢ Low Possibility ➢ Low Possibility ➢ Definite	➢ Low ➢ Low ➢ Low ➢ Medium-high (+)

APPENDIX L
PHOTOGRAPHS OF THE SITE

PHOTOGRAPHS OF THE PROPOSED ±5 HA EXTENSION AREA



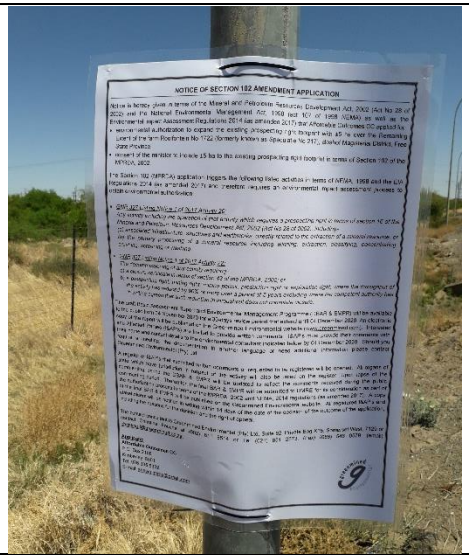



PHOTOGRAPHS OF THE PROPOSED ±5 HA EXTENSION AREA

PHOTOGRAPHS OF THE PROPOSED ±5 HA EXTENSION AREA

Pond in front of the reconstructed Olifantsfontein Hotel

Remnants of old mining activities



NOTICES PLACED AT THE ENTRANCE TO THE SITE

APPENDIX M
CV AND PROOF OF EXPERIENCE OF THE EAP