NATIONAL TREASURE MINERALS (PTY) LIMITED

Doornkloof Prospecting Area

DRAFT

Basic Assessment Report (BAR) and Environmental Management Programme (EMPR)

Compiled in terms of Appendix 1, Appendix 4 of the amended Environmental Impact Assessment Regulations, 2014 (Government Notice No. 326) (EIA Regulations, 2014) and submitted as contemplated in Regulation 19 of Chapter 4 of the EIA Regulations, 2014
For
The application for an Environmental Authorization in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), Environmental Impact Assessment Regulations 2014, Government Notice No. 327 - Government Notice No. 325 - Listing Notice 1 of 2014.

DMRE Reference No.: NW 30/5/1/1/2/13540 PR

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Basic Assessment Report (BAR) and Environmental Management Programme (EMPR)

National Treasure Minerals (Pty) Limited:

Doornkloof Prospecting Area

BAR AND EMPR FOR THE DOORNKLOOF PROSPECTING AREA

November 2022

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Report Type: Draft BAR/EMPr

Project Title: Doornkloof Prospecting Project

Compiled for: National Treasure Minerals (Pty) Limited

Compiled by: T. Shakwane, B.Sc. Hons. Pr. Sci.Nat and Registered EAP

Version: Draft

Date: November 2022

Disclaimer:

The results and conclusions of this report are limited to the Scope of Work agreed between Geovicon Environmental (Pty) Limited and National Treasure Minerals (Pty) Limited for whom this report/ investigation has been conducted. All assumptions made and all information contained within this report and its attachments depend on the accessibility to and reliability of relevant information, including maps, previous reports and laboratory results, from the Client and Contractors. All work conducted by Geovicon Environmental (Pty) Limited is done in accordance with the Geovicon Standard Operating Procedures.

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Declaration:

I hereby declare:

1. I have no vested interest (present or prospective) in the project that is the subject of this report as well as its attachments. I have no personal interest with respect to the parties involved in this project.

2. I have no bias with regard to this project or towards the various stakeholders involved in this project.

3. I have not received, nor have I been offered, any significant form of inappropriate reward for compiling this report.

(Electronic Signature) T. Shakwane, B.Sc. Hons. (Professional Natural Scientist no: 11708

EXECUTIVE SUMMARY

National Treasure Minerals (Pty) Limited submitted an application for a prospecting right in terms section 16 of the Mineral and Petroleum Resources Development Act, 2004 (Act 28 of 2004), as amended. National Treasure Minerals (Pty) Limited proposes to undertake prospecting activities for Iron ore over portions 4, 8, 24, 33, 34 and 37 of the farm Doornkloof 141 JQ, the remaining extent of the farm Tambotie 961 JQ and the remaining extent of the farm Tambotie 146 JQ, namely Doornkloof Prospecting Area. The proposed Doornkloof Prospecting Area situated within the magisterial District of Brits, North West Province. Refer to **Appendix A** for the Regulation 2(2) Plan of the proposed Doornkloof Prospecting Area.

Doornkloof Prospecting Area will be undertaken in three phases. Phase 1 will involve the following activities i.e., gathering of existing geological data in and around the Prospecting Area and computer modelling of existing data. This phase will be used to decide whether to commence with the second phase of the project. Phase 2 will involve the geological core drilling programme. A suitable number of geological core boreholes will be drilled on predetermined positions. The borehole cores will be logged, sampled and analysed. A pre-feasibility study will be compiled based on the results of the analyses. Phase 3 will be undertaken, should phase 2 indicate the prospecting area to have sufficient reserves. This phase will include drilling of additional geological exploration boreholes logging and analysis of the sampled cores. Based on the results of the above prospecting activities, a mining feasibility report will be compiled if necessary.

The commencement of the proposed Doornkloof Prospecting Area will result in the undertaking of activities that are considered as listed activities in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) as amended (NEMA). In terms of the above-mentioned legislation, an application for an environmental authorisation must be submitted to the competent authority which application must be granted before the commencement of the proposed listed activities. In addition to the above, an environmental impact assessment must be undertaken in support of the environmental authorisation application for the proposed listed activities. National Treasure Minerals (Pty) Limited appointed Geovicon Environmental (Pty) Limited, an independent environmental consulting company, to undertake and manage the environmental authorisation application and the environmental impact assessment for the proposed Doornkloof Prospecting Area. An application for an environmental authorisation for the proposed Doornkloof Prospecting Area was submitted to the Department of Mineral Resources, North West Regional Office (Competent Authority) for their consideration.

This document (BAR and EMPR), which concerns assessment of environmental impacts and a programme for management of the impacts for the proposed activities at the Doornkloof Prospecting Area, was compiled in terms of the amended EIA Regulations, 2014 for review by interested and affected parties including the competent authority.

Environmental baseline data used in this report has been obtained through desktops assessments for surface water quantities and qualities, geohydrological data, topographical analyses, soil surveys, vegetation surveys, wetland surveys and geological conditions and the socio-economic aspects. Weather data was acquired from the South African Weather Service. Historic land use was determined through available data. The data accumulated and analysed is therefore deemed sufficient to gain a baseline indication of the present state of the environment. The use of this baseline data for impact assessments is thus justified, and reliable conclusions could be made. The impacts that could arise during and after the proposed activities at the Doornkloof Prospecting Area were determined and ranked according to their significance. Based on the impact assessment,

recommendations were made for the mitigation of significant negative environmental impacts that will result from the proposed area.

PART A

SECTION ONE

Introduction

1 INTRODUCTION

1.1 WHO IS DEVELOPING THE BAR AND EMPR?

1.1.1 Name and contact details of the EAP who prepared the BAR and EMPR

EAP: Mr. Ornassis Tshepo Shakwane

Professional registration:

SACNASP: 117080

EAPASA: 2019/1763

IAIA Membership: 3847

Company: Geovicon Environmental (Pty) Limited

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MIDDELBURG, 1050

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E-mail: tshepo@geovicon.co.za

1.1.2 Expertise of the EAP who prepared the BAR and EMPR

Geovicon Environmental (Pty) Limited is a geological and environmental consulting company. The company was formed during 1996, and currently has twenty-five years' experience in the geological and environmental consulting field. Geovicon Environmental (Pty) Limited has successfully completed consulting areas in the Mining sector (Iron ore, gold, base metal and diamond), Quarrying sector (sand, aggregate and dimension stone), Industrial sector and housing sector. Geovicon Environmental (Pty) Limited has undertaken contracts within all the provinces of South Africa, Swaziland, Botswana and Zambia. During 2001 Geovicon Environmental (Pty) Limited entered the field of mine environmental management and water monitoring.

Geovicon Environmental (Pty) Limited is a Black Economically Empowered Company with the BEE component owning 60% of the company. Geovicon Environmental (Pty) Limited has three members i.e., O.T Shakwane, J.M. Bate and T.G Tefu.

Mr. O.T Shakwane obtained his BSc (Microbiology and Biochemistry) from the University of Durban Westville in 1994, and completed his Honours degree in Microbiology in 1995. Mr O.T Shakwane has also completed short courses on environmental law, environmental impact assessment, environmental risk assessment and environmental management system with a number tertiary institution. He has worked with the three state departments tasked with mining and environmental management i.e., Department of Water and Sanitation (Gauteng and Mpumalanga Region), Department of Mineral Resources (Mpumalanga Region) and Department of Agriculture, Conservation and Environment (Gauteng Region). Mr. Shakwane has been in the consulting field since 2004 and has completed various projects similar to the proposed in-pit

discard disposal as an environmental assessment practitioner. Mr Shakwane, a registered environmental assessment practitioner, is the reviewer for the BAR and EMPR for the proposed Prospecting Area for Iron ore. He is registered with the Environmental Assessment Practitioners Association of South Africa and South African Council for Natural Scientific Professions as an Environmental Assessment Practitioner and a Professional Natural Scientist, respectively in terms of the section 20(3) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003). He is also a member of the International Association for Impact Assessment, South Africa.

Geovicon Environmental (Pty) Limited is an independent consulting company, which has no interest in the outcome of the decision regarding the Doornkloof prospecting area 's basic assessment process.

1.2 WHO WILL EVALUATE AND APPROVE THE BAR AND EMPR?

Before the proposed area can proceed, an Environmental Assessment Practitioner (EAP) must compile an application for an environmental authorisation for the proposed area. An impact assessment (basic assessment process) must be undertaken in support of the application for an environmental authorisation. The basic assessment process will determine the potential environmental impacts that may result from the proposed area and an environmental management programme will be compiled to provide measures for mitigation against the identified impacts. The above-mentioned application must be made to the competent authority and in terms of section 24D (1) of NEMA, the Minister responsible for mineral resources is the responsible competent authority for this application. In view of the above, the application for the environmental authorisation for the proposed area will be submitted to the Department of Mineral Resources (DMRE), North West Regional Office for their consideration and decision making.

In the spirit of co-operative governance and in compliance with the requirements of NEMA and the MPRDA, the competent authority may, during the processing for the environmental authorisation application, consult with other organs of state that administers laws that relate to matters affecting the environment relevant to this application. Note that during the public participation process for the proposed area, the EAP will also consult with the below listed state authorities.

The organs of state that are to be consulted may include the following:

North West Department of Rural, Environment and Agricultural Development, North West Tourism and Parks board, Department of Water and Sanitation (DWS) and National Department of Agriculture, Forestry and Fisheries (NDAFF).

Note however that this list is not exhaustive as more organs of state may be identified by the competent authority and EAP during the public participation process.

1.3 DETAILS OF THE APPLICANT

1.3.1 Name of the Applicant

National Treasure Minerals (Pty) Limited

1.3.2 Name of the Area

Doornkloof Prospecting Area

1.3.3 Postal Address of Applicant

National Treasure Minerals (Pty) Limited

PO BOX 90512

GARSFONTEIN

0042

1.3.4 Responsible Person

Mojalefa Mongwe

1.3.5 Contact Person

Mojalefa Mongwe

Fax: (086) 575 1718

Tell: (074)5489 726

Cell: (074) 5489 726

E-mail: douglas@xakwa.com

1.4 DESCRIPTION OF THE PROPERTY (LOCATION OF THE AREA)

1.4.1 Regional Setting

The Doornkloof Prospecting area is situated within the Brits Magisterial District approximately 61.38 km North of Brits, access to the proposed prospecting area will be via the R511 Provincial Road from Brits town. See Table 1 below for the distance and directions of towns near the Doornkloof Prospecting area and Figure 1 for the location of Doornkloof Prospecting area.

1.4.1 Direction and Distance to Nearest Towns

Table 1: Direction and Distance to Nearest Towns and Villages

Town/ Community	Direction from property	Distance (KM)
Brits	North	61.38 KM
Rustenburg	South West	70 KM
Thabang	West	08 KM
Ramakokastad	West	10 KM
Bojating	West	16 KM

1.4.2 Physical Address and Farm Name of the Prospecting Area

National Treasure Minerals (Pty) Limited, Doornkloof prospecting area is situated on portions over portions 4, 8, 24, 33, 34 and 37 of the farm Doornkloof 141 JQ, the remaining extent of the farm Tambotie 961 JQ and the remaining extent of the farm Tambotie 146 JQ of the farm Doornkloof 141 JQ, the remaining extent of the farm Tambotie 146 JQ and portion of the remaining extent of the farm Tambotie 961 JQ, situated within the Brits Magisterial District, North West Province.

1.4.3 Magisterial District & Regional Services Council

Magisterial District: Brits.

District Municipality: Bojanala Platinum.

Local Municipality: Madibeng.

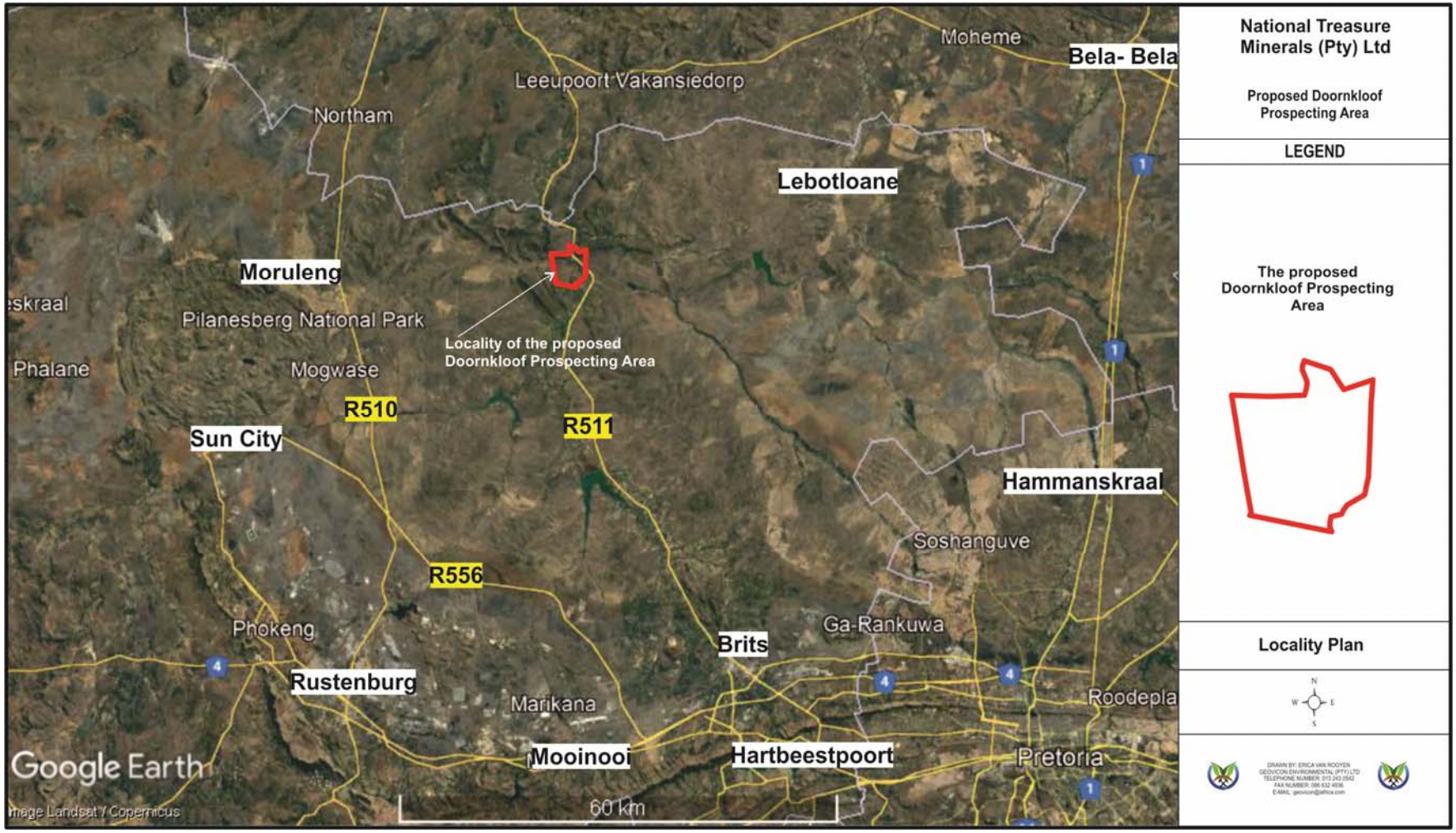

Figure 1: Locality Plan of the Proposed Doornkloof Prospecting Area

1.4.4 Land Tenure and Use of Immediate and Adjacent Land

The Land tenure for the properties within and adjacent to the proposed Doornkloof Prospecting Area is described in Table 2 indicated also in Figure 2 below.

Table 2: Schedule of properties listing surface ownership within and adjacent Doornkloof Prospecting Area

FARM NAME AND NUMBER	21 DIGIT SURVEYOR GENERAL CODE	DESCRIPTION OF SUB-DIVISION	SURFACE OWNER
DIRECT SURFACE OWNERS			
DOORNKLOOF 141 JQ	T0JQ00000000014100004	Portion 4	Daniël Johannes Fourie
DOORNKLOOF 141 JQ	T0JQ00000000014100008	Portion 8	Daniël Johannes Fourie
DOORNKLOOF 141 JQ	T0JQ00000000014100024	Portion 24	Johan Grobler Familie Trust
DOORNKLOOF 141 JQ	T0JQ00000000014100033	Portion 33	J P Grobler Construction & Plant (Pty) Ltd
DOORNKLOOF 141 JQ	T0JQ00000000014100034	Portion 34	Johan Grobler Familie Trust
DOORNKLOOF 141 JQ	T0JQ00000000014100037	Portion 37	SANRAL
TAMBOTIE 146 JQ	T0JQ00000000014600000	RE	Johan Grobler Familie Trust
TAMBOTIE 961 JQ	T0JQ00000000096100000	RE	Grobler Construction and Plants (Pty) Limited
IMMEDIATELY ADJACENT SURFACE OWNERS			
KRUIDFONTEIN 139 JQ	T0JQ00000000013900002	Portion 2	Johan Grobler Familie Trust
DOORNKLOOF 141 JQ	T0JQ00000000014100007	Portion 7	Daniël Johannes Fourie
DORINGKLOOF 5 JQ	T0JQ00000000000500000	RE	Assen Trust
SWARTHOEK 10 JQ	T0JQ00000000001000000	RE	Mauheto Vakansie Plaas cc
ASSEN 161 JQ	T0JQ00000000016100000	RE	PPC Cement SA (Pty) Limited

FARM NAME AND NUMBER	21 DIGIT SURVEYOR GENERAL CODE	DESCRIPTION OF SUB-DIVISION	SURFACE OWNER
VAALKOP 192 JQ	T0JQ00000000019200014	Portion 14	J P Grobler Construction & Plant (Pty) Ltd
VAALKOP 192 JQ	T0JQ00000000019200018	Portion 18	Expidor 122 cc
LANGRAND 143 JQ	T0JQ00000000014300005	Portion 5	Baphalane Communal Property Association

Refer to **Appendix B** for the deeds list of the direct farms.

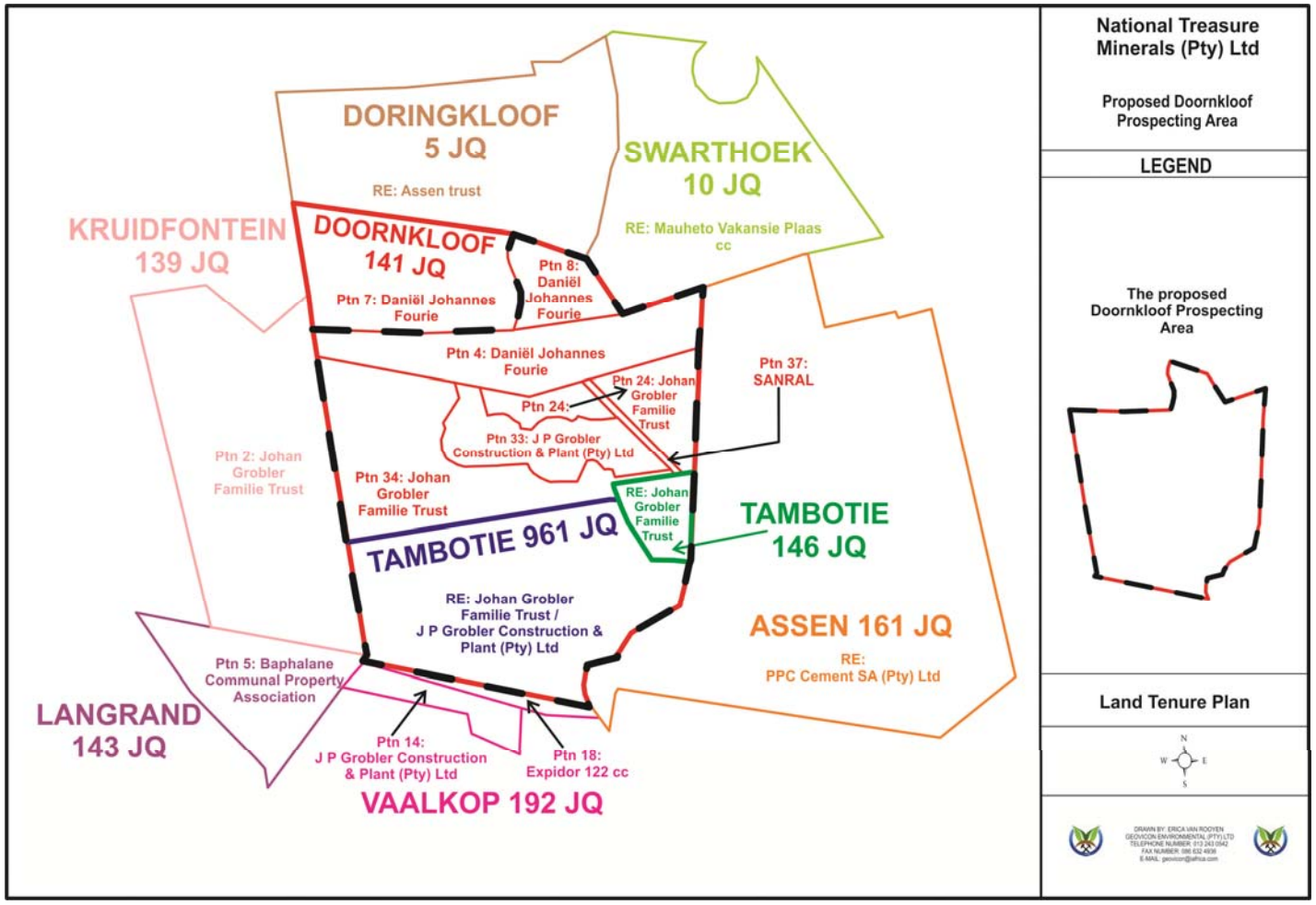

Figure 2: Land Tenure Plan of the Proposed Doornkoof Prospecting Area

SECTION TWO

Description of the Scope of the Proposed Doornkloof Prospecting Area

2 DESCRIPTION OF THE SCOPE OF THE PROPOSED AREA

2.1 LISTED ACTIVITIES AND SPECIFIED ACTIVITIES

National Treasure Minerals (Pty) Limited proposes to undertake Iron ore prospecting activities over the Doornkloof Prospecting Area, located over portions 4, 8, 24, 33, 34 and 37 of the farm Doornkloof 141 JQ, the remaining extent of the farm Tambotie 961 JQ and the remaining extent of the farm Tambotie 146 JQ. The proposed area entails prospecting for Iron ore using various exploration methods. Access to the prospecting area will be via existing regional road (R 511).

Before the proposed Doornkloof prospecting area can be commenced with, an environmental authorisation must be obtained by National Treasure Minerals (Pty) Limited. In view of the above, National Treasure Minerals (Pty) Limited has applied for an environmental authorisation for listed activities within the proposed area. The above-mentioned environmental authorisation application was acknowledged by the Department. This section will indicate the activities that were included in this environmental authorisation application. Refer to Table 3 below. The Prospecting Area is compiled as prescribed by the DMRE BAR and EMPR template and reflect all Doornkloof prospecting area activities applied for.

2.2 DESCRIPTION OF THE PROPOSED DOORNKLOOF PROSPECTING AREA

National Treasure Minerals (Pty) Limited proposes to prospect for Iron ore over Doornkloof prospecting area. These activities will be undertaken over portions 4, 8, 24, 33, 34 and 37 of the farm Doornkloof 141 JQ, the remaining extent of the farm Tambotie 961 JQ and the remaining extent of the farm Tambotie 146 JQ. The activities also include the usage of various exploration methods.

Table 3: Proposed Doornkloof Prospecting area listed Activities

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
PROPOSED DOORNKLOOFPROSPECTING AREA LISTED AND SPECIFIC ACTIVITIES			
NATIONAL ENVIRONMENTAL MANAGEMENT ACT			
Conducting prospecting activities within the Doornkloof Prospecting area for the exploration of Iron ore using a diamond core drilling prospecting method together with all associated infrastructure and activities. These include site establishment (access to site and a campsite), pegging of drilling sites, drilling of exploration boreholes with associated sumps, logging and sampling of drilled cores and site rehabilitation.	1933.10 hectares	Activity 20 of Listing Notice 1: 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 associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).	NO. 327

2.2.1 Target Mineral

Iron ore.

2.2.2 Prospecting Method Used at the Doornkloof Prospecting Area

The proposed Doornkloof Prospecting area will be explored in three phases i.e., literature review/field mapping phase and two drilling phases. Doornkloof Prospecting Area will be undertaken in three phases. Phase 1 will involve the following activities i.e., gathering of existing geological data in and around the Prospecting Area and computer modelling of existing data. This phase will be used to decide whether to commence with the second phase of the project. Phase 2 will involve the geological core drilling programme. A suitable number of geological core boreholes will be drilled on predetermined positions. The borehole cores will be logged, sampled and analysed. A pre-feasibility study will be compiled based on the results of the analyses. Phase 3 will be undertaken, should phase 2 indicate the prospecting area to have sufficient reserves. This phase will include drilling of additional geological exploration boreholes logging and analysis of the sampled cores. Based on the results of the above prospecting activities, a mining feasibility report will be compiled if necessary.

2.2.3 Planned Life of Area

The current estimated life of the proposed Doornkloof Prospecting Area is five years.

2.3 DOORNKLOOF PROSPECTING AREA SURFACE INFRASTRUCTURE DESCRIPTION

2.3.1 Access Roads

There are various main & minor roads passing over the proposed prospecting area. Some of these roads will be used to access the proposed Doornkloof prospecting area. Existing roads to be used for the proposed area include the R 511 provincial road, and other access roads will be established for use during the prospecting activities. No clearing of natural vegetation will be undertaken.

2.3.2 Power

Diesel powered vehicles and machinery will be used for the proposed project.

2.3.3 Water Supply

Water will be supplied from the landowner’s borehole or any farm dam that might exist on the property and will be trucked with a water cart to all drill sites. Water that will be required is for the operation of machinery and domestic use within the campsite and drilling sites.

2.3.4 Ablution Facilities

Sewage waste will be generated from the campsite and drilling sites. Portable chemical toilets will be used for the management of sewage waste generated on site.

2.3.5 Workshops and Buildings

Mobile office containers will be utilised therefore, no buildings will be erected. All machinery will be maintained at an offsite workshop. Should emergency repairs be required the repairs will be conducted on site on areas covered with tarpaulins.

2.3.6 Waste Management

2.3.6.1 Waste Identification and Management

Hazardous Waste

Hazardous waste to be generated includes hydrocarbon wastes (oil and liquid fuel wastes) and sewage waste. Hydrocarbon waste will be collected in drums for storage. The removal of the drums or any other appropriate receptacle will be undertaken by a registered waste disposal company to be appointed for disposal of such waste at a registered licensed waste disposal site. The drums will be placed on protected ground.

Oil waste and liquid fuel waste include used oils from machinery and vehicles and diesel waste.

General Waste

General waste to be generated from the proposed project area will include domestic waste which includes old food, polystyrene, old stationary, discarded Personal Protective Equipment (PPE) and old clothing generated from the drilling and campsites. General waste will be collected in drums and disposed of at a registered domestic waste disposal site.

2.4 DOORNKLOOF PROSPECTING AREA METHOD STATEMENT

In terms of the DMRE's BAR and EMPR template, National Treasure Minerals (Pty) Limited must describe the methods and technology to be employed for the proposed area. In view of the above, a method statement for each phase of the proposed project has been provided. This identifies all actions, activities or processes associated with the proposed prospecting operation.

2.4.1 Pre-Construction Phase

2.4.1.1 Data gathering

Relevant information regarding the potential of the identified prospecting area will be sourced from institutions like the Council for Geoscience. This information will be analysed and interpreted through computer modelling of existing data.

The interpretation of the said data will result in compiling a literature review report. The said report will give indication as to what processes (in order of priority) to follow to complete the prospecting activities.

2.4.1.2 Field Mapping

The field mapping will include field surveying (to determine sensitive areas), geophysical or geomagnetic surveys and pegging of the drilling sites.

2.4.1.3 Detailed site survey and investigation

Demarcation of sensitive and protected areas will be conducted by physical survey of the proposed area by a suitability qualified person. This should be done before establishment of access to the site, campsites and drilling of exploration boreholes.

2.4.1.4 Geophysical surveys and data interpretation

Relevant geophysical surveys will be used to perform and to determine if desired minerals are present over the proposed prospecting site.

2.4.1.5 Pegging of drill sites

All exploration borehole sites will be staked by a suitably qualified person. The sites will thereafter be plotted on a plan drawn to an appropriate scale.

2.4.1.6 Decision to commence with prospecting activities

Once all factors are gathered, physical inspection of the terrain conducted to verify certain aspects, such as, type of the terrain involved, type of methods to be used, etc. The important point to note is that a decision on whether or not to proceed with prospecting depends not only on the scientific and reliability of the methods under consideration, but also upon many fewer tangible factors, such as restrictions that might be imposed by the relevant Department when granting a prospecting right.

2.4.2 Construction Phase

Construction phase will involve the establishment of access to the drilling sites (tracks and/or existing roads) and establishment of campsite (a caravan/tents and chemical toilet).

2.4.1 Establishment of access

The regional road (R511) runs north of the proposed area from Brits town. Number of private farm roads and tracks lies in close proximity to the proposed prospecting area, hence access to the site will be through these roads. Where necessity, arise for access to the drilling sites, tracks will be established as access to the drilling site. These, tracks will be established to be more than hundred meters away from any sensitive landscapes. The tracks will also be sited away from protected areas. Vegetation clearance will be avoided during the establishment of the access tracks.

2.4.2 Establishment of campsite

Tents and/or caravans, ablution facilities (chemical toilets) and waste storage facilities will be provided for employees. Clearing of vegetation will be avoided during the establishment of the campsite

2.4.3 Operational Phase

2.4.3.1 Diamond drilling for boreholes and sump Construction

Geological boreholes will be drilled on a predetermined grid. During drilling of each borehole, a sump of approximately 1.0 x 1.0 x 1.0 m will be excavated for collecting of excess muds (water) from the drilling operation and for recycling of the water used for the operation of the drilling machine. Please note that the borehole layout can only be determined once the Prospecting Right is granted, thereafter it will be sent in to the Department of Mineral Resources and Energy.

2.4.3.2 Topsoil storage site

The top and sub soils that will be removed from the sump and drilling boreholes will be stockpiled in close proximity to the sump. The sumps will be backfilled manually by spade, once drilling and sampling of boreholes is completed.

2.4.3.3 Logging and sampling of the Core

This involves the physical description of the rocks intersected by the drilling process. The interpretation of these rock descriptions will assist in establishing the general stratigraphy of the area. Sampling will be taken at the desired horizons and sent to the laboratory for analyses.

2.4.3.4 Site Rehabilitation

Concurrent rehabilitation (Plugging and reseeding) of disturbed areas will be undertaken as drilling continues.

2.4.4 Decommissioning phase

2.4.4.1 Final Rehabilitation

Except for farm roads, no tracks and infrastructure related to the prospecting operation will remain in place after the decommissioning phase. Where tracks have resulted in more damage, such tracks will be ripped and allowed to return to the natural state, and seeding is not done as experience has shown that the natural process returns the site to its former state within a seasonal cycle. The sumps will be rehabilitated in such a manner to return the area to as close as possible to its pre-drilling environment. Post closure, the prospecting area will consist of re-vegetated areas with vegetation cover comparable to the surrounding areas. This will be unaffected by the prospecting activities. No prospecting related infrastructure will remain on the prospecting site. The area will conform to the pre-prospecting topography. The areas affected by prospecting will be stable and erosion free.

2.4.4.2 Pre-feasibility study

This involves the compilation of a final geological report, reserve determination and pre-feasibility studies if necessary.

2.4.4.3 Mining feasibility study

This involves the conducting of a mining feasibility study, market research, sales agreements etc.

2.4.5 After Closure Phase

The rehabilitated area will be monitored on a quarterly basis to ensure that the site returns to an acceptable state, in the event that is not happening naturally, the area will be seeded. After the decommissioning of the site and if it can be determined that the site is stable, an environmental authorisation for the decommissioning of the site and a closure certificate will be applied for in terms of the relevant laws.

SECTION THREE

Policy and legislative context

3 POLICY AND LEGISLATIVE CONTEXT

3.1 CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, 1996 (ACT NO. 108 OF 1996)

Section 24 of the Constitution of the Republic of South Africa (Act No.108 of 1996) states that everyone has the right:

a) to an environment that is not harmful to their health or well-being; and

b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that;

(i) prevent pollution and ecological degradation;

(ii) promote conservation; and

(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

In terms of Section 24 of the Constitution of the Republic of South Africa (Act No.108 of 1996), everyone has the right to an environment that is not harmful to their health or well-being. In addition, people have the right to have the environment protected, for the benefit of present and future generations, through applicable legislations and other measures that prevent pollution, ecological degradation and promote conservation and secure ecological sustainable development through the use of natural resources while prompting justifiable economic and social development. The needs of the environment, as well as affected parties, should thus be integrated into the overall area in order to fulfil the requirements of Section 24 of the Constitution. In view of the above, a number of laws pertaining to environmental management were promulgated to give guidance on how the principles set out in section 24 of the Constitution of the Republic of South Africa (Act No.108 of 1996) would be met. Below are laws applicable to the proposed prospecting area that was promulgated to ensure that section 24 of the Constitution of the Republic of South Africa (Act No.108 of 1996) is complied with.

3.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998)

Section 24(1) of the NEMA states:

“In order to give effect to the general objectives of integrated environmental management laid down in this Chapter [Chapter 5], the potential consequences for or impacts on the environment of listed activities or specified activities must be considered, investigated, assessed and reported on to the competent authority or the Minister of the Department of Mineral Resources and Energy, as the case may be, except in respect of those activities that may commence without having to obtain an environmental authorisation in terms of this Act.”

In order to regulate the procedure and criteria as contemplated in Chapter 5 of NEMA relating to the preparation, evaluation, submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities, subjected to environmental impact assessment, in order to avoid or mitigate detrimental impacts on the environment, and to

optimise positive environmental impacts, and for matters pertaining thereto, Regulations (EIA Regulations, 2014) were promulgated. These Regulations took effect from the 4th of December 2014.

In addition to the above, Section 28 of the NEMA includes a general "Duty of Care" whereby care must be taken to prevent, control and remedy the effect of significant pollution environmental degradation. This section stipulates the importance to protect the environment from degradation and pollution irrespective of the operations taking places or activities triggered / not triggered under NO. 327, NO. 325 and NO.324.

In view of the above, an environmental impact assessment is being undertaken to comply with the requirements of the NEMA and the NEMA EIA Regulations, 2014. The NEMA EIA Regulations of December 2014 determines requirements to be met in order to obtain an environmental authorisation. This report has therefore been compiled in compliance with the above regulations.

3.3 NATIONAL ENVIRONMENTAL MANAGEMENT AIR QUALITY ACT, 2004 (ACT NO. 39 2004)

The National Environmental Management: Air Quality Act (Act No.39 of 2004) (NEM: AQA) focuses on reforming the law regulating air quality in South Africa in order to protect the environment through the provision of reasonable measures protecting the environment against air pollution and ecological degradation and securing ecological sustainable development while promoting justifiable economic and social developments. This Act provides national norms and standards regulating air quality management and control by all spheres of government. These include the National Ambient Air Quality Standards (NAAQS) and the National Dust Control Regulations (NDCR). The standards are defined for different air pollutants with different limits based on the toxicity of the pollutants to the environment and humans, number of allowable exceedances and the date of compliance of the specific standard.

On 22 November 2013 the list of activities which result in atmospheric emissions which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage was published under GN R893 in Governmental Gazette No 37054, in terms of Section 21(1)(b) of the NEM: AQA.

The proposed will not trigger any of the activities listed under the above-mentioned Regulations, however National Treasure Minerals (Pty) Limited must ensure that emissions from their activities complies with the standards as set in the above-mentioned regulations.

3.4 THE NATIONAL HERITAGE RESOURCES ACT, 1999 (ACT NO. 25 OF 1999)

The National Heritage Resources Act (Act No. 25 of 1999) (NHRA) focuses on the protection and management of South Africa's heritage resources. The governing authority for this act is the South African Heritage Resources Agency (SAHRA). In terms of the NHRA, historically important features such as graves, trees, archaeology and fossil beds are protected as well as culturally significant symbols, spaces and landscapes. Section 38 of the NHRA stipulates the requirements a developer must undertake prior to development. In terms of Section 38 of the NHRA, SAHRA can call for a Heritage Impact Assessment (HIA) where certain categories of development are proposed.

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon.

The Act also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that if such an assessment is deemed adequate, a separate HIA is not required. An assessment of the proposed area will be done during the drilling programme to determine if there are nay sites that require protection. Any sites identified will be marked and no drilling will be undertaken in close proximity of such a site.

3.5 NATIONAL ENVIRONMENTAL MANAGEMENT BIODIVERSITY ACT, 2004 (ACT NO. 10 OF 2004) (NEMBA)

The National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEMBA) provides for the management and protection of South Africa's biodiversity within the framework established by NEMA. The Act aims to legally provide for biodiversity conservation, sustainable, equitable access and benefit sharing and provides for the management and control of alien and invasive species to prevent or minimize harm to the environment and indigenous biodiversity. The Act imposes obligations on landowners (state or private) governing alien invasive species as well as regulates the introduction of genetically modified organisms. The Act encourages the eradication of alien species that may harm indigenous ecosystems or habitats. The NEMBA ensures that provision is made by the site developer to remove any aliens which have been introduced to the site or are present on the site.

The NEMBA also provides for listing of threatened or protected ecosystems, in one of four categories: critically endangered, vulnerable or protected. The purpose of listing protected ecosystems is primarily to conserve sites of exceptionally high conservation value.

The Act supports South Africa's obligations under sanctioned international agreements regulating international trade in specimens of endangered species, and ensures that the utilization of biodiversity is managed in an ecological sustainable way.

The draft BAR and EMPR has been complied to ensure that all applicable requirements prescribed in the NEMBA are complied with.

3.6 NORTH WEST NATURE CONSERVATION ACT, 1998 (ACT NO. 10 OF 1998)

To provide for the management and conservation of the North West's biophysical environment and protected areas within the framework of the National Environment Management Act, 1998 (Act No 107 of 1998); to provide for the protection; to provide for the sustainable use of indigenous biological resources; and to provide for matters connected therewith.

3.7 MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002 MPRDA)

The Department of Mineral Resources (DMRE) is responsible for regulating the mining and minerals industry to achieve equitable access to the country's resources and contribute to sustainable development. The Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) requires that an EIA be conducted and that the EMP be drafted for the mitigation of impacts identified during the environmental impact assessment for a mining area. During December 2014, the "One Environmental System" was implemented by Government which initiated the streamlining of the licensing processes for mining, environmental authorisations and water use. Under the One Environmental System, The Minister of Mineral Resources, will issue environmental authorisations and waste management licences in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), and the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA), respectively, for mining and related activities. The Minister of Environmental

Affairs will be the appeal authority for these authorisations. In view of the above the application for the environmental authorisation for the proposed area was submitted to the Department of Mineral Resources as the competent authority.

3.8 NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998 NWA)

The National Water Act (Act No. 36 of 1998) (NWA) is the primary regulatory legislation, controlling and managing the use of water resources as well as the pollution thereof in South Africa. The NWA recognises that the ultimate aim of water resource management is to achieve sustainable use of water for the benefit of all users and that the protection of the quality of water resources is necessary to ensure sustainability of the nation's water resources in the interests of all water users. The NWA presents strategies to facilitate sound management of water resources, provides for the protection of water resources, and regulates use of water by means of Catchment Management Agencies, Water User Associations, Advisory Committees and International Water Management. The National Government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest. Further, an industry can only be entitled to use water if the use is permissible under the NWA. The enforcing authority on water users is the Department of Water and Sanitation (DWS).

Further, Regulation 704 of the NWA deals with the control and use of water for mining and related activities aimed at the protection of water resources.

No water use licence application will be submitted to the Department of Water and Sanitation for their consideration. However, measures will be undertaken to ensure that requirements in terms of the NWA and the GN 704 are complied with where necessary.

3.9 NATIONAL ENVIRONMENTAL MANAGEMENT, 2008 (ACT NO. 59 OF 2008 WASTE ACT)

The National Environmental Management: Waste Act (NEMWA) requires that all waste management activities must be licensed. According to Section 44 of the NEMWA, the licensing procedure must be integrated with an EIA process in terms of the NEMA.

The objectives of NEMWA involve the protection of health, wellbeing and the environment. The NEMWA provides measures for the minimisation of natural resource consumption, avoiding and minimising the generation of waste, reducing, recycling and recovering waste, and treating and safely disposing of waste.

No waste management activities are triggered by the proposed area, hence no application in terms of the NEMWA was submitted to the Department of Mineral Resources and Energy.

3.10 EIA GUIDELINES

A number of national and provincial EIA guidelines were published by different departments. These guidelines are mainly aimed at assisting relevant stakeholders by providing information and guidance and giving recommendations on a number of aspects relating to the environmental impact assessment process. The guidelines can be used by the competent authority, applicant and the EAP during the EIA process. It is therefore important that the EAP and the person compiling a specialist report must have relevant expertise when conducting the environmental impact assessments.

A number of guidelines were consulted during the compilation of this report and these include amongst them the following i.e., Guidelines on the Need and Desirability, Department of Environmental Affairs and Tourism Integrated Environmental Management Guidelines, Department of

Water and Sanitation’s Best Practice Guidelines and the Western Cape Provincial Department of Environmental Affairs and Development Planning Guidelines on Public Participation.

SECTION FOUR

Need and desirability of the proposed activities

4 NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

The definition of prospecting in terms of the MPRDA states: “intentionally searching for any minerals by means of any method which disturbs the surface or sub-surface of the earth, including any portion of the earth that is under the sea or under other water.” Prospecting is the physical search for minerals, fossils, precious metals or mineral specimens, which allows a company to survey or investigate an area of land for the purpose of identifying an actual or probable mineral deposit, before investments are made into the mining activities.

In terms of the EIA Regulations the need and desirability of any development must be considered by the relevant competent authority when reviewing an application. The need and desirability must be included in the reports to be submitted during the environmental authorisation application processes.

This section of the BAR and EMPR will indicate the need and desirability for the proposed Doornkloof Prospecting Area.

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

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

National Treasure Minerals (Pty) Limited expects that substantial benefits from the area (should Iron ore be found) will accrue to the immediate area, the sub-region and the province of North West. These benefits must be offset against the costs of the area, including the impacts to land owners.

The potential benefits of the proposed area are:

Highly significant benefits to the province of North West in terms of the Iron ore supply.

Potential reduction in crime because of short-term job creation during construction (providing farm safety and security measures are implemented), but also in the long-term in the region, as a result of job creation.

Local growth in the economy of the towns of Delareyville and surrounding areas, and for local businesses including those that supply accommodation, transport etc.

Economic benefits for contractors and other suppliers of goods and services.

Economic opportunities and other potential benefits for land owners from compensation for impacts.

Based on the environmental assessment conducted as described in this Report, there are no environmental impacts associated with the proposed prospecting area that cannot be mitigated

SECTION FIVE

Motivation for the preferred development footprint

5 MOTIVATION FOR THE PREFERRED DEVELOPMENT FOOTPRINT

5.1 CONSIDERATION OF ALTERNATIVES

The National Environmental Management Act 107 of 1998, Environmental Impact Assessment Regulations, 2014 requires a BAR and EMPR to identify alternatives for areas applied for. In terms of the above-mentioned regulations an alternative in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the (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.

National Treasure Minerals (Pty) Limited to undertake exploration for Iron ore to determine whether or not the area consist of Iron ore and if Iron ore is available whether the Iron ore reserves are found quantities that have economic value. The proposed prospecting activity will include the drilling of exploration boreholes. The associated activities/infrastructure will include, an access to the site and a campsite.

5.1.1 Location Alternatives

The location alternative considered for the proposed area include the prospecting sites and associated campsite location and access routes. The location alternatives were selected based on a number of criteria, which include the environmental considerations (how sensitive is the area in terms of soils, wetlands, groundwater etc.), sensitive receptors (proximity to communities and farmsteads) and the dependency of the area to the required infrastructure.

5.1.1.1 Prospecting Sites

The prospecting sites were selected based on published relevant literature; therefore, no alternatives were considered since the anticipated minerals could be located on certain portions of the farm Doornkloof 141 JQ, remaining extent of the farm Tambotie 146 JQ and the remaining extent portion of the farm Tambotie 961 JQ.

5.1.1.2 . Access Routes/ Transport alternatives

Two alternatives were considered i.e., an existing road and a new road. Since the proponent would like to limit pollution of footprint, the existing access road was decided upon. The R511 road passes in close proximity to the farm, and an unnamed road passes right across the farm.

5.1.1.3 Campsite Location

Regarding the location of the campsite, three alternatives were considered. These locations included a static location close to the entrance of the site, mobile caravans and an offsite campsite.

Since the site closer to the farm property may result in undesirable impacts on the residents of the farm property and the offsite alternative may results in unforeseen impacts due to the unavailability of other necessary services that comes with having a local campsite these two alternatives were discarded.

The caravans would be used during the prospecting operations. Note, that the mobile caravans will move with the drilling team from site to site during the execution of the drilling programme.

5.1.2 Design/Layout Alternatives

Since no complicated surface infrastructure will be required for this area no design and layout alternatives for the proposed prospecting area were determined.

5.1.3 Technology Alternatives

Based on the policies of the Department of Water and Sanitation, the local municipalities and the mine itself, it was determined that the only feasible technological way of undertaking the proposed activities would be to use energy currently available to the applicant (diesel or petrol), water from the landowner or nearby mine and existing waste management facilities from the nearby mine for the operation of the proposed area. In view of the above, no technology alternatives were considered for this area.

5.1.4 Input Material Alternatives

As mentioned above, current water sources used by the mine and currently available energy will be used for the operation of the proposed prospecting area. In view of the above, no in-put material alternatives were considered for this area. Note that no new building facilities will be constructed at the area site since existing or movable facilities will be used for the proposed prospecting area.

5.1.5 Operational Alternatives

5.1.5.1 Exploration Drilling Methods

Drilling of Iron ore is used to determine the depth, thickness and quality of the Iron ore at any point across a prospecting area. Drilling is also used to determine the strata with which the Iron ore is associated. Drilling can either be done by non-core drilling or core drilling techniques.

Non-Core Drilling Methods

Non-core drilling techniques mostly uses the rotary drilling methods. In this technique, a string of metal rods is rotated axially and a bit at the base of the string is forced downward, under controlled pressure, breaking up the ground and advancing the depth of the hole. Cuttings are swept away from the bit and lifted to the surface either by means of pumped circulating water or by jets of compressed air.

Logging of the hole drilled by non-core drilling methods is mainly based on the cuttings obtained as the drill progresses. In view for the difficulty and error bound logging, this method of drilling was discarded and may be used only for infill drilling wherever necessary.

Core-Drilling Methods

Core drilling techniques uses diamond drilling methods. In this technique, a hollow cylindrical drill bit impregnated with industrial diamonds is attached to a series of metal drill rods and rotated under

controlled downward pressure. A circle of rock is ground away, the cutting removed by water flushing and a cylindrical core remains in the hollow centre of the drill string.

Core drilling is the only satisfactory means of obtaining representative samples of seams at depth for quality determination. In view of the above and the fact that geophysical surveys will not be done, the preferred drilling methods is the core drilling technique using the diamond drill.

5.1.5.2 Transportation

No access route alternatives.

5.1.6 No Go Option

National Treasure Minerals (Pty) Limited intends on exploring the proposed area in order to determine availability of Iron ore. If it can be determined that the area has Iron ore of economic value, potential mining operations undertaken in a sustainable manner, will contribute to job creation within the Bojanala Platinum Local Municipality and beyond. Potential mining operations will also assist with the establishment of small and medium businesses and infrastructure development, community development and poverty eradication areas as well boost the local economy in the surrounding previously disadvantaged communities. Since the proposed prospecting process itself will have very low environmental impacts, as detailed in the EMPR, investigating the feasibility of future mining operations should be considered.

5.2 Details Of The Public Participation Process Followed and Results Thereof

Public participation is the cornerstone of any EIA process. The principles of the NEMA governs many aspects of EIA's, including public participation. The general objectives of integrated environmental management laid down in the NEMA include to "ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment". The National Environmental Management Principles includes the principle that "The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary to achieve equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured", which basically means that the person responsible for the application (EAP) must ensure that provision of sufficient and transparent information on an ongoing basis to stakeholders are made to allow them to comment, and to ensure that the participation of previously disadvantaged people like women and the youth are undertaken.

In terms of the EIA Regulations, 2014, when applying for environmental authorisation, the Environmental Assessment Practitioner (EAP) managing the application must conduct at least a public participation process where all potential or registered interested and affected parties, including the competent authority, are given a period of at least 30 days to submit comments on each of the basic assessment reports (BAR), EMPR, scoping report and environmental impact assessment report, and where applicable the closure plan. In this case a Basic Assessment Report (BAR), EMPR is considered.

This section of the BAR and EMPR will explain the public participation process to be taken in order to comply with the above-mentioned requirements. A number of public participation guidelines were published in a bid to assist persons responsible for the environmental authorisation applications. As

much of the available guidelines were used in determining the public participation process, in guiding the public participation process of the proposed prospecting area.

National Treasure Minerals (Pty) Limited is applying for an environmental authorisation for the proposed Doornkloof Prospecting project. The application for the environmental authorisation is undertaken in terms of the process as laid out in part 2 of Chapter 4 under the NEMA EIA Regulations, 2014. The above-mentioned regulations require that an applicant for an environmental authorisation mut submit a final BAR and EMPR to the competent authority after having subjected the reports to a public participation process. (In this case a draft BAR/EMPR will also be submitted to the competent Authority (CA)).

In view of the above, a public participation process was initiated for the proposed Doornkloof Prospecting Area. The public participation process for the proposed area is designed to provide sufficient and accessible information to interested and affected parties (I&APs) in an objective manner to assist them to:

- raise issues of concern and make suggestions for enhanced benefits;
- contribute local knowledge and experience;
- verify that their issues have been captured;
- verify that their issues have been considered in the technical investigations; and
- comments on the findings of the EIA/ EMP.

The following are and will be conducted in undertaking of the public participation process for the proposed prospecting area.

5.2.1 Registration and BAR Phase

The public participation process has commenced by providing potential Interested and affected parties (I&AP's) 30 days to register as interested and affected parties and to comment on the draft BAR and EMPR. The registration and commenting process will start on the 4th of November 2022 and ends on the 5th of December 2022. Note that all parties will be provides enough time (at least 30 days) to comment on the report.

5.2.1.1 Notification of potential interested and affected parties

The following methods of notification are used to notify the potential interested and affected parties of the opportunity to register during the public participation process for the proposed prospecting area:

- On the 4th of November 2022, notices were posted in the Platinum Weekly Newspaper which is distributed in host and surrounding town of the proposed prospecting area, informing the public that the BAR is in the Madibeng public library. The notices were compiled in compliance with the requirements of Regulation 41(3) of the EIA Regulations, 2014.
- On the 4th of November 2022, notices inviting potential interested and affected parties to register and comment on the draft BAR and EMPR for the proposed Doornkloof Prospecting Area will be fixed at three sites. The notices will be compiled to comply with the requirements of Regulation 41(3) of the EIA Regulations, 2014.

- Written notices will be sent to all surface owners and lawful occupiers of the land on which the proposed area will be undertaken, owners/lawful occupiers of land immediately adjacent to the proposed area, the municipal councillors of the ward in which the proposed prosecting area is situated, representatives of the municipalities which has jurisdiction over the proposed area (Madibeng Local Municipality and Bojanala Platinum District Municipality) These notices will be used to invite the parties to comments on the draft BAR and EMPR.
- The draft BAR and EMPR is submitted to all the commenting authorities for their comments.
- A copy of the draft BAR and EMPR will be placed in the Madibeng public Library for the public to peruse and make comments.
- On the 4th of November of 2022, notices were posted at the proposed prospecting area and distributed also where the neighbouring community will be able to read, the notice also informs the public that the draft BAR and EMPR is available for comments at the Madibeng public library located in Brits Town. The notices were compiled in compliance with the requirements of Regulation 41(3) of the EIA Regulations, 2014.

5.2.1.2 Registered Interested and Affected Parties

The following are currently registered as interested and affected parties for the Doornkloof Prospecting Area:

- Department of Mineral Resources and Energy, North West Regional Office (Competent Authority),
- Department of Water and Sanitation, North West Regional Office (Commenting Authority)
- National Department of Agriculture (Commenting Authority)
- North West Tourism and Parks board (Commenting Authority)
- South African Heritage Resources Agency (Commenting Authority)
- South African National Roads Agency (SANRAL)
- Ward 01 Councillor (Madibeng Local Municipality)
- Madibeng local municipality
- Land owners and lawful occupiers within the Doornkloof project's area.
- Land owners and lawful occupiers immediately adjacent to the project's area.
- MA Coal (Pty) Limited
- Hardrock Crete and Cement (Pty) Limited
- Pretoria Portland Cement Company Limited

5.2.1.3 Proof of Consultation

Proof of the above-mentioned consultation and results thereof will be included in the final BAR and EMPR.

5.2.1.4 Finalisation of Interested and Affected Party Database.

On expiry of registration and commenting period, the database of interested and affected parties will be finalised. All parties who indicated the interest of being registered as interested and affected parties will be added to the list of interested and affected parties. All comments and responses to the comments will be populated in the final BAR and EMPR.

Note: All organs of state, which have jurisdiction in respect of any aspect of the proposed project area and the competent authority are automatically registered interested and affected parties.

5.2.2 Draft Basic Assessment Report

The draft BAR and EMPR was made available for comment to all relevant stakeholders during the above-mentioned registration phase of the proposed prospecting area public participation process.

5.2.2.1 Comments, Issues and Responses on the Draft BAR and EMPR

On lapsing of the commenting period, all comments and issues received from the interested and affected parties will be recorded and responses to the comments made. All reactions to the responses to the comments and issues raised will also be recorded.

The comments and issues raised by the interested and affected parties, their responses and reaction to the response will be presented in the final BAR and EMPR.

5.3 ENVIRONMENTAL ATTRIBUTES (BASELINE INFORMATION)

5.3.1 Geology and Soils

The Transvaal Supergroup is an end-Archaean/earliest Proterozoic platform succession developed on the Kaapvaal Craton. The rocks are preserved within three structural basins: Griqualand West (Ghaap-Postmasburg Groups) in central South Africa, Kanye (Taupone-Segwagwa Groups) in eastern Botswana and Transvaal (protobasinal rocks–Chuniespoort-Pretoria-Rooiberg Groups) in northern South Africa (Moore et al,2001).

In this threefold subdivision of the Transvaal Supergroup, the lowermost sequences (eastern Chuniespoort Group), typified by basal quartz arenites, a thick succession of dolomites and upper iron formations, are most widespread and easily correlated across the two basins. The middle sequence is represented in both the Transvaal (Pretoria Group) and Griqualand West (Postmasburg Group) basins, and the uppermost volcanic-dominated sequence (Rooiberg Group) is restricted to the Transvaal basin (Eriksson et al., 1993 and Eriksson et al., 1995).

The proposed prospecting area falls within the Transavaal supergroup, under the subgroup of Malmani. This Malmani Subgroup fragment along the Crocodile River north of Brits, is known as the Assen Formation. The ore-grade limestone at the study area, occurs within the lower layers of the Eccles Formation (VA1) and its base is formed by the Lyttleton Formation (VA2).

Soils are plinthic catena, eutrophic, red-yellow apedal, freely drained, high base status, Hutton and Clovelly with some Glenrosa and Mispah soil forms. Several areas have less sandy soil than that of SVcb 12 Central Sandy Bushveld. Land types mainly Bd, Ah, Ae and Fa.

The target area of this application is underlain by rocks of the Critical Zone of the BC, consisting of chromitite interlayered with pyroxenite, norite, anorthositic norite, and mottledanorthosite.

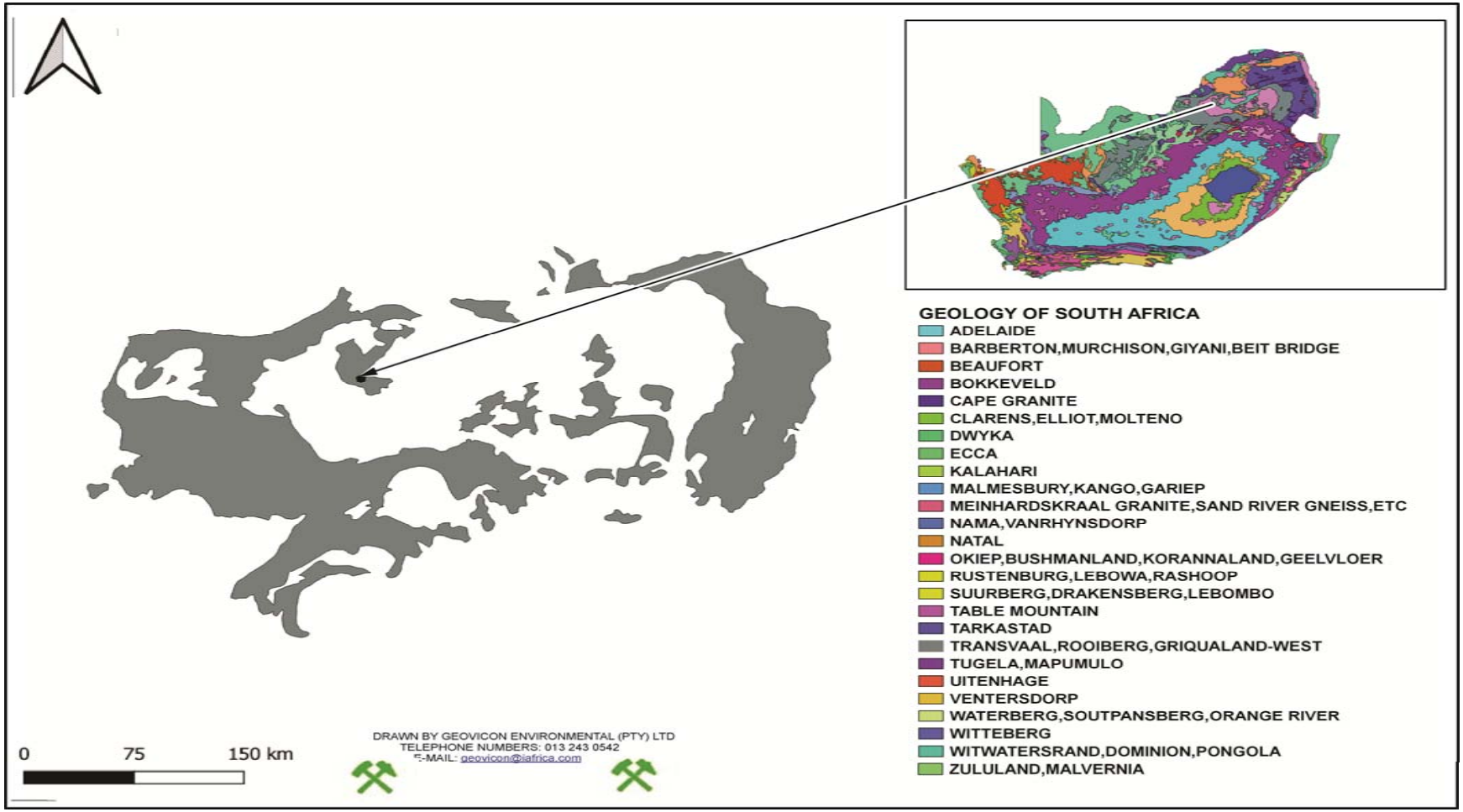

Figure 3: Geology of the Proposed Doornkloof Prospecting Area

5.3.2 Climate

5.3.2.1 Regional Climate

The study area is situated within the summer rainfall region, with the rainy season usually occurring between the months of October to March. The mean annual precipitation (MAP) is approximately 561mm, with the mean annual evaporation (MAE) for the study area being measured as approximately 2061mm per annum.

Please refer below to Table 4 for the Mean Annual Climatic Data for the study area.

Table 4: Mean annual precipitation (MAP) measurements of monthly rainfall and atmospheric temperature

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
MAP (mm)	112	82	68	31	8	4	2	3	12	52	81	105	561
MAE (mm)	228	195	190	149	123	97	105	140	185	215	211	224	2061

5.3.2.2 Temperature

Temperature statistics available for the town of Brits (situated approximately 61.38 km North of the proposed area) was used as an indication of temperatures for the study area. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Brits range from 19.8˚C in June to 29.3˚C in January. The region is the coldest during the month of July when the mercury levels drop to 2.1˚C on average during the night.

5.3.3 Topography

The area is characterised by a gentle undulating topography. The elevation ranges between 900 mamsl to 1220 mamsl. The watercourses within the study area the Crocodile River. The Crocodile River flows in a northerly direction and eventually ties into the Limpopo River. The Pienaars River, which is north of the study area flows into the Crocodile River, while the Tolwane River is a tributary of the crocodile river, See Figure 4 below.

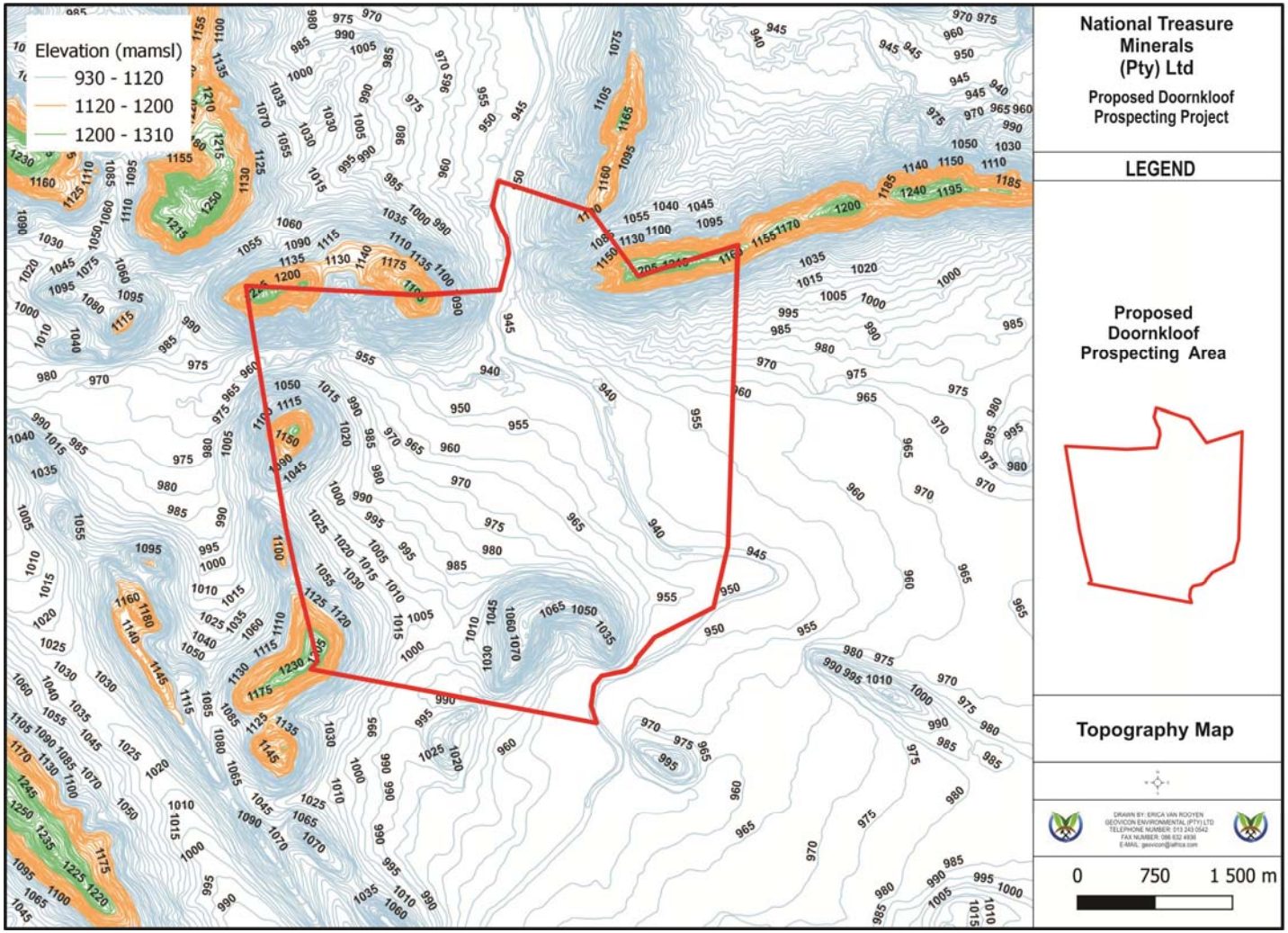

Figure 4: Elevation map of the proposed prospecting area

5.3.4 Current Land Use and Land Cover

The land in the area is used for grazing, crop production and has farmsteads, the Krokodil River flows through the area and is used for livestock drinking, there is also aa provincial road, namely the R511 that passes through the area. Adjacent land is used for mainly grazing and crop production (Figure 5).

Figure 5: Current Land Use

5.3.5 Natural Vegetation/Plant Life

The proposed Doornkloof prospecting site falls within the Madikwe Dolomite Bushveld (SVcb 2), and Western Sandy Bushveld (SVcb 16). The Vegetation characteristics of the Madikwe Dolomite Bushveld (SVcb 2) are dominated by deciduous trees, particularly *Combretum apiculatum* and *Kirkia wilmsii* (especially in the east). Herbaceous layer continuous, dominated by grasses. And that of Western Sandy Bushveld (SVcb 16) includes *Senegalia erubescens* on flat areas, *Combretum apiculatum* on shallow soils of gravelly upland sites and *Terminalia sericea* on deep sands. Occurs on slightly undulating plains.

The proposed Doornkloof prospecting site falls within the Madikwe Dolomite Bushveld (SVcb 2), and Western Sandy Bushveld (SVcb 16). See Figure 6 below for a visual indication.

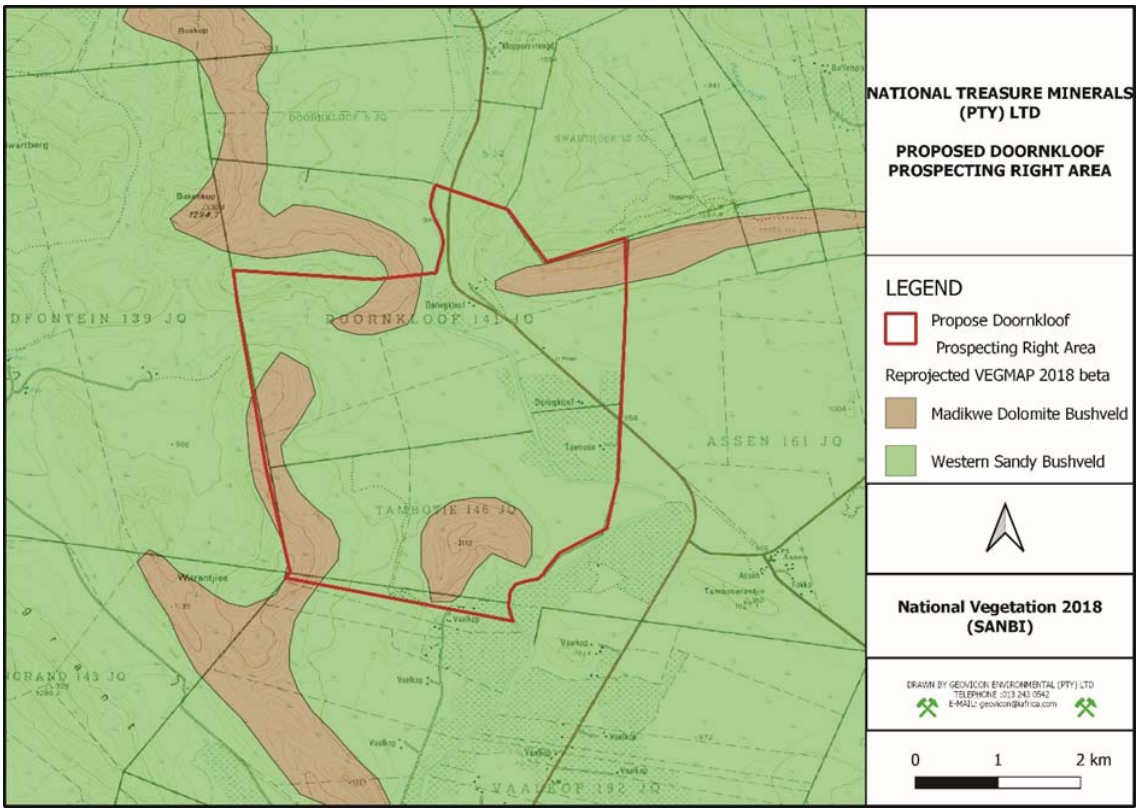

Figure 6: National vegetation types associated with the proposed Doornkloof Prospecting area

Distribution North-West and Limpopo Provinces: Extends along the low ridge from the international border at Ramotswa in the west via the Rand Van Tweede Poort, Tlhapitse and Maakane to Modimong in the east. It is also found on dolomite hills between Assen and Northam.

Vegetation & Landscape Features Gentle ridges and low hills up to about 100–150 m above the surrounding plains. Tree and shrub layers often not clearly distinct, especially on steeper slopes; they are dominated by deciduous trees, particularly *Combretum apiculatum* and *Kirkia wilmsii* (especially in the east). Herbaceous layer continuous, dominated by grasses.

Important Taxa

Tall Tree: *Sclerocarya birrea* subsp*. caffra*.

Small Trees: *Combretum apiculatum* (d), *Kirkia wilmsii* (d), *Ozoroa paniculosa* (d), *Searsia lancea* (d), *Combretum imberbe*, *Searsia leptodictya*, *Ximenia americana*, *Ziziphus mucronata*.

Tall Shrubs: *Grewia flava* (d), *Tarchonanthus camphoratus* (d), *Vitex zeyheri* (d), *Clerodendrum glabrum*, *Grewia bicolor*, *G. monticola*.

Graminoids: *Enneapogon scoparius* (d), *Heteropogon contortus* (d), *Aristida congesta*, *Panicum coloratum*, *P. maximum*.

Conservation Least threatened. Target 19%. Some 17% statutorily conserved in the Madikwe Nature Reserve. Only 1% transformed mostly by cultivation. Erosion is low to very low.

Remarks Some species distributions are associated with the east-west climatic gradient, for example *Kirkia wilmsii* is restricted to the eastern parts of the unit. In contrast to bush encroachment seen on the red clay loams surrounding this unit, the rocky soils of dolomitic origin support a more open canopy structure (Hudak & Wessman 2001). References Zacharias (1994), Hudak & Wessman (2001).

Western Sandy Bushveld (SVcb 16)

Distribution Limpopo and North-West Provinces: Occurs on flats and undulating plains from Assen northwards past Thabazimbi and remaining west of the Waterberg Mountains towards Steenbokpan in the north. Some patches occur between the Crocodile and Marico Rivers to the west. Mostly at altitudes of 900–1 200 metres above mean sea level.

Vegetation & Landscape Features Varies from tall open woodland to low woodland, broad-leaved as well as microphyllous tree species prominent. Dominant species include *Senegalia erubescens* on flat areas, *Combretum apiculatum* on shallow soils of gravelly upland sites and *Terminalia sericea* on deep sands. Occurs on slightly undulating plains

Important Taxa

Tall Trees: *Vachellia erioloba*, *Senegalia nigrescens*, *Sclerocarya birrea* subsp. *caffr*a.

Small Trees: *Senegalia erubescens* (d), *Senegalia. mellifera* subsp. *detinens* (d), *Vachellia. nilotica* (d), *Vachellia. tortilis* subsp. *heteracantha* (d), *Combretum apiculatum* (d), *C. imberbe* (d), *Terminalia sericea* (d), *Combretum zeyheri*, *Lannea discolor*, *Ochna pulchra*, *Peltophorum africanum*.

Tall Shrubs: *Combretum hereroense* (d), *Euclea undulata* (d), *Coptosperma supra-axillare*, *Dichrostachys cinerea*, *Grewia bicolor*, *G. flava*, *G. monticola*.

Low Shrubs: *Clerodendrum ternatum*, *Indigofera filipes*, *Justicia flava*.

Graminoids: *Anthephora pubescens* (d), *Digitaria eriantha* subsp. *eriantha* (d), *Eragrostis pallens* (d), *E. rigidior* (d), *Schmidtia pappophoroides* (d), *Aristida congesta*, *A. diffusa*, *A. stipitata* subsp. *graciliflora*, *Eragrostis superba*, *Panicum maximum*, *Perotis patens*.

Herbs: *Blepharis integrifolia*, *Chamaecrista absus*, *Evolvulus alsinoides*, *Geigeria burkei*, *Kyphocarpa angustifolia*, *Limeum fenestratum*, *L. viscosum*, *Lophiocarpus tenuissimus*, *Monsonia angustifolia*.

Conservation Least threatened. Target 19%. About 6% statutorily conserved, just over half of which in the Marakele National Park. About 4% transformed, mainly by cultivation. Erosion is generally low to very low.

Remark This unit is drier than the SVcb 12 Central Sandy Bushveld vegetation unit and is distinguished from it by the presence of such species as *Senegalia erubescens*, *S. nigrescens* and *Combretum imberbe* and general absence of species such as *Burkea africana* and *Ochna pulchra*. References Herbst (1973), Peel et al. (1991), Brown & Bredenkamp (1994), Brown et al. (1995, 1996, 1997), Winterbach (1998), Winterbach et al. (2000).

5.3.6 Animal Life

The proposed Doornkloof Prospecting Area is situated in the Western Sandy Bushveld and Madikwe Dolomite Bushveld ecosystem, therefore the animal species that are likely to occur within the ecosystem, primarily inhabits the bushveld habitat. In accordance with the above-mentioned land uses certain species can occur within and in the surrounding areas of the proposed Doornkloof Prospecting Area. All animal species lists mentioned in the tables below have been obtained from the web-accessible Virtual Museum Animal Demography Unit. The proposed Doornkloof prospecting area is situated over the 2527BA quarter degree square grid. The tables below represent the possible occurrence of animal species found within the perimeters of the 2527BA quarter degree square grid and is not restricted to the proposed Doornkloof Prospecting Area.

Table 5: List of Mammal species that occur in the 2527BA quarter degree grid (Mammal Map, Animal Demography Unit)

#	Species code	Family	Scientific name	Common name	Red list category
1	151470	Bathyergidae	*Cryptomys hottentotus*	Southern African Mole-rat	Least Concern (2016)
2	211850	Bovidae	*Aepyceros melampus*	Impala	Least Concern
3	211920	Bovidae	*Alcelaphus buselaphus*	Hartebeest	
4	212190	Bovidae	*Antidorcas marsupialis*	Springbok	Least Concern (2016)
5	212040	Bovidae	*Connochaetes taurinus taurinus*		Least Concern (2016)
6	217690	Bovidae	*Damaliscus lunatus lunatus*	(Southern African) Tsessebe	Vulnerable (2016)
7	212160	Bovidae	*Damaliscus pygargus phillipsi*	Blesbok	Least Concern (2016)
8	215850	Bovidae	*Hippotragus equinus*	Roan Antelope	Endangered (2016)
9	215940	Bovidae	*Hippotragus niger niger*		Vulnerable (2016)
10	216050	Bovidae	*Kobus ellipsiprymnus ellipsiprymnus*		Least Concern (2016)
11	213120	Bovidae	*Oreotragus oreotragus*	Klipspringer	Least Concern (2016)
12	216020	Bovidae	*Oryx gazella*	Gemsbok	Least Concern (2016)
13	216360	Bovidae	*Pelea capreolus*	Vaal Rhebok	Near Threatened (2016)
14	213320	Bovidae	*Raphicerus campestris*	Steenbok	Least Concern (2016)
15	216370	Bovidae	*Redunca arundinum*	Southern Reedbuck	Least Concern (2016)
16	216380	Bovidae	*Redunca fulvorufula*	Mountain Reedbuck	Least Concern
17	215700	Bovidae	*Sylvicapra grimmia*	Bush Duiker	Least Concern (2016)
18	213760	Bovidae	*Syncerus caffer*	African Buffalo	Least Concern (2008)
19	213850	Bovidae	*Taurotragus oryx*	Common Eland	Least Concern (2016)
20	213930	Bovidae	*Tragelaphus angasii*	Nyala	Least Concern (2016)
21	213970	Bovidae	*Tragelaphus scriptus*	Bushbuck	Least Concern

22	214120	Bovidae	*Tragelaphus strepsiceros*	Greater Kudu	Least Concern (2016)
23	198600	Canidae	*Canis mesomelas*	Black-backed Jackal	Least Concern (2016)
24	113300	Cercopithecidae	*Chlorocebus pygerythrus*	Vervet Monkey	Least Concern (2016)
25	114040	Cercopithecidae	*Papio ursinus*	Chacma Baboon	Least Concern (2016)
26	207010	Equidae	*Equus quagga*	Plains Zebra	Near Threatened (IUCN, 2016)
27	193680	Felidae	*Panthera leo*	Lion	Least Concern (2016)
28	193900	Felidae	*Panthera pardus*	Leopard	Vulnerable (2016)
29	110080	Galagidae	*Galago moholi*	Mohol Bushbaby	Least Concern (2016)
30	211830	Giraffidae	*Giraffa giraffa giraffa*	South African Giraffe	Least Concern (2016)
31	127730	Gliridae	*Graphiurus (Graphiurus) murinus*	Forest African Dormouse	Least Concern
32	196340	Herpestidae	*Herpestes sanguineus*	Slender Mongoose	Least Concern (2016)
33	208440	Hippopotamidae	*Hippopotamus amphibius*	Common Hippopotamus	Least Concern (2016)
34	173590	Hipposideridae	*Cloeotis percivali*	Percival's Short-eared Trident Bat	Endangered (2016)
35	173970	Hipposideridae	*Hipposideros caffer*	Sundevall's Leaf-nosed Bat	Least Concern (2016)
36	197750	Hyaenidae	*Hyaena brunnea*	Brown Hyena	Near Threatened (2015)
37	151730	Hystricidae	*Hystrix africaeaustralis*	Cape Porcupine	Least Concern
38	157259	Leporidae	*Lepus sp.*	Hares	
39	158240	Leporidae	*Lepus saxatilis*	Scrub Hare	Least Concern
40	106360	Macroscelididae	*Elephantulus brachyrhynchus*	Short-snouted Elephant Shrew	Least Concern (2016)
41	191540	Manidae	*Smutsia temminckii*	Ground Pangolin	Vulnerable (2016)
42	144040	Muridae	*Acomys (Acomys) spinosissimus*	Southern African Spiny Mouse	Least Concern
43	145390	Muridae	*Aethomys ineptus*	Tete Veld Aethomys	Least Concern (2016)
44	217970	Muridae	*Aethomys namaquensis*	Namaqua Rock Mouse	Least Concern
45	218030	Muridae	*Gerbilliscus leucogaster*	Bushveld Gerbil	Least Concern (2016)
46	147110	Muridae	*Lemniscomys rosalia*	Single-Striped Lemniscomys	Least Concern (2016)
47	147479	Muridae	*Mastomys sp.*	Multimammate Mice	
48	147530	Muridae	*Mastomys natalensis*	Natal Mastomys	Least Concern (2016)
49	148270	Muridae	*Mus (Nannomys) minutoides*	Southern African Pygmy Mouse	Least Concern
50	136520	Nesomyidae	*Saccostomus campestris*	Southern African Pouched Mouse	Least Concern (2016)
51	136780	Nesomyidae	*Steatomys pratensis*	Common African Fat Mouse	Least Concern (2016)
52	106780	Orycteropodidae	*Orycteropus afer*	Aardvark	Least Concern (2016)
53	151320	Pedetidae	*Pedetes capensis*	South African Spring Hare	Least Concern (2016)
54	173210	Rhinolophidae	*Rhinolophus simulator*	Bushveld Horseshoe Bat	Least Concern (2016)
55	123710	Sciuridae	*Paraxerus cepapi*	Smith's Bush Squirrel	Least Concern (2016)
56	160980	Soricidae	*Crocidura fuscomurina*	Bicolored Musk Shrew	Least Concern (2016)

57	161130	Soricidae	*Crocidura hirta*	Lesser Red Musk Shrew	Least Concern (2016)
58	162900	Soricidae	*Suncus lixus*	Greater Dwarf Shrew	Least Concern (2016)
59	207690	Suidae	*Phacochoerus africanus*	Common Warthog	Least Concern (2016)
60	190410	Vespertilionidae	*Miniopterus natalensis*	Natal Long-fingered Bat	Least Concern (2016)
61	190500	Vespertilionidae	*Miniopterus schreibersii*	Schreibers's Long-fingered Bat	Near Threatened
62	184430	Vespertilionidae	*Scotophilus dinganii*	Yellow-bellied House Bat	Least Concern (2016)
63	195010	Viverridae	*Civettictis civetta*	African Civet	Least Concern (2016)

Table 6: List of Reptiles that occur in the 2527BA degree grid (Reptile Map, Animal Demography Unit)

#	Species code	Family	Scientific name	Common name	Red list category
1	1410	Chamaeleonidae	*Chamaeleo dilepis*	Common Flap-neck Chameleon	Least Concern (SARCA 2014)
2	4640	Colubridae	*Philothamnus semivariegatus*	Spotted Bush Snake	Least Concern (SARCA 2014)
3	3120	Cordylidae	*Cordylus vittifer*	Common Girdled Lizard	Least Concern (SARCA 2014)
4	5360	Elapidae	*Dendroaspis polylepis*	Black Mamba	Least Concern (SARCA 2014)
5	5300	Elapidae	*Naja mossambica*	Mozambique Spitting Cobra	Least Concern (SARCA 2014)
6	320	Gekkonidae	*Lygodactylus capensis*	Common Dwarf Gecko	Least Concern (SARCA 2014)
7	450	Gekkonidae	*Pachydactylus affinis*	Transvaal Gecko	Least Concern (SARCA 2014)
8	3490	Gerrhosauridae	*Gerrhosaurus flavigularis*	Yellow-throated Plated Lizard	Least Concern (SARCA 2014)
9	1600	Lacertidae	*Ichnotropis capensis*	Ornate Rough-scaled Lizard	Least Concern (SARCA 2014)
10	1620	Lacertidae	*Meroles squamulosus*	Common Rough-scaled Lizard	Least Concern (SARCA 2014)
11	1740	Lacertidae	*Nucras intertexta*	Spotted Sandveld Lizard	Least Concern (SARCA 2014)
12	4130	Lamprophiidae	*Aparallactus capensis*	Black-headed Centipede-eater	Least Concern (SARCA 2014)
13	4260	Lamprophiidae	*Atractaspis bibronii*	Bibron's Stiletto Snake	Least Concern (SARCA 2014)
14	4320	Lamprophiidae	*Boaedon capensis*	Brown House Snake	Least Concern (SARCA 2014)
15	4910	Lamprophiidae	*Psammophis brevirostris*	Short-snouted Grass Snake	Least Concern (SARCA 2014)
16	4930	Lamprophiidae	*Psammophis subtaeniatus*	Western Yellow-bellied Sand Snake	Least Concern (SARCA 2014)
17	5820	Pelomedusidae	*Pelusios sinuatus*	Serrated Hinged Terrapin	Least Concern (SARCA 2014)
18	2450	Scincidae	*Trachylepis punctatissima*	Speckled Rock Skink	Least Concern (SARCA 2014)
19	2480	Scincidae	*Trachylepis varia sensu lato*	Common Variable Skink Complex	Least Concern (SARCA 2014)
20	5640	Testudinidae	*Kinixys lobatsiana*	Lobatse Hinged Tortoise	Least Concern (SARCA 2014)
21	5660	Testudinidae	*Psammobates oculifer*	Serrated Tent Tortoise	Least Concern (SARCA 2014)
22	3850	Typhlopidae	*Rhinotyphlops lalandei*	Delalande's Beaked Blind Snake	Least Concern (SARCA 2014)
23	1220	Varanidae	*Varanus albigularis*	Rock Monitor	Least Concern

			albigularis		(SARCA 2014)
24	1230	Varanidae	*Varanus niloticus*	Water Monitor	Least Concern (SARCA 2014)
25	5410	Viperidae	*Bitis arietans arietans*	Puff Adder	Least Concern (SARCA 2014)

Table 7: List of Frog species that occur in the 2527BA quarter degree grid (Frog Map, Animal Demography Unit)

#	Species code	Family	Scientific name	Common name	Red list category
1	160	Brevicepitidae	*Breviceps adspersus*	Bushveld Rain Frog	Least Concern
2	910	Bufonidae	*Schismaderma carens*	Red Toad	Least Concern
3	320	Bufonidae	*Sclerophrys garmani*	Olive Toad	Least Concern (IUCN, 2016)
4	330	Bufonidae	*Sclerophrys gutturalis*	Guttural Toad	Least Concern (IUCN, 2016)
5	660	Hyperoliidae	*Kassina senegalensis*	Bubbling Kassina	Least Concern
6	760	Microhylidae	*Phrynomantis bifasciatus*	Banded Rubber Frog	Least Concern
7	740	Phrynobatrachidae	*Phrynobatrachus natalensis*	Snoring Puddle Frog	Least Concern (IUCN, 2013)
8	780	Ptychadenidae	*Ptychadena anchietae*	Plain Grass Frog	Least Concern
9	800	Ptychadenidae	*Ptychadena mossambica*	Broadbanded Grass Frog	Least Concern
10	880	Pyxicephalidae	*Amietia delalandii*	Delalande's River Frog	Least Concern (2017)
11	400	Pyxicephalidae	*Cacosternum boettgeri*	Common Caco	Least Concern (2013)
12	860	Pyxicephalidae	*Pyxicephalus edulis*	African Bull Frog	Least Concern
13	1030	Pyxicephalidae	*Tomopterna natalensis*	Natal Sand Frog	Least Concern

Table 8: List of Butterfly and Moth species in the 2527BA quarter degree grid (LepiMap, Animal Demography Unit)

#	Species code	Family	Scientific name	Common name	Red list category
1	470700	HESPERIIDAE	*Sarangesa motozi*	Forest elfin	Least Concern (SABCA 2013)
2	471110	HESPERIIDAE	*Spialia delagoae*	Delagoa sandman	Least Concern (SABCA 2013)
3	460430	LYCAENIDAE	*Anthene amarah amarah*	Black-striped ciliate blue	Least Concern (SABCA 2013)
4	458810	LYCAENIDAE	*Axiocerses tjoane tjoane*	Eastern scarlet	Least Concern (SABCA 2013)
5	464800	LYCAENIDAE	*Azanus jesous*	Topaz babul blue	Least Concern (SABCA 2013)
6	464820	LYCAENIDAE	*Azanus moriqua*	Black-bordered babul blue	Least Concern (SABCA 2013)
7	464880	LYCAENIDAE	*Azanus ubaldus*	Velvet-spotted babul blue	Least Concern (SABCA 2013)
8	447260	LYCAENIDAE	*Cnodontes penningtoni*	Pennington's buff	Least Concern (SABCA 2013)
9	456870	LYCAENIDAE	*Crudaria leroma*	Silver-spotted grey	Least Concern (SABCA 2013)
10	465430	LYCAENIDAE	*Euchrysops subpallida*	Ashen smoky blue	Least Concern (SABCA 2013)
11	464050	LYCAENIDAE	*Leptotes pirithous pirithous*	Common zebra blue	Least Concern (SABCA 2013)
12	463170	LYCAENIDAE	*Pseudonacaduba sichela sichela*	Dusky line blue	Least Concern (SABCA 2013)
13	464560	LYCAENIDAE	*Zintha hintza hintza*	Hintza pierrot	Least Concern (SABCA 2013)
14	572700	NOCTUIDAE	*Diaphone eumela*		
15	411520	NYMPHALIDAE	*Acraea aglaonice*	Clear-spotted acraea	Least Concern

					(SABCA 2013)
16	410390	NYMPHALIDAE	*Acraea anemosa*	Broad-bordered acraea	Least Concern (SABCA 2013)
17	411660	NYMPHALIDAE	*Acraea caldarena caldarena*	Black-tipped acraea	Least Concern (SABCA 2013)
18	411830	NYMPHALIDAE	*Acraea oncaea*	Window acraea	Least Concern (SABCA 2013)
19	417970	NYMPHALIDAE	*Brakefieldia perspicua perspicua*	Marsh patroller	Least Concern (SABCA 2013)
20	438340	NYMPHALIDAE	*Junonia oenone oenone*	Dark blue pansy	Least Concern (SABCA 2013)
21	413770	NYMPHALIDAE	*Telchinia serena*	Dancing telchinia	Least Concern (SABCA 2013)
22	438050	NYMPHALIDAE	*Vanessa cardui*	Painted lady	Least Concern (SABCA 2013)
23	407450	PIERIDAE	*Belenois aurota*	Pioneer caper white	Least Concern (SABCA 2013)
24	403120	PIERIDAE	*Catopsilia florella*	African migrant	Least Concern (SABCA 2013)
25	403790	PIERIDAE	*Colotis antevippe gavisa*	Red tip	Least Concern (SABCA 2013)
26	402930	PIERIDAE	*Eurema brigitta brigitta*	Broad-bordered grass yellow	Least Concern (SABCA 2013)
27	403570	PIERIDAE	*Pinacopteryx eriphia eriphia*	Zebra white	Least Concern (SABCA 2013)
28	403690	PIERIDAE	*Teracolus eris eris*	Banded gold tip	Least Concern (SABCA 2013)

Table 9: List of Dungbeetle species that occur in the 2527BA quarter degree grid (Dungbeetle Map, Animal Demography Unit)

#	Species code	Family	Scientific name	Common name	Red list category
1	7701230	Scarabaeidae	*Copris amyntor*		
2	7701470	Scarabaeidae	*Copris evanidus*		
3	7704870	Scarabaeidae	*Oniticellus egregius*		
4	7709960	Scarabaeidae	*Scarabaeus galenus*		
5	7710710	Scarabaeidae	*Sisyphus gazanus*		

Table 10: List of Dragonfly and Damselfly species that occur in the 2630AA quarter degree grid (Odonata Map, Animal Demography Unit)

#	Species code	Family	Scientific name	Common name	Red list category
1	663670	Coenagrionidae	*Pseudagrion acaciae*	Acacia Sprite	LC
2	663820	Coenagrionidae	*Pseudagrion massaicum*	Masai Sprite	LC
3	663560	Coenagrionidae	*Pseudagrion salisburyense*	Slate Sprite	LC
4	664640	Gomphidae	*Crenigomphus hartmanni*	Clubbed Talontail	LC
5	667130	Libellulidae	*Crocothemis erythraea*	Broad Scarlet	LC
6	668670	Libellulidae	*Trithemis arteriosa*	Red-veined Dropwing	LC

Table 11: List of Bird species that occur in ADU pentad : 2505_2730

Ref	Common_group	Common_species	Genus	Species	Status
6	Grebe	Little	*Tachybaptus*	*ruficollis*	
47	Cormorant	White-breasted	*Phalacrocorax*	*lucidus*	
50	Cormorant	Reed	*Microcarbo*	*africanus*	
52	Darter	African	*Anhinga*	*rufa*	
54	Heron	Grey	*Ardea*	*cinerea*	

55	Heron	Black-headed	*Ardea*	*melanocephala*	
58	Egret	Great	*Ardea*	*alba*	
59	Egret	Little	*Egretta*	*garzetta*	
61	Egret	Western Cattle	*Bubulcus*	*ibis*	
62	Heron	Squacco	*Ardeola*	*ralloides*	
63	Heron	Striated	*Butorides*	*striata*	
64	Heron	Black	*Egretta*	*ardesiaca*	
72		Hamerkop	*Scopus*	*umbretta*	
76	Stork	Yellow-billed	*Mycteria*	*ibis*	Endangered
78	Stork	Abdim's	*Ciconia*	*abdimii*	Near Threatened
79	Stork	Black	*Ciconia*	*nigra*	Vulnerable
80	Stork	White	*Ciconia*	*ciconia*	
81	Ibis	African Sacred	*Threskiornis*	*aethiopicus*	
83	Ibis	Glossy	*Plegadis*	*falcinellus*	
84	Ibis	Hadada	*Bostrychia*	*hagedash*	
85	Spoonbill	African	*Platalea*	*alba*	
88	Goose	Spur-winged	*Plectropterus*	*gambensis*	
89	Goose	Egyptian	*Alopochen*	*aegyptiaca*	
91	Duck	Knob-billed	*Sarkidiornis*	*melanotos*	
95	Duck	African Black	*Anas*	*sparsa*	
97	Teal	Red-billed	*Anas*	*erythrorhyncha*	
100	Duck	White-faced Whistling	*Dendrocygna*	*viduata*	
119	Falcon	Amur	*Falco*	*amurensis*	
129	Kite	Yellow-billed	*Milvus*	*aegyptius*	
130	Kite	Black-winged	*Elanus*	*caeruleus*	
137	Eagle	Wahlberg's	*Hieraaetus*	*wahlbergi*	
138	Eagle	Long-crested	*Lophaetus*	*occipitalis*	
139	Eagle	Booted	*Hieraaetus*	*pennatus*	
144	Buzzard	Lizard	*Kaupifalco*	*monogrammicus*	
145	Eagle	Brown Snake	*Circaetus*	*cinereus*	
146	Eagle	Black-chested Snake	*Circaetus*	*pectoralis*	
149	Eagle	African Fish	*Haliaeetus*	*vocifer*	
154	Buzzard	Common	*Buteo*	*buteo*	
158	Sparrowhawk	Little	*Accipiter*	*minullus*	
160	Goshawk	African	*Accipiter*	*tachiro*	
162	Goshawk	Gabar	*Micronisus*	*gabar*	
174	Francolin	Crested	*Dendroperdix*	*sephaena*	
183	Spurfowl	Natal	*Pternistis*	*natalensis*	
185	Spurfowl	Swainson's	*Pternistis*	*swainsonii*	
192	Guineafowl	Helmeted	*Numida*	*meleagris*	
203	Crake	Black	*Zapornia*	*flavirostra*	
210	Moorhen	Common	*Gallinula*	*chloropus*	
213	Finfoot	African	*Podica*	*senegalensis*	Vulnerable

228	Jacana	African	*Actophilornis*	*africanus*	
238	Plover	Three-banded	*Charadrius*	*tricollaris*	
242	Lapwing	Crowned	*Vanellus*	*coronatus*	
245	Lapwing	Blacksmith	*Vanellus*	*armatus*	
247	Lapwing	African Wattled	*Vanellus*	*senegallus*	
258	Sandpiper	Common	*Actitis*	*hypoleucos*	
263	Greenshank	Common	*Tringa*	*nebularia*	
264	Sandpiper	Wood	*Tringa*	*glareola*	
270	Stilt	Black-winged	*Himantopus*	*himantopus*	
274	Thick-knee	Water	*Burhinus*	*vermiculatus*	
275	Thick-knee	Spotted	*Burhinus*	*capensis*	
309	Sandgrouse	Yellow-throated	*Pterocles*	*gutturalis*	Near Threatened
311	Pigeon	Speckled	*Columba*	*guinea*	
314	Dove	Red-eyed	*Streptopelia*	*semitorquata*	
316	Dove	Cape Turtle	*Streptopelia*	*capicola*	
317	Dove	Laughing	*Spilopelia*	*senegalensis*	
318	Dove	Namaqua	*Oena*	*capensis*	
321	Dove	Emerald-spotted Wood	*Turtur*	*chalcospilos*	
327	Parrot	Meyer's	*Poicephalus*	*meyeri*	
339	Go-away-bird	Grey	*Crinifer*	*concolor*	
343	Cuckoo	Red-chested	*Cuculus*	*solitarius*	
344	Cuckoo	Black	*Cuculus*	*clamosus*	
346	Cuckoo	Great Spotted	*Clamator*	*glandarius*	
347	Cuckoo	Levaillant's	*Clamator*	*levaillantii*	
348	Cuckoo	Jacobin	*Clamator*	*jacobinus*	
352	Cuckoo	Diederik	*Chrysococcyx*	*caprius*	
359	Owl	Western Barn	*Tyto*	*alba*	
363	Owl	African Scops	*Otus*	*senegalensis*	
365	Owlet	Pearl-spotted	*Glaucidium*	*perlatum*	
368	Eagle-Owl	Spotted	*Bubo*	*africanus*	
370	Owl	Pel's Fishing	*Scotopelia*	*peli*	Endangered
373	Nightjar	Fiery-necked	*Caprimulgus*	*pectoralis*	
380	Swift	African Black	*Apus*	*barbatus*	
383	Swift	White-rumped	*Apus*	*caffer*	
385	Swift	Little	*Apus*	*affinis*	
387	Swift	African Palm	*Cypsiurus*	*parvus*	
390	Mousebird	Speckled	*Colius*	*striatus*	
391	Mousebird	White-backed	*Colius*	*colius*	
392	Mousebird	Red-faced	*Urocolius*	*indicus*	
394	Kingfisher	Pied	*Ceryle*	*rudis*	
395	Kingfisher	Giant	*Megaceryle*	*maxima*	
396	Kingfisher	Half-collared	*Alcedo*	*semitorquata*	Near Threatened
397	Kingfisher	Malachite	*Corythornis*	*cristatus*	

398	Kingfisher	African Pygmy	*Ispidina*	*picta*	
399	Kingfisher	Woodland	*Halcyon*	*senegalensis*	
402	Kingfisher	Brown-hooded	*Halcyon*	*albiventris*	
403	Kingfisher	Striped	*Halcyon*	*chelicuti*	
404	Bee-eater	European	*Merops*	*apiaster*	
409	Bee-eater	White-fronted	*Merops*	*bullockoides*	
412	Roller	European	*Coracias*	*garrulus*	Near Threatened
413	Roller	Lilac-breasted	*Coracias*	*caudatus*	
415	Roller	Purple	*Coracias*	*naevius*	
418	Hoopoe	African	*Upupa*	*africana*	
419	Wood Hoopoe	Green	*Phoeniculus*	*purpureus*	
421	Scimitarbill	Common	*Rhinopomastus*	*cyanomelas*	
424	Hornbill	African Grey	*Lophoceros*	*nasutus*	
426	Hornbill	Southern Yellow-billed	*Tockus*	*leucomelas*	
431	Barbet	Black-collared	*Lybius*	*torquatus*	
432	Barbet	Acacia Pied	*Tricholaema*	*leucomelas*	
437	Tinkerbird	Yellow-fronted	*Pogoniulus*	*chrysoconus*	
439	Barbet	Crested	*Trachyphonus*	*vaillantii*	
440	Honeyguide	Greater	*Indicator*	*indicator*	
442	Honeyguide	Lesser	*Indicator*	*minor*	
447	Woodpecker	Golden-tailed	*Campethera*	*abingoni*	
450	Woodpecker	Cardinal	*Dendropicos*	*fuscescens*	
451	Woodpecker	Bearded	*Chloropicus*	*namaquus*	
458	Lark	Rufous-naped	*Mirafra*	*africana*	
460	Lark	Sabota	*Calendulauda*	*sabota*	
493	Swallow	Barn	*Hirundo*	*rustica*	
495	Swallow	White-throated	*Hirundo*	*albigularis*	
498	Swallow	Pearl-breasted	*Hirundo*	*dimidiata*	
501	Swallow	Red-breasted	*Cecropis*	*semirufa*	
502	Swallow	Greater Striped	*Cecropis*	*cucullata*	
503	Swallow	Lesser Striped	*Cecropis*	*abyssinica*	
507	Martin	Common House	*Delichon*	*urbicum*	
509	Martin	Brown-throated	*Riparia*	*paludicola*	
513	Cuckooshrike	Black	*Campephaga*	*flava*	
517	Drongo	Fork-tailed	*Dicrurus*	*adsimilis*	
519	Oriole	Eurasian Golden	*Oriolus*	*oriolus*	
521	Oriole	Black-headed	*Oriolus*	*larvatus*	
522	Crow	Pied	*Corvus*	*albus*	
527	Tit	Southern Black	*Melaniparus*	*niger*	
530	Tit	Grey Penduline	*Anthoscopus*	*caroli*	
533	Babbler	Arrow-marked	*Turdoides*	*jardineii*	
536	Babbler	Southern Pied	*Turdoides*	*bicolor*	
544	Bulbul	African Red-eyed	*Pycnonotus*	*nigricans*	

545	Bulbul	Dark-capped	*Pycnonotus*	*tricolor*	
550	Greenbul	Yellow-bellied	*Chlorocichla*	*flaviventris*	
552	Thrush	Kurrichane	*Turdus*	*libonyana*	
557	Thrush	Groundscraper	*Turdus*	*litsitsirupa*	
576	Stonechat	African	*Saxicola*	*torquatus*	
581	Robin-Chat	Cape	*Cossypha*	*caffra*	
582	Robin-Chat	White-throated	*Cossypha*	*humeralis*	
586	Scrub Robin	Kalahari	*Cercotrichas*	*paena*	
588	Scrub Robin	White-browed	*Cercotrichas*	*leucophrys*	
599	Warbler	Willow	*Phylloscopus*	*trochilus*	
601	Eremomela	Burnt-necked	*Eremomela*	*usticollis*	
604	Warbler	Lesser Swamp	*Acrocephalus*	*gracilirostris*	
606	Warbler	African Reed	*Acrocephalus*	*baeticatus*	
609	Warbler	Little Rush	*Bradypterus*	*baboecala*	
621	Crombec	Long-billed	*Sylvietta*	*rufescens*	
622	Apalis	Bar-throated	*Apalis*	*thoracica*	
628	Camaroptera	Grey-backed	*Camaroptera*	*brevicaudata*	
629	Cisticola	Zitting	*Cisticola*	*juncidis*	
637		Neddicky	*Cisticola*	*fulvicapilla*	
642	Cisticola	Rattling	*Cisticola*	*chiniana*	
646	Cisticola	Levaillant's	*Cisticola*	*tinniens*	
649	Prinia	Tawny-flanked	*Prinia*	*subflava*	
650	Prinia	Black-chested	*Prinia*	*flavicans*	
654	Flycatcher	Spotted	*Muscicapa*	*striata*	
656	Flycatcher	Ashy	*Muscicapa*	*caerulescens*	
657	Tit-Flycatcher	Grey	*Myioparus*	*plumbeus*	
658	Warbler	Chestnut-vented	*Curruca*	*subcoerulea*	
664	Flycatcher	Southern Black	*Melaenornis*	*pammelaina*	
665	Flycatcher	Fiscal	*Melaenornis*	*silens*	
673	Batis	Chinspot	*Batis*	*molitor*	
682	Flycatcher	African Paradise	*Terpsiphone*	*viridis*	
685	Wagtail	African Pied	*Motacilla*	*aguimp*	
686	Wagtail	Cape	*Motacilla*	*capensis*	
692	Pipit	African	*Anthus*	*cinnamomeus*	
695	Pipit	Buffy	*Anthus*	*vaalensis*	
696	Pipit	Striped	*Anthus*	*lineiventris*	
699	Pipit	Bushveld	*Anthus*	*caffer*	
707	Fiscal	Southern	*Lanius*	*collaris*	
708	Shrike	Red-backed	*Lanius*	*collurio*	
709	Boubou	Southern	*Laniarius*	*ferrugineus*	
711	Shrike	Crimson-breasted	*Laniarius*	*atrococcineus*	
712	Puffback	Black-backed	*Dryoscopus*	*cubla*	
714	Tchagra	Brown-crowned	*Tchagra*	*australis*	

715	Tchagra	Black-crowned	*Tchagra*	*senegalus*	
719	Bushshrike	Orange-breasted	*Chlorophoneus*	*sulfureopectus*	
722		Bokmakierie	*Telophorus*	*zeylonus*	
723	Bushshrike	Grey-headed	*Malaconotus*	*blanchoti*	
724	Shrike	Magpie	*Urolestes*	*melanoleucus*	
727	Helmetshrike	White-crested	*Prionops*	*plumatus*	
730	Shrike	Southern White-crowned	*Eurocephalus*	*anguitimens*	
731		Brubru	*Nilaus*	*afer*	
734	Myna	Common	*Acridotheres*	*tristis*	
735	Starling	Wattled	*Creatophora*	*cinerea*	
736	Starling	Violet-backed	*Cinnyricinclus*	*leucogaster*	
737	Starling	Cape	*Lamprotornis*	*nitens*	
743	Starling	Burchell's	*Lamprotornis*	*australis*	
745	Starling	Red-winged	*Onychognathus*	*morio*	
748	Oxpecker	Red-billed	*Buphagus*	*erythrorynchus*	
755	Sunbird	Marico	*Cinnyris*	*mariquensis*	
763	Sunbird	White-bellied	*Cinnyris*	*talatala*	
772	Sunbird	Amethyst	*Chalcomitra*	*amethystina*	
779	Weaver	Red-billed Buffalo	*Bubalornis*	*niger*	
784	Sparrow	House	*Passer*	*domesticus*	
786	Sparrow	Cape	*Passer*	*melanurus*	
788	Sparrow	Yellow-throated Bush	*Gymnoris*	*superciliaris*	
792	Weaver	Lesser Masked	*Ploceus*	*intermedius*	
793	Weaver	Red-headed	*Anaplectes*	*rubriceps*	
797	Weaver	Village	*Ploceus*	*cucullatus*	
803	Weaver	Southern Masked	*Ploceus*	*velatus*	
804	Weaver	Thick-billed	*Amblyospiza*	*albifrons*	
805	Quelea	Red-billed	*Quelea*	*quelea*	
808	Bishop	Southern Red	*Euplectes*	*orix*	
814	Widowbird	White-winged	*Euplectes*	*albonotatus*	
821	Finch	Cut-throat	*Amadina*	*fasciata*	
823	Mannikin	Bronze	*Spermestes*	*cucullata*	
830	Pytilia	Green-winged	*Pytilia*	*melba*	
833	Firefinch	African	*Lagonosticta*	*rubricata*	
835	Firefinch	Jameson's	*Lagonosticta*	*rhodopareia*	
837	Firefinch	Red-billed	*Lagonosticta*	*senegala*	
838	Waxbill	Orange-breasted	*Amandava*	*subflava*	
839	Waxbill	Blue	*Uraeginthus*	*angolensis*	
840	Waxbill	Violet-eared	*Granatina*	*granatina*	
841	Waxbill	Black-faced	*Brunhilda*	*erythronotos*	
843	Waxbill	Common	*Estrilda*	*astrild*	
844		Quailfinch	*Ortygospiza*	*atricollis*	
846	Whydah	Pin-tailed	*Vidua*	*macroura*	

851	Indigobird	Village	*Vidua*	*chalybeata*	
859	Canary	Yellow-fronted	*Crithagra*	*mozambica*	
860	Canary	Black-throated	*Crithagra*	*atrogularis*	
872	Bunting	Cinnamon-breasted	*Emberiza*	*tahapisi*	
874	Bunting	Golden-breasted	*Emberiza*	*flaviventris*	
1035	Korhaan	Northern Black	*Afrotis*	*afraoides*	
1104	Thrush	Karoo	*Turdus*	*smithi*	
1172	White-eye	Cape	*Zosterops*	*virens*	
4129	Hornbill	Southern Red-billed	*Tockus*	*rufirostris*	
4131	Coucal	Burchell's	*Centropus*	*burchellii*	
4142	Sparrow	Southern Grey-headed	*Passer*	*diffusus*	

5.3.7 Surface Water

For the purpose of the National Water Resource Strategy, a requirement of the National Water Act (Act 36 of 1998), Department of Water Affairs and Forestry has delineated the entire country into representative water management areas with respective drainage regions i.e., primary, secondary, tertiary and quaternary drainage regions. The proposed Doornkloof Prospecting Area is situated over a groundwater Strategic Water Source of South Africa namely the Crocodile River Valley, and falls within the quaternary catchment **A24A**.

The proposed Doornkloof Prospecting Area is situated in Quaternary Catchment **A24A**. Figure 7 below provides a visual indication of the quaternary drainage region associated with the proposed Prospecting Area. Table provides a summary of the above-mentioned quaternary catchment.

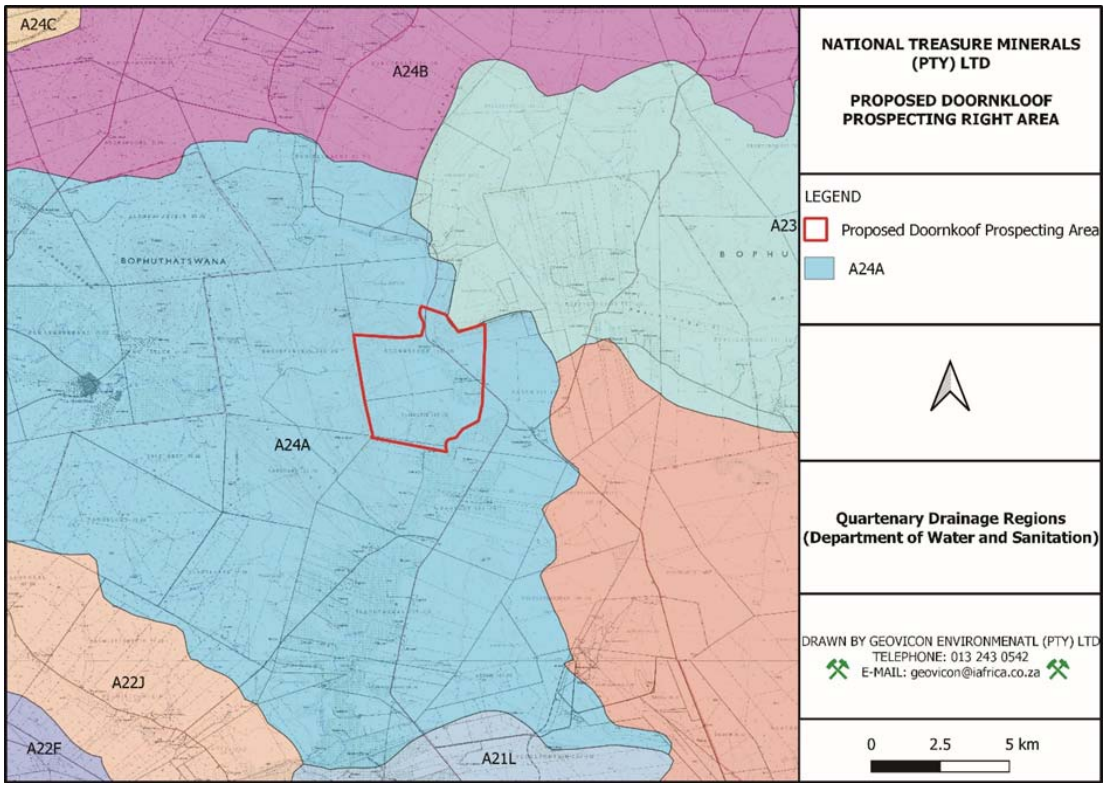

Figure 7: Quaternary Drainage Regions in the vicinity of the proposed Doornkloof Prospecting Area

Table 12: Summary of the above mentioned Quaternary Catchment

Quaternary Catchment	A24A
Drains Into	Limpopo River
Size in km^2	495
Mean Annual Precipitation (mm)	598.50
Evaporation (mm)	2373.20
Mean Annual Surface Runoff (mm)	77.50

5.3.8 Sensitive Landscapes

Sensitive landscapes include vulnerable, endangered and critically endangered ecosystems; all water courses and wetland areas. Sensitive areas also include all critical biodiversity areas, ecological support areas; South African conservation areas, South African protected areas; and strategic water resource areas. To this extent, Geovicon Environmental (Pty) Limited an independent environmental consultant, undertook a desktop study over the proposed Doornkloof Prospecting area to determine the presence of any sensitive areas. According to the study there are sites that resembles sensitive

landscapes which were identified in close proximity to the site. See **Appendix C** for the National Web Based Environmental Screening Tool Report.

Mucina & Rutherford (2006) describes the vegetation that represent the above-mentioned vegetation types as the Western Sandy Bushveld (SVcb 16) vegetation type/ ecosystem and the Madikwe Dolomite Bushveld (SVcb 2) vegetation type/ ecosystem. The proposed Doornkloof prospecting area falls within the Central Bushveld Bioregion in the Savanna Biome of South Africa.

According to the National List of Threatened Ecosystems (SANBI, 2009), the proposed Doornkloof prospecting area is not situated in any threatened ecosystem.

The proposed Doornkloof Prospecting Area is situated over a groundwater Strategic Water Source of South Africa, namely the Crocodile River Valley Strategic Water Source Area. Refer to figure 8 below.

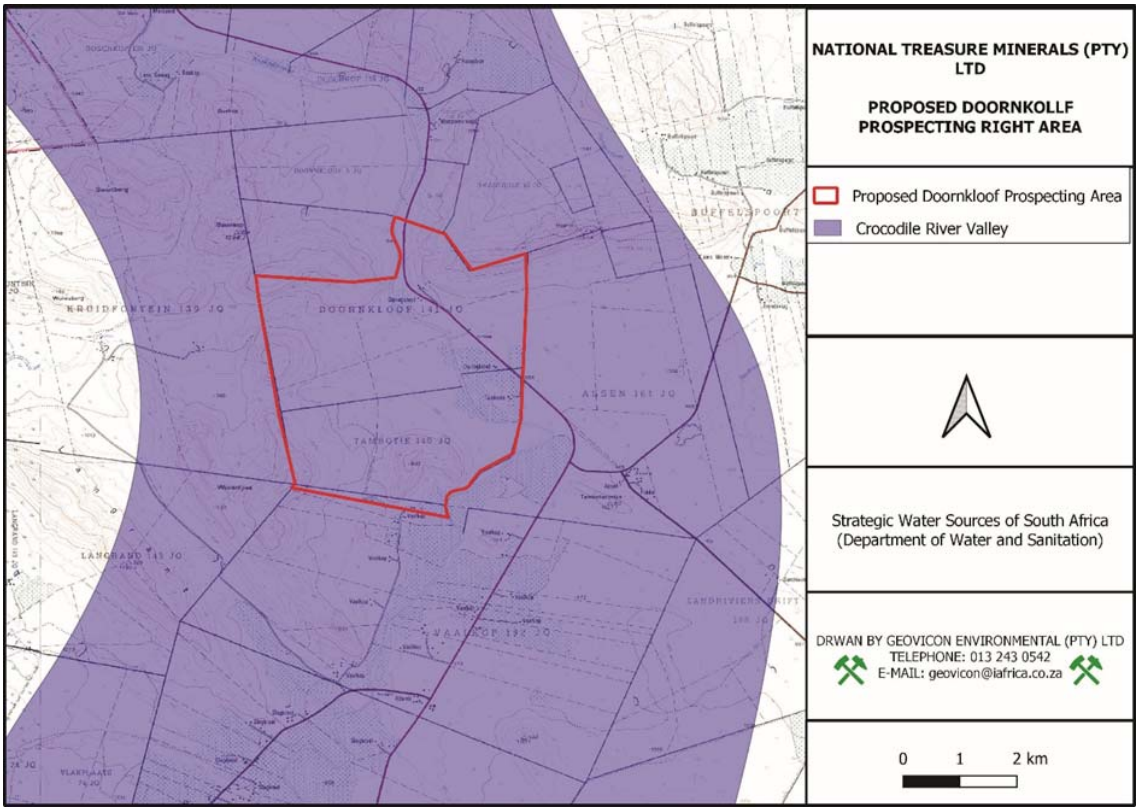

Figure 8: Strategic Water Sources of SA (DWS)

The proposed Doornkloof Prospecting area is not situated in the vicinity of any National Freshwater Ecosystem Priority Areas.

Figure 9 provides a visual indication of the Wetland Types that are present in the proposed Doornkloof Prospecting Area. There is a channelled valley bottom wetland, as well as a seepage wetland within the boundary of the proposed Doornkloof prospecting area.

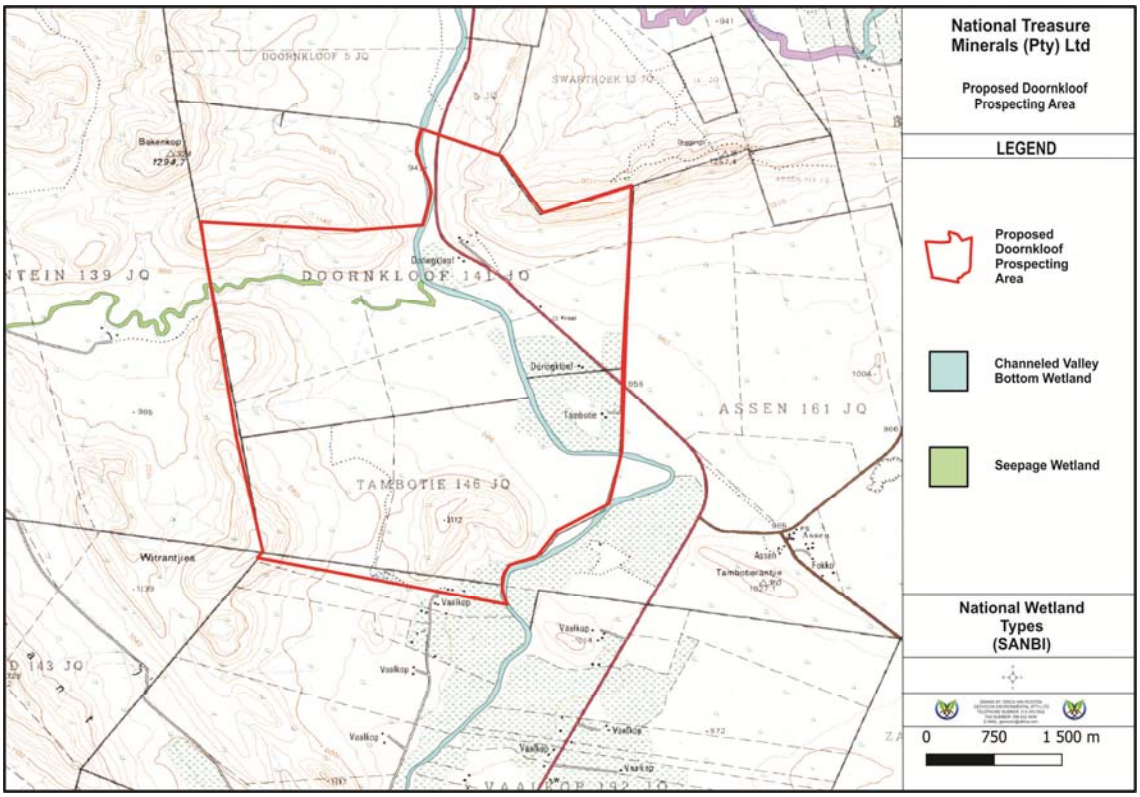

Figure 9: National Wetland Types in the Vicinity of the Proposed Doornkloof Prospecting Area (National Wetland Map, SANBI).

National Wetland Vegetation Types

The proposed Doornkloof Prospecting Area is situated in both the Central Bushveld Group 3 which is the dominant Wetland vegetation type and the Central Bushveld Bushveld Group 9, Wetland vegetation type. provides a visual indication of the Wetland Vegetation Types (SANBI).See Figure 10 for a visual indication.

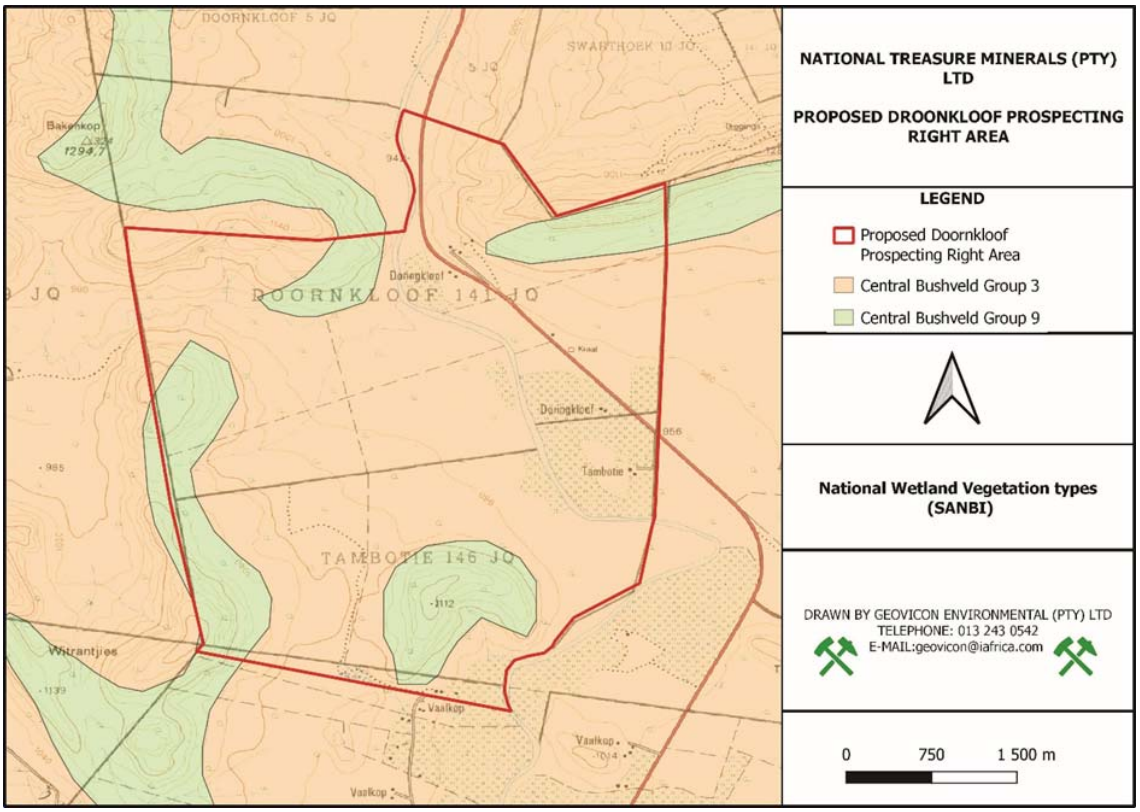

Figure 10: National Wetland Vegetation Types in the Vicinity of the Proposed Doornkloof Prospecting Area (SANBI).

Figure 11, below provides a visual indication that the proposed Doornkloof Prospecting Area is situated over terrestrial Ecological Support Areas (ESA's) as well as Critical Biodiversity Areas (CBA's).

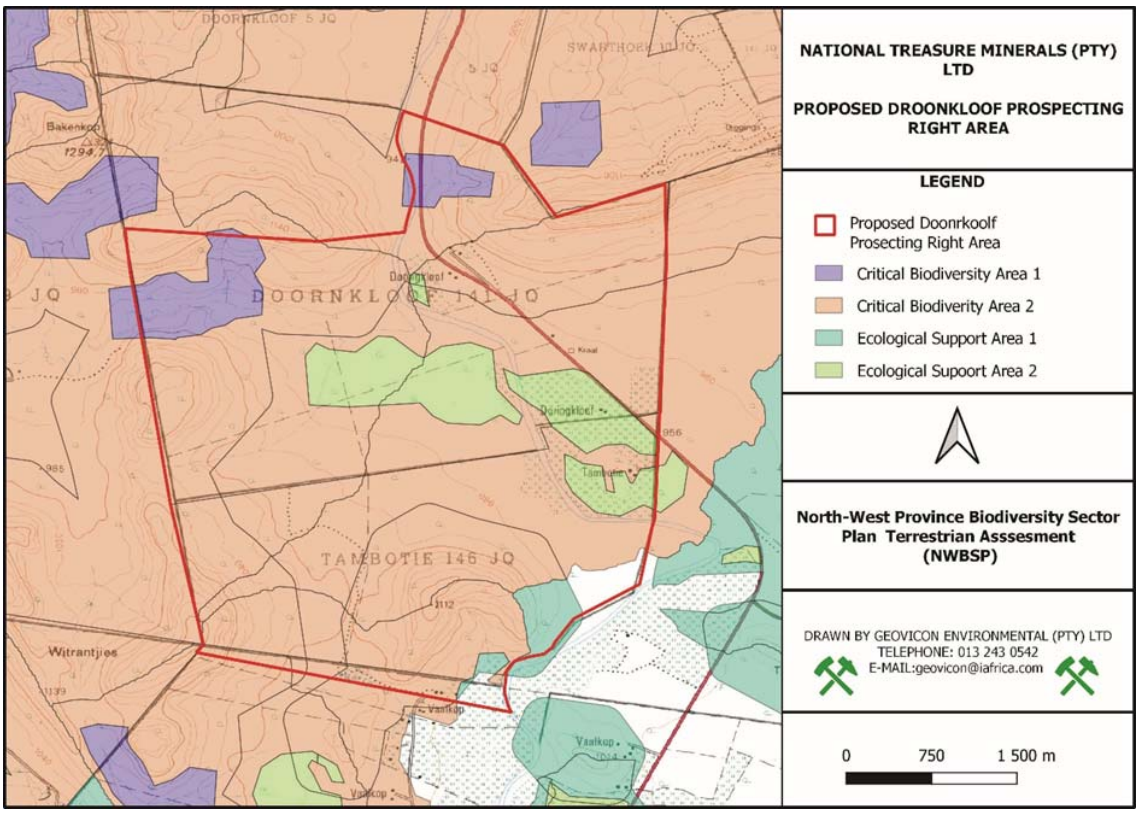

Figure 11: North-West Biodiversity Sector Plan, Terrestrial Assessment for the Proposed Doornkloof Prospecting Area (NWBSP)

Biodiversity Sector Plan Aquatic Assessment

Figure 12. provides a visual indication that the proposed Doornkloof Prospecting Area is situated over aquatic Ecological Support Areas (ESA's) as well as Critical Biodiversity Areas (CBA's)

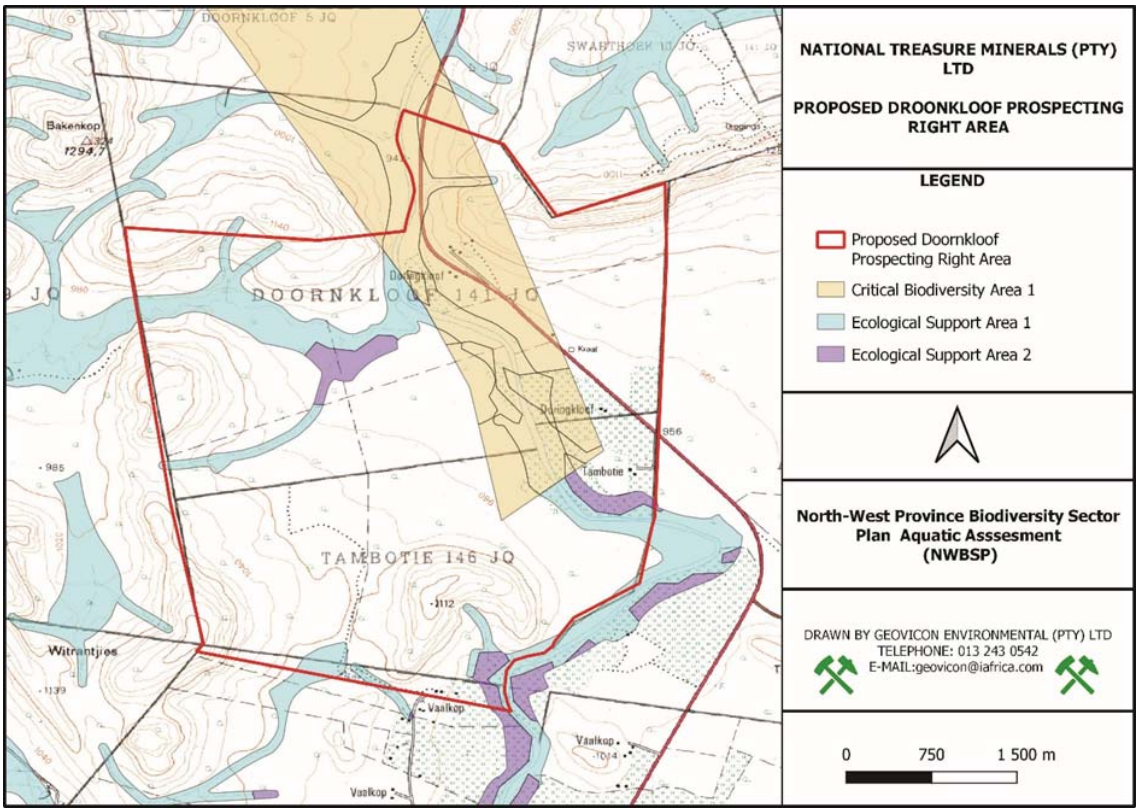

Figure 12: North West Biodiversity Sector Plan. Aquatic Assessment for the Proposed Doornkloof Prospecting Area (NWBSP).

Table 13 below provides a full definition for both Terrestrial and Aquatic CBA and ESA categories.

Table 13: Detailed description regarding the North-West Biodiversity Sector Plan

Terrestrial Critical Biodiversity Area Level 1 - Map Code CBA 1	
Critical Patches: Ecosystem Status – Critically Endangered Ecosystems	Remaining patches larger than 3 ha of provincially Critically Endangered ecosystems (vegetation types), i.e., the amount of vegetation remaining intact (of these ecosystems) is less than the representation/biodiversity target, therefore all remaining patches of these vegetation units are of the highest conservation priority and further impacts on natural habitat should be avoided
Irreplaceable Sites	Planning units with high irreplaceability values based on the provincial MARXAN analysis, i.e., areas or sites that are mandatory if biodiversity targets are to be achieved
Critical Biodiversity Corridors Linkages	Critical linkages in the provincial biodiversity corridor network where existing conversion of natural landscapes to other land uses has severely restricted options for maintaining connectivity in the natural landscape. Critical linkages that are not in a natural state are categorised as ESA 2

Important Terrestrial Habitats: Expert Areas	Areas in the terrestrial environments less than 10 000 ha in extent identified by experts as being important for biodiversity conservation
Important Terrestrial Habitats: Kloofs	All medium to large kloofs identified as an important habitat for climate change adaptation
Aquatic Critical Biodiversity Areas Level 1 – Map Code CBA 1	
FEPA Rivers	All FEPA River lines (FEPA rivers, fish sanctuary and free-flowing rivers) buffered by 100 m as identified in NFEPA and modified by DWS National River Eco status Monitoring Program (REMP) and experts.
Important Habitats: Peat Wetlands	Peat wetlands as mapped by experts
Important Habitats: Dolomitic Eyes	Dolomitic eyes as mapped by experts
Aquatic Ecological Support Areas Level 1 and Level 2 – Map Code ESA1 if natural ESA2 if not natural	
FEPA Fish Catchments	Catchments supporting FEPA fish rivers
Wetland Clusters	Clusters of larger wetlands and pans and their collective buffer (500 m).
Peat Wetland Buffers	500 m buffer around peat wetlands
Dolomite Recharge Area	The karst landscape of central North West around which all major eyes emerge and based on topography is the most likely area for the dolomitic aquifer recharge zone

5.3.9 Air Quality

Potentially air pollution from human activities may arise as a result of particulates entering the atmosphere. The sources of air pollution from human activities comprise of three broad categories i.e., stationary sources (agriculture, mining, quarrying, manufacturing, mineral products, industries and power generation), community sources (homes or buildings, municipal waste and sewage sludge incinerators, fireplaces, cooking facilities, laundry services and cleaning plants) and mobile sources combustion-engine vehicles and fugitive emissions from vehicle traffic). Air pollutants are generally classified into suspended particulate matter (dust, fumes, mists and smokes), gaseous pollutants (gases and vapours) and odours.

Assessment of the proposed Prospecting Area has determined that all three categories of air pollution sources are found at the proposed area.

5.3.10 Noise

The proposed area is predominantly a farming area. Noise from the area is mainly from farming activities with use of associated infrastructure and land use activities. Potential noise sources from the area may therefore be emanating from the following sources i.e.: roads and surrounding land uses.

5.3.11 Socio-Economic Status

Demographics

The Bojanala Platinum District Municipality is a Category C municipality situated in the North West Province. It is bordered by the Waterberg District Municipality to the north, Dr Kenneth Kaunda District Municipality to the south, City of Tshwane Metro to the east, West Rand District Municipality to the south-east, and Ngaka Modiri Molema District Municipality to the west. It is one of four district municipalities in the province and comprises five local municipalities: Kgetlengrivier, Madibeng, Moses Kotane, Moretele and Rustenburg.

The Municipality is demarcated into 31 wards of which 10 fall in the urban areas (Brits, Hartbeespoort and Skeerpoort) and 21 in the rural areas and villages. It includes approximately 43 villages and 9 000 farm areas. The proposed prospecting area falls within ward 01. Madibeng is centrally situated (approximately 50 km from Pretoria, 61.38 km from Scoping Report for mining right applications

Population

The Local Municipality of Madibeng has a total population of 542 388, with the population density of 1 655 744 (census, 2016), making it the second most populous municipality in the Bojanala Platinum District Municipality after Rustenburg. It is highly rural, with 57% of its population residing in rural areas (tribal or traditional areas), about 28% residing in urban areas and about 15% residing in farming areas. Black Africans are the majority, with an 89% share of the Madibeng Municipality's population. The most commonly spoken language is Setswana.

Table 14: Demographic Statistical Overview, as per census 2016

POPULATION GROUP		
Comparative Periods	2011	2016
Black African	424 874	485 639
Coloured	3 910	4 773
Indian Or Asian	2 410	2 946
White	43 556	49 030
TOTAL	474, 750	542, 388

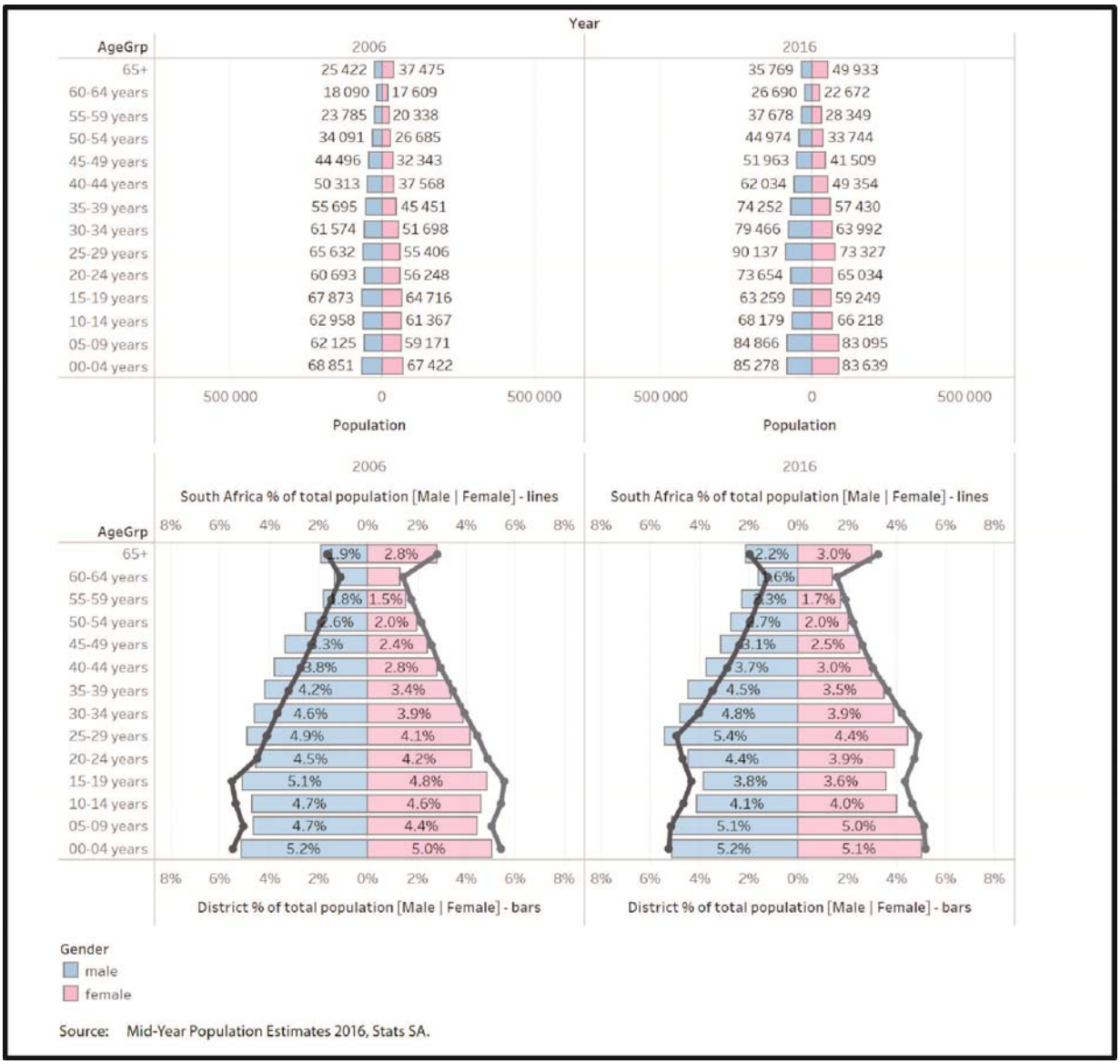

Figure 13: District Population Pyramid and Comparison with the National Pyramid

Socio-Economic status

Madibeng prides itself on a number of economic activities which play a significant role in the growth of the province and country as a whole, and which include agriculture, mining, tourism and manufacturing. Mining is presently predominant with Madibeng being the world's third largest chrome producer, and includes the richest Platinum Group Metals Reserve (situated on the Merensky Reef). Manufacturing is also a dominant sector with a wide variety of industries situated in the various industrial areas.

Tourism is one of the strong contenders, if well explored in the area. The possible establishment of the tourism belt is being researched for economic expansion. The advantage of rail and road

infrastructure spanning in all lucrative destinations will begin to bear necessary fruit for the prosperity of the people of Madibeng.

Households Income

There are approximately 84,239 household, 20,483 agricultural households with an average household size of 3.3 individuals. Only 30.9 % of households have access to piped water inside dwellings and only 84.5 % of households have access to electricity for lighting

Economic Status

According to the information from Stats SA (2016), the Madibeng District Municipality comprise 57% unemployment rate, with 43% of this total constituting youth unemployment

6 ENVIRONMENTAL IMPACT ASSESSMENT

6.1 ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOLLOWED

6.1.1 Approach to Environmental Impact Assessment

The term 'environment' is used in the broadest sense in an EIA. It covers the physical, biological, social, economic, cultural, historical, institutional and political environments.

An Environmental Impact Assessment is a good planning tool. It identifies the environmental consequences of a proposed area from the beginning and helps to ensure that the area, over its life cycle, will be environmentally acceptable and integrated into the surrounding environment in a sustainable way.

6.1.2 Environmental Impact Assessment Process Followed

Under Section 24 of the National Environmental Management Act (NEMA), the Minister promulgated the regulations pertaining to environmental impact assessments (EIA Regulations, 2014) under Government Notice NO. 326 in Government Gazette 38282 of 4 December 2014. These EIA regulations repealed the 2010 EIA regulations and therefore any process relating to environmental authorisations must be undertaken under the EIA Regulations, 2014.

Chapter 4 of the EIA Regulations, 2014 deals with the provisions for application for environmental authorisation. In view of the above, National Treasure Minerals (Pty) Limited is obliged to comply with provisions of Chapter 4 for the intended environmental authorisation application for the activities (listed activities) within the proposed area.

Part 2 of chapter 4 of the EIA Regulations, 2014 contemplate process to be undertaken for the application for environmental authorisation for the proposed area, which is the BAR process. The process to be followed is describe below.

6.1.2.1 Pre-application consultation with the Competent Authority

In terms of section 24D (1) of the National Environmental Management Act, 1998 (Act 107 of 1998), the Minister responsible for mineral resources is the competent authority for environmental matters relating to mining and associated activities. In view of the above, the application for the environmental authorisation for the proposed area was submitted to the Department of Mineral Resources and Energy (DMRE), North West Regional Office for their consideration and decision making.

6.1.2.2 BAR Phase

In compliance with Regulation 19 of the EIA Regulations, 2014, the BAR and EMPR will be submitted to the competent authority within 90 days after the acknowledgement of the environmental authorisation application.

As part of the public participation, the draft BAR and EMPR is made available to the competent authority, potential and registered interested and affected parties for their comment for a period of 30 days during the EIA phase.

6.1.2.3 Information Gathering

Environmental baseline data has been obtained, pertaining to surface water, geohydrological data, topographical analyses, soil surveys, vegetation surveys, wetland surveys and geological conditions. Weather data was acquired from the South African Weather Service. The data accumulated and analysed is sufficient to gain a baseline indication of the present state of the environment. The use of this baseline study for impact assessments is thus justified and reliable conclusions could be made.

6.1.2.4 Decision on the BAR&EMPR application

In compliance with Regulation 20 of the EIA Regulations, 2014, the competent authority will within 107 days of receipt of the BAR and EMPR grant or refuse the environmental authorisation.

6.2 ENVIRONMENTAL IMPACT ASSESSMENT METHODOLOGY

The following prediction and evaluation of impacts is based on the proposed Doornkloof Prospecting area and associated activities.

The evaluation distinguishes between significantly adverse and beneficial impacts and allocates significance against national regulations, standards and quality objectives governing:

- Health & Safety;
- Protection of Environmentally Sensitive Areas;
- Land use; and
- Pollution levels.

Irreversible impacts are also identified.

The significance of the impacts is determined through the consideration of the following criteria:

Probability	:	likelihood of the impact occurring
Area (Extent)	:	the extent over which the impact will be experienced.
Duration	:	the period over which the impact will be experienced.
Intensity	:	the degree to which the impact affects the health and welfare of humans and the environment (includes the consideration of unknown risks, reversibility of the impact, violation of laws, precedents for future actions and cumulative effects).

The above criteria are expressed for each impact in tabular form according to the following definitions:

Probability	Definition
Low	There is a slight possibility (0 – 30%) that the impact will occur.
Medium	There is a 30 –70% possibility that the impact will occur.
High	The impact is definitely expected to occur (70% +) or is already occurring.
Area (Extent)	**Definition**
Small	0 – 40 ha
Medium	40 – 200 ha
Large	200 + ha
Duration	**Definition**
Short	0 – 5 years
Medium	5 – 50 years

Long	51 – 200 years
Permanent	200 + years

Intensity	Definition
Low	Does not contravene any laws. Is within environmental standards or objectives. Will not constitute a precedent for future actions. Is reversible. Will have a slight impact on the health and welfare of humans or the environment.
Medium	Does not contravene any laws. Will not constitute a precedent for future actions. Is not within environmental standards or objectives. Is not irreversible. Will have a moderate impact on the health and welfare of humans or the environment.
High	Contravene laws. May constitute a precedent for future actions. Is not within environmental standards or objectives. Is irreversible. Will have a significant impact on the health and welfare of humans or the environment.

Significance and Risk Category	Definition
Negligible	The impact/risk is insubstantial and does not require management
Low	The impact/risk is of little importance, but requires management
Medium	The impact/risk is important; management is required to reduce negative impacts to acceptable levels
High	The impact/risk is of great importance, negative impacts could render options or the entire area unacceptable if they cannot be reduced or counteracted by significantly positive impacts, and management of these impacts is essential
Positive (No risk identified)	The impact, although having no significant negative impacts, may in fact contribute to environmental or economical health

6.3 RESULTS OF THE ENVIRONMENTAL IMPACT ASSESSMENT

6.3.1 Assessment of the Doornkloof Prospecting Area impacts/risks

6.3.1.1 Construction Phase

Table 15: Assessment of the Doornkoof Prospecting Area Impacts/ Risks

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
Site Establishment: Establishment of the access (tracks) to the prospecting site, Establishment of the campsite, Site physical surveying and pegging of drilling sites							
The establishment of access, campsite and the surveying with pegging of the drilling sites may result in the stripping of soils if the site establishment of not properly conducted. This may result in the loss of soils and erosion that may render the area unusable. During site establishment, machinery and vehicles used for the prospecting operation may result in hydrocarbon leakages, which may result in the contamination of the soils within the access tracks, campsite and drilling sites.	Soil/Land capability	Without mitigation					Establishment of the site will be undertaken according to the prospecting method statement. No soil stripping will be allowed during site establishment. Ensure minimal disturbance of soil when conducting geophysical surveys and geological mapping (if necessary). Any area that may result into the disturbance of the soils must be rehabilitated immediately on discovery. Machinery to be used for the operation will be of good working conditions. Any hydrocarbon spill from the site establishment will be remediated as soon as possible.
		S	L	S	M	M	
		With mitigation					
		S	L	S	L	L	
Current land use over the area to be used for site	Land use	Without mitigation					Use sites that are unused and that are in the degraded state for

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
establishment will cease completely. This may have an impact on the land owners' livelihood should they not be able to use the land. Drilling activities may infringe the livelihood and operations of activities occurring within and immediately adjacent the Prospecting Area .		S	M	S	M	M	the proposed development. This will be done in agreement with the land owner. The sitting of the boreholes will be conducted to ensure that rocky ridges, sensitive grass lands, indigenous trees and shrubs, sites of geological importance and farmlands actively used for crop farming are avoided. Buffer zones will be instituted around farm dwellers immediately and adjacent to the prospecting areas. No prospecting activities will be undertaken within the instituted buffer zones.
		With mitigation					
		S	L	S	L	L	
The establishment of the site (access, campsite and drilling sites) may result in the removal of vegetation cover if the establishment is not done correctly. This may render the land unusable to the land owners after completion of the area.	Natural vegetation	Without mitigation					Use sites with most disturbed vegetation cover for the development. No strip of topsoil and vegetation will be allowed during site establishment. Ensure minimal disturbance of vegetation when conducting geophysical surveys and geological mapping. Any area that may result into the disturbance of the vegetation cover must be rehabilitated immediately on discovery. Pictures of possible plant species that may be present in the Prospecting Area will be made available to the drilling crew for easy identification and avoidance. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
							drilling sites (proposed boreholes) to assess if there are no protected and/or critical natural vegetation. If any protected and/or critical natural vegetation occurs, the location of the proposed boreholes must be changed.
Animal burrows and habitats remaining within the proposed development site may be destroyed during construction. This may result in the migration of remaining animal life away from the affected areas. Poaching of wild animals and livestock by the labourers will result in the loss of wild live and loss of livestock to the land owner.	Animal Life	Without mitigation					Establishment of the site will be undertaken according to the prospecting method statement. No soil stripping will be allowed during site establishment. Any area that may result into the disturbance of the soils must be rehabilitated immediately on discovery. Use sites with most degraded environment for the site development. Poaching will be prohibited at the prospecting site. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no animal burrows and habitats. If any burrows or habitat exist, the location of the proposed boreholes must be changed.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	
Exposure of soils during construction by the stripping of vegetation and soils may cause erosion, which may lead to increased silt loads in surface water runoff. This may result	Surface and Ground Water	Without mitigation					Site establishment will not be undertaken within sensitive landscapes. These areas will be avoided. A distance of 100 meters will be created between the sites and the sensitive
		S	L	S	M	M	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
in the contamination of the clean water environment. Waste generated from the site may result in the contamination of surface and ground water should not management of such waste be undertaken.		With mitigation					landscapes. The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands Avoid stripping of areas within the construction sites. Rehabilitate areas that may have been mistakenly stripped. Storm water upslope of the campsite and drill sites should be diverted around these areas. Proper waste management facilities will be put in place at the campsite and drilling site. Any hydrocarbon spill from the site establishment will be remediated as soon as possible.
		S	L	S	L	L	
Construction activities during the establishment of the site will include material loading and hauling. These activities will result in the mobilisation of particulates that will migrate away from the site to the nearby local residents. This will be a nuisance to the communities and will result in aesthetic impacts associated with fugitive dust emissions. On-site dust fall may have health and nuisance implications to employees at the existing offices.	Air Quality	Without mitigation					Ensure that source specific management measures for Doornkloof prospecting area are complied with.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
The noise level generated from the construction activities may exceed the SANS 10103 Levels for Residential areas and may exceed the maximum rating levels for ambient noise indoors. This may have an impact in the surrounding residents and employees using/delivering the machinery.	Noise	Without mitigation					Ensure that proper management measures as well as technical changes are undertaken to reduce the impacts on surrounding residents and employees. This include ensuring that less noisy equipment is used, that equipment is kept in good working order and that the equipment must be fitted with correct and appropriate noise abatement measures and where possible use white-noise generators instead of tonal reverse alarms on heavy vehicles operating on roads.
		S	L	S	L	L	
		Without mitigation					
		S	L	S	L	N	
The activities undertaken during construction and associated infrastructure will be visible from the nearby roads and properties. However, due to the undulating topography, visibility for the most part will most probably be restricted to short distances.	Visual Aspects	Without mitigation					Inform the land owner on the type of machinery and equipment to be used at the prospecting site. Ensure that lighting is conducted in manner that will reduce the impacts on visual aspects at night times.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	
The site may be located in close proximity to a heritage site and may result in the destruction of the identified heritage site.	Sites of Archaeological and Cultural Importance	Without mitigation					The establishment of the construction infrastructure complex will be such that the development is always away from the any heritage sites. A buffer of more than fifty meters will be created between the
		S	M	S	H	H	
		With mitigation					

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
		S	L	S	L	L	grave yards and the proposed site development. A management plan will be drafted for the sustainable preservation of the grave yard should graveyards be identified on site. Any grave site must have access for descendants.
The commencement of the proposed area may result in an influx of 'outsiders' seeking jobs, which may be caused by increase in local unemployment levels. This may result in the have potential increase in crime. It must however be noted that prospecting activities would unlikely attract job seeker due to its small nature of its scale.	Socio economic aspects	Without mitigation					Recruitment will not be undertaken on site.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	

1.1.1.1. Operational Phase

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
Drilling and rehabilitation of the exploration boreholes							
Topsoil removal, storage and replacement during the excavation of the sumps will result. This will result in the disruption of the soils profile.	Soils	Without mitigation					Ensure that topsoil is properly stored, away from the streams and drainage areas. The soils must be used for the backfilling and rehabilitation of the sumps. The rehabilitated sump must be seeded with recommended seed mix.
		S	M	S	L	L	
		With mitigation					
		S	L	S	L	N	
The use of vehicles during the siting, pegging and drilling of the exploration boreholes may result in the spillages of hydrocarbon liquids from the vehicles and machinery. This will result in the contamination of the vegetation cover and soils. The material removed from the drilling exercises will contain carbonaceous material, which has a potential for pollution should it be allowed stay for a prolonged period at the drilling site. The above material, if not properly managed, may result in the contamination of the surrounding soils and vegetation cover, which may render the land not	Natural Vegetation and Soils	Without mitigation					Ensure that the drilling of the exploration boreholes is done in such a manner that the environment is protected from probable spillages and contamination by carbonaceous material. All boreholes and sumps will be rehabilitated to pre-drilling conditions. Tarpaulins will be placed on the ground to prevent oil, grease, hydraulic fluid and diesel spills during emergency repairs. All oil spills will be remedied using approved methodologies. The contaminated soils will be removed and disposed of at a licensed waste disposal facility.
		S	M	S	M	M	
		With mitigation					
		S	L	S	L	L	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
usable after the backfilling operation.							Pictures of possible plant species that may be present in the Prospecting Area will be made available to the drilling crew for easy identification and avoidance. All waste generated from the drilling sires and the campsite will be collected in proper receptacles and removed top registered disposal facilities e.g., sewage treatment plant, solid waste disposal site or hydrocarbon recycling or treatment facilities. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no protected and/or critical natural vegetation. If any protected and/or critical natural vegetation occurs, the location of the proposed boreholes must be changed
Animal burrows and habitats will be destroyed by the preparation of the backfilling sites. This will further result in the migration of animals away from these areas of disturbance. It must however be noted that no significant amount of animal life exist due to the agricultural activities currently undertaken at the proposed prospecting sites.	Animal Life	Without mitigation					The rehabilitation of the disturbed areas must be conducted such that the rehabilitated areas will encourage the migration of animals back into the rehabilitated areas. Poaching of wild animals and livestock will be prohibited. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no
		S	L	S	L	L	
		Without mitigation					
		S	L	S	L	N	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
							animal burrows and habitats. If any burrows or habitat exist, the location of the proposed boreholes must be changed
The drilling operations may result in the generation of surface water runoff contaminated with drilling muds and cuttings should spillages occur. The sedimentation and possible contamination with carbonaceous material will have negative impacts on the surrounding clean water environment. These will cause an increase in the turbidity and will decrease acidity of the water in the streams, which will affect the aquatic habitat of the wetland, hence important habitats may be lost.	Surface Water	Without mitigation					No prospecting operations will be undertaken within 100 metres from the nearby steams and wetland areas. The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands The sumps will be excavated for the collection mud and excess water from the drilling sites. The sump will be sized such that it will be able to contain the water and mud that will be generated during the prospecting operation. Storm water generated around the drilling site will be diverted away to the clean water environment. No concrete mixing and vehicle maintenance will be allowed on site. All hydrocarbons will be stored on protected storage areas away from the streams.
		S	L	S	M	L	
		With mitigation					
		S	L	S	L	L	
The prospecting operations will require the drilling of boreholes. The boreholes may result in the drawdown, which may affect the yield to the surrounding groundwater users. Material used for backfilling may leach pollutants that will result in the	Groundwater	Without mitigation					Ensure that the land owners' borehole yield is observed during the drilling operation. Should it be proven that the operation is indeed affecting the quantity and quality of groundwater available to users and surrounding water resources, the affected parties must be compensated.
		S	L	S	L	L	
		With mitigation					

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
pollution of the surrounding groundwater regime. This may even spread beyond the backfilling site via plume migration.		S	L	S	L	N	
The prospecting operation will require vehicular movement. This will result in the generation of dust by movement of vehicles and due to blowing winds. Vehicles and machinery will also generate diesel or petrol fumes. Generated dust will migrate towards the predominant wind direction and may settle on surrounding properties including nearby vegetation.	Air Quality	Without mitigation					Dust suppression must be conducted during the operational phase of the area. Correct speed will be maintained at the proposed area site. Vehicle maintenance must be conducted regularly to avoid excessive diesel fumes.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	
Noise generated from prospecting operations activities may add to the current noise levels. This may have impacts on surrounding property owners and occupiers.	Noise	Without mitigation					Ensure that proper management measures as well as technical changes are undertaken to reduce the impacts on surrounding residents and employees. This include ensuring that less noisy equipment is use, that equipment is kept in good working order and that the equipment must be fitted with correct and appropriate noise abatement measures and where possible use white-noise generators instead of tonal reverse alarms on heavy vehicles operating on roads. Correct speed will be maintained at the proposed area site. Limit operation of machinery and vehicle movement between sunrise and sunset.
		S	L	S	M	L	
		With mitigation					
		S	L	S	L	L	
The drill rigs and towers used during the drilling	Visual Aspects	Without mitigation					Ensure that the period used for the drill rigs is optimised to

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
operations will be visible from the nearby residents and properties.		S	L	S	L	L	ensure that the drill rigs are moved from one site to another over short periods.
		With mitigation					
		S	L	S	L	N	
Operation may affect the day-to-day operation of the land owners hence result in direct impact on their livelihood.	Socio economic aspects	Without Mitigation					Ensure that all safety measures (EMPR) are implemented to prevent the impacts on the property owners. Ensure that negotiations on compensation are undertaken before the drilling programme can commence. This will include any other conditions that the landowner may deem necessary for the prospecting operation.
		S	L	S	L	L	
		With Mitigation					
		S	L	S	L	N	
Operation will result in the employment of locals and support on local businesses.	Socio economic aspects	Positive					The applicant will ensure that as far as possible locals will be used during the operation of the prospecting area.
The drilling operation may result in the destruction of graves and any other heritage sites during operational phase of the area.	Sites of archaeological and cultural importance	Without Mitigation					Locate exploration borehole more than one hundred meters from the identified heritage sites. Should any cultural or heritage materials be identified, these areas will be demarcated and treated as no-go areas during the prospecting activities. Detailed heritage studies would then be undertaken if it is deemed that these sites would be affected by the prospecting activities. Any finds will be reported to the nearest National Monuments office to comply
		S	M	S	H	H	
		With Mitigation					
		S	S	S	L	L	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
							with the National Heritage Resources Act (Act No 25 of 1999) and to DEA. Local museums as well as the South African Heritage Resource Agency (SAHRA) will be informed if any artefacts are uncovered in the affected area. The prospecting workforce will be made aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken. Any discovered artefacts shall not be removed under any circumstances. Any destruction of a site can only be allowed once a permit is obtained and the site has been mapped and noted. Permits shall be obtained from the South African Heritage Resources Association (SAHRA) should the proposed site affect any world heritage sites or if any heritage sites are to be destroyed or altered.

1.1.1.2. Decommissioning and Closure Phases

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
DECOMMISSIONING AND CLOSURE PHASES							
Decommissioning of prospecting site (Site Rehabilitation)							
The removal of the campsite equipment and the rehabilitation of the drilling sites and associated access infrastructure will result in the affected soil and land use being restored. This will also result in the resumption of the use of the land since the infrastructure would have been removed.	Soils, Land Capability and Land Use	Positive impact					Ensure that rehabilitation is conducted in accordance with a rehabilitation method statements approved by the mine management. See description of the rehabilitation plan and management actions in the EMPR. Ensure that contamination of the rehabilitate area by carbonaceous material and hydrocarbon liquids are prevented.
Positive impacts will result due to the reduction in areas of disturbance and the return of land use of the affected areas and making available an area that was covered by the campsite and drilling sites.	Land Use	Positive impact					
The use of vehicles/machinery during the	Soils and Natural	Without mitigation					Ensure that the rehabilitation work is done in such a manner that

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
DECOMMISSIONING AND CLOSURE PHASES							
rehabilitation of the exploration sites may result compaction of soils and in the spillages of hydrocarbon liquids from the vehicles and machinery. This will result in the contamination and destruction of the vegetation cover and soils.	Vegetation	S	M	S	M	M	the environment is protected from probable spillages and contamination by carbonaceous material. All boreholes and sumps will be rehabilitated to pre-drilling conditions. Tarpaulins will be placed on the ground to prevent oil, grease, hydraulic fluid and diesel spills during emergency repairs. All oil spills will be remedied using approved methodologies. The contaminated soils will be removed and disposed of at a licensed waste disposal facility. All waste generated from the rehabilitation sites will be collected in proper receptacles and removed to registered disposal facilities e.g., sewage treatment plant, sold waste disposal site or hydrocarbon recycling or treatment facilities.
		With mitigation					
		S	L	S	L	L	
During the decommissioning and closure phases equipment will be removed, stockpiled soils will be used for rehabilitation, remaining sumps will be backfilled, levelled, topsoiled and the area re-seeded. During the process of rehabilitation surface water runoff from the rehabilitation site may have elevated silt load, which may cause pollution of the nearby water environment.	Surface Water	Without mitigation					Ensure that water leaving the site do not have elevated silt load. Ensure that the rehabilitated areas are free draining and that water from these areas is clean.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
DECOMMISSIONING AND CLOSURE PHASES							
Rehabilitation and removal of the prospecting sites and equipment will require vehicular movement. This will result in the generation of dust by movement of vehicles and due to blowing winds. Vehicles and machinery will also be generated diesel or petrol fumes. Generated dust will migrate towards the predominant wind direction and may settle on surrounding properties including nearby vegetation.	Air Quality	Without mitigation					Dust suppression must be conducted during the decommissioning phase of the area whenever excessive dust is generated. Correct speed will be maintained at the proposed area rehabilitation sites. Vehicle maintenance must be conducted regularly to avoid excessive diesel fumes.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	
Noise will be generated during the removal of equipment and rehabilitation of the sites. This noise is not expected to exceed occupational noise limits and will be short lived.	Noise	Without mitigation					Where necessary, provide employees with ear plugs and employees must be instructed to use the ear plugs. Ensure that equipment is well maintained and fitted with the correct and appropriate noise abatement measures.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	

6.4 SUMMARY OF SPECIALIST REPORTS

Since desktop information was used, no specialist studies were conducted for the proposed prospecting area.

6.5 ENVIRONMENTAL IMPACT STATEMENT

National Treasure Minerals (Pty) Limited has applied for a prospecting right over the Doornkloof proposed prospecting area. The prospecting operation will involve the exploration for Iron ore within the Prospecting Area. Diamond core drilling will be used or the exploration and a campsite will be established on site. Each drilling site will have an access route in the form of a track and a sump for the collection of waste water generated during the drilling operation.

6.5.1 Description of affected environment

The proposed area is situated within the end-Archaean/earliest Proterozoic platform. The proposed area is situated in area encompasses slight to moderate undulating plains, including surface water features such as rivers, streams and pan depressions. A variety of soil types were identified within the area using desktop, which include recharge, interflow and responsive soils. The land uses over the area correspond to the soils found in the area and include mainly agriculture (crop cultivation and grazing) and wilderness with limited industrial and residential stands. Due to the above land uses significant change has occurred on the natural vegetation, with most of the area being cultivated lands. Sensitive landscapes identified around the proposed Prospecting Area include river and a perennial stream.

6.5.2 Summary of key findings of the environmental impact assessment

During the proposed prospecting operation impacts may only occur on soils, natural vegetation, surface water, groundwater, sensitive landscapes, air quality, noise, visual aspects, and sites of archaeological and cultural importance should the prospecting method statement not be adhered to. Alternatives considered for the location campsite and drilling sites has shown that the selected locations would be the most favourable. National Treasure Minerals (Pty) Limited will undertake measures to ensure that the identified impacts are minimised. Assessment of the impacts with the proposed mitigation measures has shown the significance of the impacts on all affected environmental aspects to be reduced from to low and negligible significance.

Land use will not change. Several landowners and land occupiers within the proposed prospecting area may be affected although on a temporary basis due to the need to access the sites and establishment and use of the campsite. Measures such as safety along the roads and dust suppression will be undertaken to ensure that the impacts on the land owners and land occupiers are minimised.

Assessment of the vegetation within the footprint of the development area has shown limited presence of natural vegetation.

Storm water runoff from the dirty water areas of the drilling sites, and its associated surface infrastructure (campsite) may have a detrimental impact on the surrounding water environment should this water be released to the environment. In order to prevent the occurrence of the above-mentioned impacts, dirty water collection sump will be used to collect all dirty water from the drilling site. The water collected from the sump will be re-used, evaporated and the sump will be rehabilitated once the drilling is finished. Sediments will be created from the site during the construction, operational and

decommissioning phase, which may impact negatively on the surrounding water environment, will be treated should they contain hydrocarbon waste.

All workers will be housed in the campsite to be established on site. The employees will be given stick instruction not to undertaken activities that will affect the environment and that may have an impact on the landowner. Waste generated from the site will be collected in proper receptacle and disposed of in registered waste disposal sites.

6.5.3 Final Master Layout Plan

The final maps showing the layouts of the proposed area will be submitted with the final BAR and EMPR to the DMRE on granting of the prospecting right. The map will be developed to superimpose the proposed prospecting area together and associated infrastructure with the environmental sensitivities within the proposed area site.

Figure 14, below represents the Proposed Drill sites where the boreholes should be placed within the Prospecting Area in relation to the North West Biodiversity Sector Plan, Terrestrial Assessment. Refer to **Appendix D** for an A3 sized plan of the proposed prospecting layout plan.

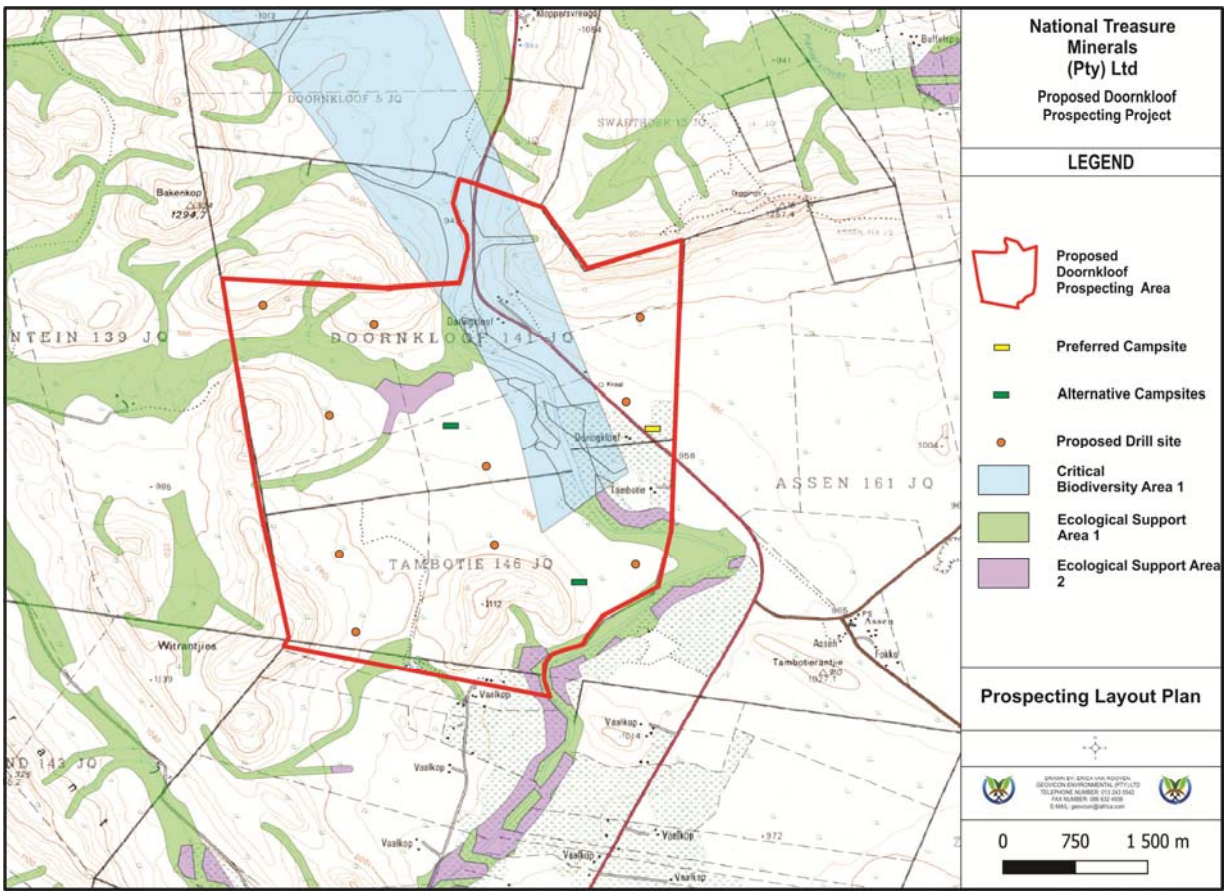

Figure 14: Proposed Prospecting Layout Plan for the proposed Doornkloof Prospecting Area

6.6 Aspects for Inclusion as conditions of the Environmental Authorisation

In authorising the proposed Doornkloof Prospecting area, the following conditions should form part of the environmental authorisation:

- National Treasure Minerals (Pty) Limited may not alter the location of any of the area activities included in this environmental impact assessment without obtaining the required environmental authorisation to do so under NEMA.
- National Treasure Minerals (Pty) Limited will not undertake any new activity that was not part of this environmental impact assessment and that will trigger a need for an environmental authorisation without proper authorisation.
- National Treasure Minerals (Pty) Limited must, where necessary, undertake specialists' studies, management procedures and method statement should the need arise.
- The EMPR must be implemented fully at all stages of the proposed area
- National Treasure Minerals (Pty) Limited must limit night-time operations. This would be relevant for all work taking place at night within 150m from the closest receptors in this community. If night work is conducted, such must be conducted in agreement with the land owners and affected parties (lawful land occupier and labours).

6.7 DESCRIPTION OF ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

The EIA Regulations, 2014 outline specific requirements that a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures must be provided in the BAR.

The assessments undertaken are based on conservative methodologies and these methods attempts to determine potential negative impacts that could occur on the affected environmental aspects. These impacts may however be of smaller magnitude than predicted, while benefits could be of a larger extent than predicted.

This section outlines various limitations to the specialist studies that have been undertaken and indicates, where appropriate, the adequacy of predictive methods used for the assessment. This has been done to provide the authorities and interested and affected parties with an understanding of how much confidence can be placed in this impact assessment.

The EIA has investigated the potential impact on key environmental media relating to the specific environmental setting for the site. A number of desktop assessment were undertaken and result thereof and are presented in this report.

The information provided in this BAR and EMPR is therefore considered sufficient for decision-making purposes.

6.8 REASONED OPINION AS TO WHETHER THE PROPOSED AREA SHOULD OR SHOULD NOT CONTINUE

6.8.1 Reason why the activity should be authorised or not

According to the impact assessment undertaken for the proposed area, the key impacts of the area are on soils, natural vegetation and land owners/occupiers.

The area will also have positive impacts due to the employment to be created although for a short term.

The public will also be requested for their comments. All comments to be received during Public Participation Process will be included in the final BAR and EMPR. These comments will be addressed as far as possible to the satisfaction of the interested and affected parties.

The management of the impacts identified in the impact assessment for all phases of the proposed area will be undertaken through a range of programmes and plans contained in the EMPR. In consideration of the programmes and plans contained within the EMPR, layouts and method of statements compiled for the area, which is assumed will be effectively implemented, there will be significant reduction in the significance of potential impacts.

Based on the above, it is therefore the opinion of the EAP that the activity should be authorised.

6.8.2 Conditions that must be included in the authorisation

See section 6.6 above.

6.9 Period for which the Environmental Authorisation

Based on the prospecting method statement, the environmental authorisation should be given for five years.

6.10 Undertaking

The signed undertaking will be presented to the DMRE on execution of the prospecting right.

6.11 Financial Provision

According to Appendix 3 of the EIA Regulations, 2014, where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts must be provide in the BAR and EMPR. In order to avoid duplication, the financial provision for the proposed area has only been provided under the relevant section of the EMPR.

6.12 Other Information Required by the Competent Authority

Aside from the BAR and EMPR no other information has been requested by the competent authority

6.13 Other Matters Required in Terms of Section 24 (4) (a) and (b) of the Act

Any matter required in terms of the above section of the Act will be complied with by National Treasure Minerals (Pty) Limited .

PART B

Environmental Management Programme

1.DETAILS OF THE EAP

EAP: Mr. Ornassis Tshepo Shakwane

Professional registration:

SACNASP: 117080

EAPASA: 2019/1763

IAIA Membership: 3847

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1.1. Expertise of the EAP who prepared the BAR and EMPr

Geovicon Environmental (Pty) Limited is a geological and environmental consulting company. The company was formed during 1996, and currently has twenty-five years' experience in the geological and environmental consulting field. Geovicon Environmental (Pty) Limited has successfully completed consulting areas in the Mining sector (Iron ore, gold, base metal and diamond), Quarrying sector (sand, aggregate and dimension stone), Industrial sector and housing sector. Geovicon Environmental (Pty) Limited has undertaken contracts within all the provinces of South Africa, Swaziland, Botswana and Zambia. During 2001 Geovicon Environmental (Pty) Limited entered the field of mine environmental management and water monitoring.

Geovicon Environmental (Pty) Limited is a Black Economically Empowered Company with the BEE component owning 60% of the company. Geovicon Environmental (Pty) Limited has three members i.e., O.T Shakwane, J.M. Bate and T.G Tefu.

Mr. O.T Shakwane obtained his BSc (Microbiology and Biochemistry) from the University of Durban Westville in 1994, and completed his Honours degree in Microbiology in 1995. Mr O.T Shakwane has also completed short courses on environmental law, environmental impact assessment, environmental risk assessment and environmental management system with a number tertiary institution. He has worked with the three state departments tasked with mining and environmental management i.e., Department of Water and Sanitation (Gauteng and Mpumalanga Region), Department of Mineral Resources (Mpumalanga Region) and Department of Agriculture, Conservation and Environment (Gauteng Region). Mr. Shakwane has been in the consulting field since 2004 and has completed various projects similar to the proposed in-pit discard disposal as an environmental assessment practitioner. Mr Shakwane, a registered environmental assessment practitioner, is the reviewer for the BAR and EMPR for the proposed Prospecting Area for Iron ore. He is registered with the Environmental Assessment Practitioners Association of South Africa and South African Council for Natural Scientific Professions as an Environmental Assessment Practitioner and a Professional Natural Scientist, respectively in terms of the section 20(3) of the Natural Scientific Professions

Act, 2003 (Act 27 of 2003). He is also a member of the International Association for Impact Assessment, South Africa.

Geovicon Environmental (Pty) Limited is an independent consulting company, which has no interest in the outcome of the decision regarding the Doornkloof prospecting area 's basic assessment process.

The curriculum vitae of the EAP is attached as **Appendix E**.

2 DESCRIPTION OF THE ASPECTS OF THE ACTIVITY

2.1 DATA GATHERING

Relevant information regarding the potential of the identified Prospecting Area area will be sourced from institutions like the Council for Geoscience. This information will be analysed and interpreted through computer modelling of existing data.

The interpretation of the said data will result in compiling literature review report. The said report will give indication as to what processes (in order of priority) to follow to complete the prospecting activities.

2.2 FIELD MAPPING

The field mapping will include field surveying (to determine sensitive areas), geophysical surveys and pegging of the drilling sites.

2.3 DETAILED SITE SURVEY AND INVESTIGATION

Demarcation of sensitive and protected areas will be conducted by a physical survey of the proposed area by a suitability qualified person. This should be done before establishment of access to the site, caravan structure and drilling of exploration boreholes.

2.4 GEOPHYSICAL SURVEYS AND DATA INTERPRETATION

Geophysical surveys will be used over the proposed prospecting site.

2.5 PEGGING OF DRILL SITES

All exploration borehole sites will be staked by a suitably qualified person. The sites will thereafter be plotted on a plan drawn to an appropriate scale.

2.6 ESTABLISHMENT OF ACCESS

There is a good network of both tarred and gravel roads connecting the prospecting area with surrounding towns. Existing roads to be used for the proposed area include the R53 Provincial Road, and number of private farm roads. Where necessity, arise for access to the drilling sites, tracks will be established as access to the drilling site. These, tracks will be established to be more than a hundred meters away from any sensitive landscapes. The tracks will also be sited away from protected areas. Vegetation clearance will be avoided during the establishment of the access roads.

2.7 ESTABLISHMENT OF CARAVAN SITE

Caravans, ablution facilities (chemical toilets) and waste storage facilities will be provided for employees. Clearing of vegetation will be avoided during the establishment of the caravan site.

2.8 DIAMOND DRILLING FOR BOREHOLES AND SUMP CONSTRUCTION

Geological boreholes will be drilled on a predetermined grid. During drilling of each borehole, a sump of approximately 1.0 x 1.0 x 1.0 m will be excavated for collecting of excess muds (water) from the drilling operation and for recycling of the water used for the operation of the drilling machine.

2.9 TOPSOIL STORAGE SITE

The top and sub soils removed from the sump and drilling boreholes will be stockpiled in close proximity to the sumps. The sumps will be backfilled manually by spades, once drilling and sampling of boreholes is completed.

2.10 LOGGING AND SAMPLING OF THE CORE

This involves the physical description of the rocks intersected by the drilling process. The interpretation of these rock descriptions will assist in establishing the general stratigraphy of the area. Sampling will be taken at the desired horizons and sent to the laboratory for analyses.

2.11 SITE REHABILITATION

Concurrent rehabilitation (Plugging and reseeding) of disturbed areas will be undertaken as drilling continues.

2.12 FINAL REHABILITATION

Except for farm roads, no tracks and infrastructure related to the prospecting operation will remain in place after the decommissioning phase. Where tracks have resulted in more damage, such tracks will be ripped and allowed to return to the natural state, and seeding is not done as experience has shown that the natural process returns the site to its former state within a seasonal cycle. The sumps will be rehabilitated in such a manner to return the area to as close as possible to its pre-drilling environment.

Post closure, the Prospecting Area will consist of re-vegetated areas with vegetation cover comparable to the surrounding areas. This will be unaffected by the prospecting activities. No prospecting related infrastructure will remain on the prospecting site. The area will conform to the pre-prospecting topography. The areas affected by prospecting will be stable and erosion free.

2.13 AFTER CLOSURE PHASE

The rehabilitated area will be monitored on a quarterly basis to ensure that the site returns to an acceptable state, in the event that is not happening naturally, the area will be seeded. After the decommissioning of the site and if it can be determined that the site is stable, an Environmental Authorisation for the decommissioning of the site and a closure certificate will be applied for in terms of the relevant laws.

Please note that the final borehole layout can only be determined once the prospecting right is granted, thereafter it will be sent to the Department of Mineral Resources and Energy (DMRE).

3.COMPOSITE MAP

The map superimposing the proposed area, its associated structures and infrastructure on the environmental sensitivities of the preferred site will be provided on approval of the EMPR. Note that all areas that must be avoided due to their environmental sensitivity will be indicated in the map.

4.DESCRIPTION OF THE MANAGEMENT OBJECTIVES

INCLUDING MANAGEMENT STATEMENTS

4.1 General Closure Principles and Objectives

The following are the closure objectives, general principles and objectives guiding closure of the Doornkloof Prospecting area closure planning:

- Rehabilitation of areas disturbed as a consequence of prospecting to a land capability that will support and sustain a predetermined post-closure land use;
- Removal of all infrastructure/equipment that cannot be beneficially re-used, as per agreements established, and returning the associated disturbed land to the planned final land use;
- Removal of existing contaminated material from affected areas;
- Establishment of final landforms that are stable and safe in the long run;
- Establishment and implementation of measures that meet specific closure related performance objectives;
- Treatment of mine-affected water to ensure compliance with all relevant standards and supply
- Monitoring and maintenance of rehabilitated areas forming part of site closure to ensure the long-term effectiveness and sustainability of measures implemented.

4.2 Management of Environmental Damage, Environmental Pollution and Ecological degradation caused by the Doornkloof Prospecting area Activities

The following actions will be undertaken by National Treasure Minerals (Pty) Limited to ensure that the closure objectives are attained.

4.2.1 Infrastructure Areas

- All infrastructure and equipment used during the prospecting operation will be removed from the site.
- All tracks that were used for access the drilling sites will be allowed to re-establish to its pre-prospecting condition. Should unsatisfactory results be noted, the area will be physically rehabilitated.
- All rehabilitated areas will be maintained for a period of 2 years, where after the frequency will be reassessed. Where necessary, vegetation cover will be maintained by annual application of fertiliser.
- Maintenance with respect to erosion will be conducted on a minimum of quarterly basis if and where required.

4.2.2.1 Buildings (Offices, Workshops and Stores)

Mobile structures will be used and such structures will be removed from the sites during decommissioning of the site.

4.3 POTENTIAL RISK OF ACID MINE DRAINAGE

No potential risk of acid mine drainage.

4.4 STEPS TAKEN TO INVESTIGATE, ASSESS AND EVALUATE THE IMPACTS OF THE ACID MINE DRAINAGE

Since there is no risk of acid mine drainage, there will be no need for steps to be taken to investigate, assess and evaluate the impacts of acid mine drainage.

4.5 ENGINEERING AND DESIGNS SOLUTIONS TO BE IMPLEMENTED TO AVOID OR REMEDY ACID MINE DRAINAGE

Since there is no risk of acid mine drainage, there will be no need for engineering and designs solutions to be implemented to avoid or remedy acid mine drainage.

4.6 MEASURES TO REMEDY RESIDUAL OR CUMULATIVE IMPACTS FROM ACID MINE DRAINAGE

Since there is no risk of acid mine drainage, there will be no need for measures to remedy residual or cumulative impacts from acid mine drainage.

4.7 VOLUMES AND RATES OF WATER USE REQUIRED FOR THE PROPOSED AREA

Since there is no risk of acid mine drainage, this section will not applicable.

4.8 WATER USE LICENCE APPLICATION

No water use activities will be undertaken during the proposed prospecting operation; hence no water use licence will be applied for.

5 ENVIRONMENTAL MANAGEMENT PROGRAMME

Table 16: Environmental Management Programme

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
CONSTRUCTION PHASE								
Establishment of access, to prospecting sites, establishment of the campsite, physical surveying of the site and pegging of drilling boreholes								
		To ensure that the activities in the development of the prospecting sites and associated infrastructure do not have detrimental impacts on the soils, land use and land capability.	Ensure that the establishment of the prospecting sites is undertaken in accordance with the approved EMPR.	Establishment of the site will be undertaken according to the prospecting method statement.	Appointed contractor and site manager.	Visual monitoring through inspections.	Environmental Control Officer (ECO) during construction.	During construction phase.
Loss of soils, erosion of the soils and impacts on land owner's livelihood.	Soils, Land Use and Land Capability.		Buffer zones will be instituted around farm dwellers immediately and adjacent to the prospecting areas. No prospecting activities will be undertaken within the instituted buffer zones.	No soil stripping will be allowed during site establishment.	Appointed contractor.	Visual monitoring and inspections	ECO monthly.	During construction phase.
				Should it be necessary to conduct geophysical surveys and geological mapping, ensure minimal disturbance of soil.	Appointed contractor.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				Any area that may result into the disturbance of the soils must be rehabilitated immediately on discovery.	Appointed contractor and the applicant site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				Machinery to be used for the operation will be of good working conditions. Any hydrocarbon spill from the site establishment will be remediated as soon as possible.	Appointed contractor.	Visual monitoring and inspections	ECO monthly.	During construction phase.
				Use sites that are unused and that are in the degraded state for the proposed development. This must be done in agreement with the land owner. The sitting of the boreholes must be conducted such that ensure that rocky ridges, sensitive grass lands, indigenous trees and shrubs, sites of geological importance and farmlands actively used for crop farming are	Appointed contractor.	Undertake regular inspections.	ECO monthly.	During construction phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
				avoided.				
Loss of natural vegetation in the affected areas.	Flora.	To ensure that the establishment of the prospecting site and associated infrastructure/equipment do not have detrimental impact on the area's flora.	The management of the impact will comply with the company's biodiversity management plan. Ensure that protected species should they be identified are not destroyed.	Use sites with most disturbed vegetation cover for the development. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no protected and/or critical natural vegetation. If any protected and/or critical natural vegetation occurs, the location of the proposed boreholes must be changed No strip of topsoil and vegetation will be allowed during site establishment. Ensure minimal disturbance of vegetation when conducting geophysical surveys and geological mapping. Any area that may result into the disturbance of the vegetation cover must be rehabilitated immediately on discovery.	Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor and site manager.	Visual monitoring and inspections. Visual monitoring and inspections. Visual monitoring and inspections.	ECO monthly. ECO monthly. ECO monthly.	During construction phase. During construction phase. During construction phase. During construction phase.
Migration of animal life due to disturbance caused proposed area	Animal Life	Ensure that the animal life within in the area is not affected by the proposed area	Maintenance of the current status on animal life within the area	Establishment of the site will be undertaken according to the prospecting method statement. No soil stripping will be allowed during site establishment. Any area that may result into the disturbance of the soils must be rehabilitated immediately on discovery. Use sites with most degraded environment for the site development.	Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor	Visual monitoring and inspections. Visual monitoring and inspections. Visual monitoring	ECO monthly. ECO monthly.	During construction phase. During construction phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
					and site manager.	and inspections.	ECO monthly.	During construction phase.
				Poaching will be prohibited at the prospecting site. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no animal burrows and habitats. If any burrows or habitat exist, the location of the proposed boreholes must be changed	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
Deterioration of water quality in in the nearby steams and within the groundwater regime.	Surface and Ground Water.	Ensure that the establishment of the area and its associated infrastructure does not have detrimental impact on nearby stream and the groundwater regime.	The quality of streams and groundwater within the site will comply with the target DWS target water quality objectives. Construction will be in compliance with the regulations under the GN704.	Site establishment will not be undertaken within sensitive landscapes. These areas will be avoided. A distance of 100 meters will be created between the sites and the sensitive landscapes. The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands Avoid stripping of areas within the construction sites. Rehabilitate areas that may have been mistakenly stripped. Storm water upslope of the campsite and drill sites should be diverted around these areas. Proper waste management facilities will be put in place at the campsite and drilling site. Any hydrocarbon spill from the site establishment will be remediated as soon as possible.	Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor and site manager.	Regular inspections Regular inspections Regular inspections Regular inspections Regular inspections	ECO monthly. ECO monthly. ECO monthly. ECO monthly. ECO monthly.	During construction phase. During construction phase During construction phase During construction phase During construction phase.
Wetland destruction and loss of habitat.	Sensitive Landscapes.	Ensure that the construction activities do not have detrimental impacts on the	Maintain the current state of the sensitive landscapes within the area (farm dams and	Construction activities will be limited to be more than hundred meters from the edge of the dams and seepage zone. The applicant must also apply	Appointed contractor and site manager.	Inspection to ensure compliance with the action plan will	ECO will conduct the inspections monthly.	Whenever construction is undertaken near the sensitive landscapes.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
		sensitive landscapes.	seepage zone).	for a GA before drilling within 500m of nearby streams and/or wetlands		be conducted at the construction site.		
Air pollution through air pollutants' emissions, from the construction site.	Air quality.	Ensure that all operations during the construction phase do not result in detrimental air quality impacts.	The construction will be undertaken such that the ambient air quality does not exceed the National Air Quality Standards.	Wet suppression using will be conducted at areas with excessive dust emissions. Traffic will be restricted to demarcated areas and traffic volumes and speeds within the construction site will be controlled.	Appointed contractor and site manager. Appointed contractor and site manager.	Visual inspections of areas with possible dust emissions. Regular inspections.	ECO monthly. ECO monthly.	Throughout the construction phase. Throughout the construction phase.
Increased noise levels.	Noise aspects.	Ensure that the noise levels emanating from the construction sites will not have detrimental effects on the mine employees and surrounding communities/land owners.	The noise levels from the construction sites will be managed and measures will be taken to ensure that noise levels are below the National Noise Control Regulations, SANS10103:2008 guidelines.	Limit the maximum speed to 60 km/h or less, subject to risk assessment. Less noisy equipment will be used, the equipment will be kept in good working order and the equipment will be fitted with correct and appropriate noise abatement measures. Ensure that the employees are issued with earplugs and that they are instructed to use them. Educate employees on the dangers of hearing loss due to mine machinery noise.	Appointed contractor and site manager. Site manager. Site manager.	Undertake site checks on speeds used. Speed checking will be conducted. Use of earplugs will be checked and reported.	Site manager. Site manager checking as regularly as possible. Site manager will check the use of the earplugs as regularly as possible.	Throughout the construction phase. Throughout the duration of the construction phase Throughout the duration of the construction phase.
Visual impacts on the surrounding communities and road users from the construction.	Visual aspects.	Ensure that all operations during the construction phase do not result in detrimental visual impacts on surrounding properties, communities and road users.	Measures will be undertaken by the mine to ensure that the visual aspects from the site are complying with the relevant visual standards and objectives.	The land owner will be informed on the type of machinery and equipment to be used at the prospecting sites. Lighting will be conducted in manner that will reduce the impacts on visual aspects at night times.	Applicant and site manager. Appointed contractor.	The constructed perimeter berms will be inspected for compliance with the design specifications. Night time inspection of the site will be undertaken.	Mine Engineer on a monthly basis. The site manager once	Throughout the construction phase. During construction phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
Damage or destruction of sites with archaeological and cultural significance.	Sites of archaeological and cultural importance.	Ensure that the construction activities do not have detrimental impacts on the heritage sites.	The construction will be undertaken in compliance with the requirements of the National Heritage Resources Act, 1999 (Act 25 of 1999) and recommendations from the specialist.	The establishment of the sites will be away from any identified grave site or heritage sites. A buffer of hundred meters will be created between the sites and the proposed camp and drilling sites.	Appointed contractor and site manager.	The site will be monitored for any damages on a regular basis.	ECO monthly	Throughout the construction phase when activities are in close proximity to the heritage sites.
Impact from the influx of job seekers and employment of farm labourers.	Socio-economic aspects.	Ensure that measures are taken to discourage influx of job seekers and employment of farm labourers.	Measures taken will be in line with the company's recruitment policies.	Recruitment will not be undertaken on site.	Appointed contractor and site manager.	Visual monitoring.	Site manager	Throughout the pre-construction and construction phase.
OPERATIONAL PHASE								
Diamond Core drilling of the exploration boreholes, use of campsite and rehabilitation of the drilling sites								
Soil profile disruption, contamination of soils, destruction of natural vegetation and loss of land use.	Soils, Natural Vegetation, Land Use and Land Capability.	Ensure that the operation of the drilling sites and use of campsite and rehabilitation of drilling site do not have detrimental impacts on the soils, natural vegetation and current land use.	The land use and capability of the sites where the operations will be undertaken will continue after the proposed area.	Ensure that the drilling of the exploration boreholes is done in such a manner that the environment is protected from probable spillages and contamination by carbonaceous material. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no protected and/or critical natural vegetation. If any protected and/or critical natural vegetation occurs, the location of the proposed boreholes must be changed. All boreholes and sumps will be rehabilitated to pre-drilling conditions. Tarpaulins will be placed on the ground to prevent oil, grease, hydraulic fluid and diesel spills during emergency repairs. All oil spills will be remedied using approved	Appointed contractor and site manager. Appointed contractor. Appointed contractor. Appointed contractor	Regular inspections Regular inspections Regular inspections. Inspection of the site will be conducted.	ECO monthly. ECO monthly. ECO monthly. ECO monthly.	During the operational phase of the area. During the operational phase of the area. During the operational phase of the area. During the operational phase of the area.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
				methodologies. The contaminated soils will be removed and disposed of at a licensed waste disposal facility. All waste generated from the drilling sires and the campsite will be collected in proper receptacles and removed top registered disposal facilities e.g., sewage treatment plant, sold waste disposal site or hydrocarbon recycling or treatment facilities.				
Migration of animal life due to disturbance caused proposed area	Animal Life	Ensure that the animal life within in the area is not affected by the proposed area	Maintenance of the current status on animal life within the area	Sites will be operated according to the prospecting method statement. As much as possible sites with degraded environment will be used or the drilling purposes. Poaching will be prohibited at the prospecting site. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no animal burrows and habitats. If any burrows or habitat exist, the location of the proposed boreholes must be changed	Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor and site manager.	Visual monitoring and inspections. Visual monitoring and inspections. Visual monitoring and inspections.	ECO monthly. ECO monthly. ECO monthly.	During operational phase. During operational phase. During operational phase.
The drilling operation and use of campsite may result in the generation of surface water runoff contaminated with silt (sedimentation) and possibly hydrocarbon fluids should spillages	Surface and Ground Water.	Ensure that the drilling operation does not have detrimental impacts on the surface and ground water environment.	Clean surface and ground water environment/regime will not be affected.	No prospecting operations will be undertaken within 100 metres from the nearby steams and 100 meters from the nearby wetland areas. The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands The sumps will be excavated for the collection mud and excess water from	Appointed contractor and site manager. Appointed contractor and site manager.	Visual monitoring and inspections. Visual monitoring and inspections.	ECO monthly. ECO monthly.	During operational phase. During operational phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
occur.				the drilling sites. The sump will be sized such that it will be able to contain the water and mud that will be generated during the prospecting operation.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During operational phase.
				Storm water generated around the drilling site will be diverted away to the clean water environment. No concrete mixing and vehicle maintenance will be allowed on site. All hydrocarbons will be stored on protected storage areas away from the streams.	Appointed contractor and site manager.	Regular meetings with landowners	Site manager	During operational phase.
				Ensure that the land owners' borehole yield is observed during the drilling operation. Should it be proven that the operation is indeed affecting the quantity and quality of groundwater available to users and surrounding water resources, the affected parties must be compensated.				
		Ensure that drilling operation does not have a detrimental impact on the number of aquifers underlain by the site.	Aquifers will not be affected.	Ensure minimum distance as per legislation is kept from the waste disposal site.				
				Ensure that an experienced geologist must oversee the drilling process.				
Generation of dust and fuel fumes by vehicular movement.	Air quality.	Ensure that the air quality in the vicinity of the prospecting sites and sites' access routes are not detrimentally altered.	The air quality in the vicinity of the drilling sites and sites' access routes will be maintained to stay within the national air quality standards.	Dust suppression must be conducted during the operational phase of the area.	Appointed contractor and site manager.	Visual inspections of areas with possible dust emissions.	ECO monthly.	Throughout the operational phase.
				Correct speed will be maintained at the proposed area site.	Appointed contractor and site manager.	Regular speed checks.	Site manager monthly.	Throughout the operational phase.
				Vehicle maintenance must be conducted regularly to avoid excessive diesel fumes.	Appointed contractor and site manager.	Regular inspections.	ECO monthly.	During operational phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
Wetland destruction and loss of habitat.	Sensitive Landscapes.	Ensure that the drilling operation does not have detrimental impacts on the farms dams and identified seepage zone.	Maintain the current state of the wetlands within the area.	Operation of the drilling site will be limited to be more than hundred meters from the edge of the sensitive landscapes. The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands	Appointed contractor.	Inspection to ensure compliance with the action plan.	ECO monthly.	During operational phase.
Increased noise levels.	Noise aspects.	Ensure that the noise levels emanating from the operational sites will not have detrimental effects on the mine employees and surrounding communities/land owners.	The noise levels from the sites will be managed and measures will be taken to ensure that noise levels are below the National Noise Control Regulations, SANS10103:2008 guidelines.	Limit the maximum speed to 60 km/h or less, subject to risk assessment. Less noisy equipment will be used, the equipment will be kept in good working order and the equipment will be fitted with correct and appropriate noise abatement measures. Ensure that the employees are issued with earplugs and that they are instructed to use them. Educate employees on the dangers of hearing loss due to mine machinery noise.	Appointed contractor and site manager. Site manager. Appointed contractor.	Site checks regularly. Regular monitoring and site check. Use of earplugs will be checked and reported.	Site manager. Site manager. Site manager.	During operational phase. During operational phase. During operational phase.
Visual impacts on the surrounding communities and road users from the construction.	Visual aspects.	Ensure that the drilling operations do not result in detrimental visual impacts on surrounding properties, communities and road users.	Measures will be undertaken by the mine to ensure that the visual aspects from the site are complying with the relevant visual standards and objectives.	The land owner will be informed on the type of machinery and equipment to be used at the prospecting sites. Lighting will be conducted in manner that will reduce the impacts on visual aspects at night times.	Applicant and site manager. Appointed contractor.	The constructed perimeter berms will be inspected for compliance with the design specifications. Night time inspection of the site will be undertaken.	Mine Engineer on a monthly basis. The site manager once	During operational phase. During operational phase.
Damage or destruction of sites	Sites of archaeological and	Ensure that the operational activities does not have	The drilling operations will be undertaken in	The drilling sites will be away from any identified grave site or heritage	Appointed contractor.	The site will be monitored for any	ECO monthly.	Throughout the operational phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
with archaeological and cultural significance.	cultural importance.	detrimental impacts on the heritage sites.	compliance with the requirements of the National Heritage Resources Act, 1999 (Act 25 of 1999) and recommendations from the specialist.	sites. A hundred-meter buffer will be created between the sites and the proposed camp and drilling sites.		prospecting related damages on a regular basis.		
Safety, intrusion and livelihood impacts on the landowners and occupiers.	Socio-economic aspects.	Ensure that the drilling operation does not significantly disrupt the daily living and movements of the land owners and occupiers.	The mine will ensure that all safety standards are met and that access to landowners and occupiers are not detrimentally affected.	Announce any road closures and other disruptions and maintain roads used for the operation in good order. Keep communication with land owners and land occupiers open during the operational phase of the area. Ensure that negotiations on compensation are undertaken before the drilling programme can commence. This will include any other conditions that the landowner may deem necessary for the prospecting operation. Ensure that safety measures are implemented to prevent impacts on land owners and occupiers.	Appointed contractor and site manager. Applicant and site manager. Site manager.	Liaison with affected parties. Meetings with the landowners. Minutes of any meeting held with landowners and agreements will be recorded and filed. Regular checks and inspections.	Site manager as and when necessary. Site manager as and when meetings are held. Site manager.	Throughout the operational phase. Throughout the operational phase. Throughout the operational phase.
DECOMMISSIONING AND CLOSURE PHASE								
Removal of infrastructure and final rehabilitation of disturbed areas								
Compaction and contamination of soils within the rehabilitation site.	Soils.	Ensure that the soils in the vicinity of the rehabilitation site is not detrimentally impacted.	Rehabilitated areas will be maintained to comply with the closure objectives.	All vehicles and machinery used at the rehabilitation site will be kept in good working order. No repairs of vehicles or machinery will be conducted at the rehabilitation site unless it is emergency repairs, which will be conducted on protected ground.	Appointed contractor. Appointed contractor.	Vehicles and machinery will be inspected regularly and any oil incidences will be reported. All incidents of emergency repairs will be inspected and occurrence recorded.	Site manager will conduct the inspections monthly. Site manager.	Throughout the decommissioning and closure phases. Throughout the decommissioning and closure phases.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
				Movement of mine vehicles and machinery will be limited to demarcated routes, which will be rehabilitated when no longer in use.	Appointed contractor.	Rehabilitation site will be inspected to monitor areas with compaction or hydrocarbon contamination.	ECO will conduct the inspections monthly.	Throughout the decommissioning and closure phases.
Re-instatement of soil productivity, land capability, land use and topographical patterns.	Soils, Land Capability, Land Use and Topography.	Ensure that the rehabilitation of the sites re-instate the soil productivity, land capability, land use and topographical patterns	Rehabilitated areas will be maintained to comply with the closure objectives.	All infrastructure will be removed from the site in accordance to the rehabilitation plan.	Appointed contractor.	Removal of the infrastructure will be inspected.	Site manager will conduct the inspections.	During decommissioning phase.
Pollution of surface water environment.	Surface Water.	Ensure that the rehabilitation of the site does not have detrimental impacts on the surface water environment.	The surface water leaving the rehabilitation site will comply with the DWS target water quality parameters.	The site area will be rehabilitated to be free draining. Erosion protection measures such as the use of contour berms and repair of gullies will be undertaken until such time that the rehabilitated surfaces can be shown to be sustainable. Existing roads should be used where possible and new disturbed areas should be minimised.	Appointed contractor. Appointed contractor. Rehabilitation officer.	Progress of rehabilitation will be monitored. Areas where grass has not yet been established will be monitored for excessive erosion. Rehabilitation site will be inspected for misuse.	ECO will conduct monitoring of the rehabilitation annually.	Throughout the decommissioning and closure phases.
Air pollution from rehabilitation site.	Air quality.	Ensure that rehabilitation do not have detrimental impacts on air quality.	Decommissioning and rehabilitation of the site will be conducted in such a manner that the ambient air quality does not exceed the air quality standards.	Where necessary, wet suppression will be conducted at areas with excessive dust emissions. Vehicles and machinery will be well maintained. The traffic volumes and speed within the rehabilitation site will be controlled.	Appointed contractor. Site manager and appointed contractor.	Visual inspections of areas with possible dust emissions will be conducted Site inspections will be conducted.	ECO will conduct inspections monthly. Site manager will conduct inspections monthly.	Throughout the decommissioning phase. Throughout the decommissioning phase.
Generated noise from the	Noise.	Ensure that the rehabilitation activities do not have	Ensure that the noise from the rehabilitation activities do not exceed	Smaller or less noisy equipment should where possible be used when	Appointed contractor and site manager.	Regular site check.	Site manager.	Throughout the decommissioning phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions And Interventions	Responsibility For Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
rehabilitation site.		detrimental impacts on people.	the SANS 10103 Rating Level.	working near receptors. Equipment will be well maintained and fitted with the correct and appropriate noise abatement measures.	Site manager and appointed contractor.	Regular site check.	Site manager.	
Damage or destruction of sites with archaeological and cultural significance.	Sites of archaeological and cultural importance.	Ensure that the rehabilitation does not have detrimental impacts on heritage sites.	Should heritage sites be identified, rehabilitation in close proximity to the sites will not be damaged or destroyed by the rehabilitation activities.	A hundred-meter buffer will be maintained between any site and the rehabilitation site.	Appointed contractor and the site manager.	The sites will be monitored for any rehabilitation related damages.	ECO will monitor the site monthly.	Throughout the decommissioning phase.

6 FINANCIAL PROVISION

Section 24 P of NEMA requires an applicant applying for an environmental authorisation related to mining to comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts before the Minister responsible for mineral resources issues the environmental authorisation. The above-mentioned financial provision may be in the form of an insurance, bank guarantee, trust fund or cash.

Regulations pertaining to the financial provision for prospecting, exploration, mining or production operations (GNR 1147) were promulgated on the 20th of November 2015. National Treasure Minerals (Pty) Limited has undertaken the financial provision determination in line with the requirements of section 11 of the Regulations pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations (GNR 1147). The financial provision determination for the proposed area will be submitted with the final BAR and EMPR to the Department of Mineral Resources and Energy for their consideration.

6.1 Description of Closure Objectives and Extent to which they have been aligned to the described Baseline Environment

The closure objectives for the proposed area as detailed under section 4.1 of the EMPR, were determined in consideration of physical (infrastructure), biophysical (environmental) and socio-economic measures as well as alignment to the closure components provided by the Department of Mineral Resources and Energy (DMRE). See section 4.1 for the closure objectives.

6.2 Confirmation that the Environmental Objectives in relation to Closure have been Consulted with Landowners and Interested and Affected Parties

The draft BAR and EMPR was made available to the interested and affected parties during the public participation process for the proposed prospecting area. Note that the consultation of interested and affected parties includes the owners of the properties directly affected by the proposed prospecting area and owners of land immediately adjacent to the proposed prospecting area.

The above confirms that the land owners and interested and affected parties were consulted with regarding the environmental objectives in relation to the closure of the proposed prospecting area.

6.3 Rehabilitation Plan for the Proposed Area

In terms of Regulation 23 of NEMA EIA Regulations, 2014, an EMPR must address the requirements as determined in the regulations, pertaining to the financial provision for the rehabilitation, closure and post closure of the proposed operations. In view of the above, a rehabilitation plan must be provided to the DMRE in support of the financial provision determined for the proposed operations. Since no disturbance has results on site due to the proposed prospecting area no annual rehabilitation plan was compiled.

6.4 Compatibility of the Rehabilitation Plan with the Closure Objectives

The rehabilitation plan has been drafted to be compatible with the closure objectives.

6.5 DETERMINATION OF THE QUANTUM OF THE FINANCIAL PROVISION REQUIRED TO MANAGE AND REHABILITATE THE ENVIRONMENT

The financial pecuniary provision for Doornkloof Prospecting Area will be determined based on the requirements of Chapter 2.4.1 of the Guideline document for the evaluation of the quantum of closure-related financial provision provided by a Mine, revision 1.6, September 2004, DMRE. The financial provision for the first year is determined to the value of **R 57 676,00**, see Table 17 below.

6.6 METHOD OF PROVIDING FOR THE FINANCIAL PROVISION

According to Regulation 8 of the Regulations pertaining to the financial provision for prospecting, exploration, mining or production operations (GNR 1147), an applicant or holder of a right or permit must make financial provision by one or a combination of the following:

- financial guarantee from a bank registered in terms of the Banks Act, 1990 (Act No. 94 of 1990) or from a financial institution registered by the Financial Services Board as an insurer or underwriter;
- deposit into an account administered by the Minister responsible for mineral resources; *or*;
- contribution to a trust fund established in terms of applicable legislation.

National Treasure Minerals (Pty) Limited has opted to use a financial guarantee to provide for the determined quantum for financial provision

Table 17: Financial Provision for the proposed Doornkloof Prospecting Area

Doornkloof Prospecting Area- Financial Provision **CALCULATION OF THE QUANTUM**

Applicant: **National Treasure Minerals (Pty) Ltd** **Ref No.:** **NW 30/5/1/1/2/13540 PR**
Evaluator: **O. T. Shakwane** **Date:** **31/10/2022**

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	17.33	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	241.33	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	355.65	1	1	0
3	Rehabilitation of access roads	m2	200	43.19	1	1	8638
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	419.16	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	228.63	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	482.67	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	253019.03	1	1	0
7	Sealing of shafts adits and inclines	m3	0	129.56	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0.01	168679.35	1	1	1686.7935
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	210087.08	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	610192.47	1	1	0
9	Rehabilitation of subsided areas	ha	0	14124	1	1	0
10	General surface rehabilitation	ha	0.1	133622.5	1	1	13362.25
11	River diversions	ha	0	133622.5	1	1	0
12	Fencing	m	0	152.42	1	1	0
13	Water management	ha	0	50807.03	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	1	17782.46	1	1	17782.46
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
					Sub Total 1		41469.5035
1	Preliminary and General		4976.34042		weighting factor 2 1		4976.34042
2	Contingencies		4146.95035				4146.95035
					Subtotal 2		50592.79
					VAT (15%)		7082.99
					Grand Total		**57676**

7. MECHANISM FOR MONITORING COMPLIANCE WITH AND PERFOMAMCE ASSESSMENT AGAINST THE ENVIRONMENTAL MANAGEMENT PROGRAMME AND REPORTING THEREOF

7.1 INSPECTIONS AND MONITORING

During the impact assessment, potential impacts on the environment were identified. Mitigation measures were also specified for prevention and management of the impact so as to minimise their effect on the environment. This section will describe how the mine intends to ensure that the mitigation measures are being undertaken and that their effectiveness is proven.

A monitoring programme has been developed for the identified impacts and their mitigation measures. This monitoring programme will be undertaken and results thereof used to determine the effectiveness of the mitigation measures. The ECO will have an overall responsibility for ensuring that all monitoring is conducted according to the approved EMPR.

7.2 MONITORING COMPLIANCE WITH AND PERFORMANCE ASSESSMENT AGAINST THE ENVIRONMENTAL MANAGEMENT PROGRAMME AND REPORTING THEREOF

As part of the general terms and conditions for an environmental authorisation and in order to ensure compliance with the EMPR and to assess the continued appropriateness and adequacy of the EMPR, National Treasure Minerals (Pty) Limited will:

- Conduct monitoring on a continuous basis (see EMPR).
- Conduct performance assessments of the environmental management programme once in every two years.
- Compile and submit a performance assessment report to the minister in which compliance with the approved Environmental Management Programme is demonstrated.

The performance assessment report will as a minimum contain the following:

- Information regarding the period applicable to the performance assessment
- The scope of the assessment.
- The procedure used for the assessment.
- The interpreted information gained from monitoring the approved environmental management programme.
- The evaluation criteria used during the assessment.
- The results of the assessment.
- Recommendations on how and when non-compliance and deficiencies will be rectified.

7.3 PROCEDURE FOR ENVIRONMENTAL RELATED EMERGENCIES AND REMEDIATION

An environmental emergency is an unplanned event, which has the potential to result in a significant adverse environmental impact and/or could result in legal liability to **National Treasure Minerals (Pty) Limited** in terms of environmental legislation requirements. The following define most likely potential environmental emergencies:

- Hydrocarbon spills or leaks
- Surface fires, including veld fires
- Transportation accident

National Treasure Minerals (Pty) Limited has developed procedures for environmental related emergencies for the Doornkloof Prospecting Area, which is explained in more detail below.

Introduction

This procedure describes the process to be followed to report and deal with emergencies, which may occur on the prospecting site. An effective, comprehensive, well-considered and tested environmental emergency preparedness and response plan has the potential to save lives, prevent unnecessary damage to company and other property and to manage environmental risk.

This standard procedure aims is to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them. Below are the objectives of the above-mentioned procedure:

- To ensure quick and controlled response to environmental emergencies through the use of correct personnel and equipment.
- To prevent incidents from becoming more extensive through the timeouts contact and arrival of trained personnel on site.
- To establish a management mechanism from which a range of safety, environmental and health issues can be dealt with should they arise.

Purpose of the procedure

To provide guidance to all drilling crew in the event of an environmental emergency at Doornkloof prospecting area or related to its activities. This procedure is developed so as to provide guidance to ensure that:

- Danger to the environment, personnel, contractors and non-employees are minimized.
- Legal liability is managed and minimised.
- Public relations are effectively managed during and following an emergency.
- Reporting is effective and corrective/follow-up actions are implemented.

This procedure contains information relevant to all drilling crew of the prospecting site. It is the responsibility of all employees to familiarize themselves with the contents of this procedure. Furthermore, site manager should ensure that all contractors have access to this procedure and the requirements contained herein.

Legal requirements

The following below listed legislations were identified for the emergency response activities in the mining industry. The legislation requires that governmental department be kept informed of incidents and accidents:

- Regulation 51 of Regulations under the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002) – PROCEDURE FOR ENVIRONMENTAL RELATED EMERGENCY AND REMEDIATION
- Mine Health & Safety Act 29 of 1996 – MANNER OF REPORTING AND KEEPING OF INFORMATION REGARDING INCIDENTS & EMERGENCIES
- Occupational Health & Safety Act 85 of 1993 – EMPLOYEE REQUIREMENTS TO REPORT INCIDENTS WHERE ACTIVITY HAS OCCURRED

Responsibilities

Site Manager

National Treasure Minerals (Pty) Limited is responsible for the safety and well-being of employees working at Doornkloof prospecting area as well as the protection of the environment from unnecessary negative impact. The Site Manager has a responsibility to initiate a warning process should an emergency occur or should something at the prospecting site deteriorate in an uncontrolled manner presenting a risk to employees, the public or the environment.

Site Manager

It is the responsibility of the Site Manager to appoint a person or persons to review and audit the activities as covered by the scope of this Procedure. The Site Manager or his appointed representative shall ensure that the audits are being conducted systematically and at regular defined intervals. The Site Manager shall further ensure that the person nominated to perform audits of the emergency system, are given all the necessary assistance and facilities to conduct the task effectively.

Local Government

Local governments have the responsibility to warn residents of a hazardous situation, these warnings must be based on information provided by the site manager.

All employees, contractors and other relevant parties

All employees, contractors and other relevant parties should ensure that they are familiar with this procedure.

Description of Possible Emergencies and Remedial actions.

The following define most likely potential environmental emergencies. The Site Manager will be contacted in all emergencies. In all the cases the surrounding area must be cordoned off in a safe and efficient way. Emergency equipment for direct incidents must be available on the prospecting site at all times.

Hydrocarbon spills,

These are typically spillages or leaks of hydrocarbon liquids from containers and pipelines. The hydrocarbon liquids involved in these emergencies are diesel, new and used oils and paint. The spillages of hydrocarbon liquids may potentially contaminate the groundwater regime, surface water and soils over the affected areas. These, if not remediated properly, may have permanent detrimental effects environmental components.

All hydrocarbons will be stored in well enclosed containers. Emergency telephone numbers with contact persons will be placed near the containers. Credible company will be called, if a carbon spill occurs, they will assess the situation and take the necessary steps.

Transportation accident,

The drilling crew uses various machinery and vehicles such as drill rig and light vehicles for the transportation of material around the prospecting site. During an accident, while transporting these materials, both the material and the liquids within the vehicles may cause detrimental damage to the environment. Liquids will include diesels, petrol and oils from the vehicles.

Speed limits will be place around the prospecting site. The employees will be made aware of the speed limits and the reasons for having them. The following procedure will be implemented.

- Spillages will be rectified as soon as possible.
- Type of spillage must be identified.
- Clean-up will be done by credible company.
- If outside the prospecting site, the traffic department will be notified.

Surface fires, including veld fires.

These include any fires within the Doornkloof Prospecting Area. These fires may emanate either from the prospecting site or outside the prospecting site. The fires are considered emergency situations since they put lives of employees at risk and result in the destruction of environmental components such as natural vegetation (grasses, trees), animal life (wild and domestic livestock) and air quality. It is for this reason that fires have been identified as a potential emergency situation.

- Fire fighting equipment will always be kept at the prospecting site ready, in a good working condition and at an accessible location. Correct fire extinguishers will be used to extinguish the fire. Note that no water on electrical and liquid based fires will be used. The employees will be trained on dealing with fire situation. First aid equipment will be made available at all times. Site Manager will assemble the fire team and combat the fire.
- If the fire seems to go out of control, the Fire Brigade from the nearby town will be contacted. Doornkloof prospecting area will establish a working agreement with the Fire Brigade from the nearby town (Delmas) to make themselves available at any time in a case fires are out of control.
- All affected farmers will be contacted.

At any prospecting site and at any works:

a) No person shall place, throw or leave, or cause or permit to be placed, thrown or left, any naked light or flame or any burning lighting torch, match, cigarette, tobacco, paper or other burning material on or near any combustible material or inflammable substance where this may cause danger from fire or explosion;

b) No waste material of a combustible nature shall be stored anywhere in quantity sufficient to create a fire hazard;

b) no welding, flame-cutting or flame-heating shall take place unless adequate means are immediately available for extinguishing any fire which may result from such operation;

c) on completion of any welding, flame-cutting or flame-heating, an examination shall be carried out by a competent person to ensure that no fire will result from such operation;
d) all machinery shall be so constructed, installed, operated and maintained as to prevent as far as practical, dangerous heating.

Notification process

There are six main steps in managing an emergency, from the identification of the situation to final close off. They are as follows:

- Find and identify
- Ensure human safety
- Reporting
- Containment and clean-up
- Corrective action
- Monitoring

Emergency equipment and supplies

There will be a directory of emergency equipment and other supplies on site as well as person/s responsible for the equipment.

Communication systems

Communication is critical during an emergency on site so that efforts to manage the situation are coordinated to produce the desired results. The communication channels that will be available on site will include:

- Internal phone line system
- Hand held radios
- Cellular phone

Training

The site manager will ensure that employees are trained on emergencies that might occur at Doornkloof prospecting area.

Method of emergency activity identification

During the prospecting operation at the said site, the site manager will ensure that measures are put in place to ensure that other possible environmental emergency activities are identified.

Review and revision

During the course of the prospecting operation a number of emergency response drills will be carried out and recorded (minimum of one per every year). Emergency response drills will normally be carried out during operational hours to best evaluate the response and involve the highest number of employees. These are at the discretion of the Site Manager and may involve one or more of the emergency activities listed in this standard procedure. Emergency response drills should not be of the same type unless significant problems were experienced with the previous drill.

Regular auditing and questioning of the key personnel involved in emergency response will also be conducted. This will take the form of planned task observations (PTO). It is the responsibility of the Site Manager to undertake these PTO’s on a regular basis and record the response.

Information from PTO's and drills will be collated and assessed. Alterations and modifications to the Emergency Response Procedure will also be conducted after the response drill evaluation. This task will be performed in co-ordination with the Site Manager to which the drill applies.

7.4 ENVIRONMENTAL AWARENESS PLAN

In terms of section 39(3)(c) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), Doornkloof prospecting area must compile and implement an environmental awareness plan. The above-mentioned environmental awareness plan must describe the manner in which the site manager (in this case Doornkloof prospecting area) will inform their employees of any environmental risk which may result from their work and the manner in which the environmental risks will be addressed to avoid pollution or/and degradation of the environment. This document, therefore concerns the details of the environmental awareness plan for Doornkloof prospecting area as required by the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

In view of the above, Doornkloof prospecting area has developed an environmental awareness plan for the proposed Doornkloof prospecting area, which is explained in more detail below.

Note that the responsible person will revise these environmental awareness procedures from time to time. The date of commencement of the revised procedure will always be indicated to prevent confusion, in this case after the issuing of prospecting right to Doornkloo f prospecting area.

This Environmental Awareness (Standard Training Procedure) sets out the training objectives regarding to environmental awareness. It is a stand-alone procedure, which serves to improve awareness, training and competency in the environmental field. It contains no detail on the actual training initiatives but rather serves to ensure that a responsible person is appointed to deal with and increase environmental awareness on the prospecting site.

Scope

This Environmental Training Standard Procedure sets out the prospecting site's training objectives regarding environmental awareness. It is a stand-alone procedure, which serves to improve awareness, training and competency in the environmental field. It contains no detail on the actual training initiatives but rather serves to ensure that a responsible person is appointed to deal with and increase environmental awareness on the prospecting site.

Objectives

The following are the objectives set for this standard procedure:

- To explain and aid the personnel involved in training with regards Environmental Management System (EMS);
- To clarify the EMS training and ensure that all employees are correctly instructed with regards to the environment.
-

Safety risks associated with activity

There were no hazards identified in applying this standard procedure.

Responsibilities

In the case where there is no training department on site, a responsible person should be identified (Site manager, Environmental Officer or Consultant) to ensure that the objective of this procedure is met.

Legal requirements

The following legislation and standards apply to this Standard Procedure:

* Employment Equity Act 55 of 1998 – AREAS WHERE EMPLOYMENT EQUITY ARE DEFINED, INCLUDING TRAINING & DEVELOPMENT.
* National Environmental Management Act 77 of 1998 – RECOMMENDATIONS FOR INSTITUTIONAL CO-OPERATION.
* Minerals and Petroleum Resources Act, 2002 (Act 28 of 2002) – DEVELOPMENT OF AN ENVIRONMENTAL AWARENESS PLAN.

Induction Programme

An Induction Programme, which will include environmental awareness programme will be established for Doornkloof prospecting area. During the training sessions various topics will be discussed such as, but not limited to: Water Pollution Prevention, Good Environmental Housekeeping, etc. Through the Induction Programme, the site manager, or any other responsible appointed person shall ensure that all staff receives training in:

Administrative requirements and procedures, which will include the Environmental Emergency.

Procedures

Resource conservation and environmental reporting and general environmental awareness for prospecting site related environmental issues.

All employees (including contractor employees) will undergo induction. Doornkloof prospecting area induction includes training and awareness on environmental issues on the drilling site and is compulsory for all new employees. The induction programmes will as be mentioned above, have an environmental management component. On an annual basis the environmental section of the induction gets updated to ensure that it is up to date. Consideration should be given to:

- Significant environmental impacts as identified in the EMP.
- Procedures: environmental awareness and emergency procedures.
- Trends in incidents.
- Trends in audit findings.

Trainee needs

The identification of environmental training and environmental awareness needs are derived from an analysis of the type of role different categories of employees play at Doornkloof prospecting area. The following categories are considered, viz:

- Site Management.
- Supervisors.
- Operators.
- Visitors and contractors.

Each of these categories has different responsibilities and therefore has different knowledge requirements and environmental awareness training needs to obtain that knowledge.

Training Planning

Identified and agreed training needs shall be included in budgets. Course attendance (other than at the internal induction courses) shall be scheduled on the basis of the importance of task contribution to the maintenance, effectiveness and improvement of the objectives.

General environmental awareness training

General awareness training will be offered to operators, processors during the safety toolbox talks. This will be conducted on rotational basis. New environmental awareness topics are determined and new topics are introduced after all the shifts have received training/awareness on the current topic. The following will be undertaken to ensure that the above awareness training is conducted:

- A monthly environmental awareness topic for discussion will be distributed to the prospecting site. These topics will be discussed at the safety toolbox talks, by SHE (Safety, Health and Environmental officer) site manager /Environmental officers if available.
- The topics will also be displayed on the notice boards of the prospecting site.
- Ad hoc environmental awareness sessions to the prospecting site will be conducted on request. The presentations will focus on the environmental issues relevant to individual tasks.

Job specific environmental awareness training

Job specific training will be developed to address urgent training needs as identified /required. The training material will focus on the following:

- Waste prevention and control (implementation of the waste management procedure).
- Hydrocarbon and chemical spill reporting and clean up.
- Storing and handling of chemicals.
- Rehabilitation.

Supervisory staff within specific drilling site will be equipped with the necessary knowledge and information to guide their employees on environmental aspects applicable in performing a specific task.

Competency training

Site manager (training official/environmental officer if available) is responsible for the environmental competency and awareness training of middle management and supervisors. This training will be conducted on both a one-to-one basis and through workshops. If required, external organizations may be requested to provide training to selected employees (e.g., EMP auditing).

Competence and the effectiveness of training and development initiatives will be determined through the following:

- Trend analysis and reporting
- Analysis of work areas during visits and audits
- Trend analysis of monthly incidents (or zero tolerance if available) as recorded per prospecting site.

Certification

Photocopies of certificates issued after completion of a training course shall be maintained in the staff member’s file and Training Department’s records.

Records

Environmental awareness and training records will be kept at a safe and accessible place on site.

7.5 UNDERTAKING TO COMPLY

I, ..., the undersigned and duly authorised thereto by **National Treasure Minerals (Pty) Limited** have studied and understand the contents of this document in its entirety and hereby duly undertake to adhere to the conditions as set out therein including the amendment(s) agreed to by the Regional Manager.

Signed at .....……..... this.....day of…….....20.....

.....

Signature of applicant Designation

APPROVAL

Approved in terms of Section 39(4) of the Mineral and Petroleum Resources Development Act, 2002 (Act 29 of 2002)

Signed at…… this.....day of…….....20.....

.....……..

REGIONAL MANAGER

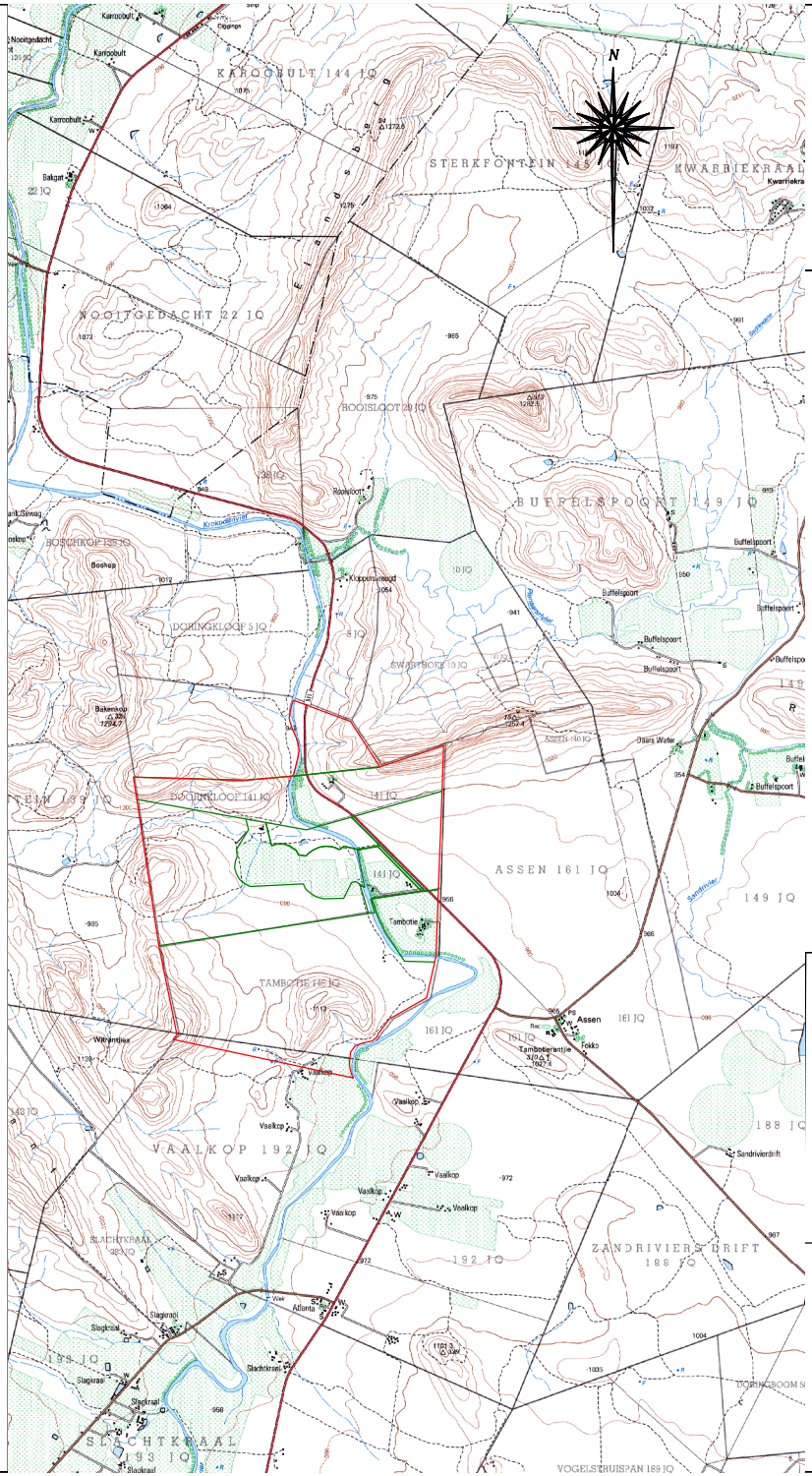
REGION……

Appendix A

Regulation 2 (2) plan

PROSPECTING CO-ORDINATES WG 27°

POINTS	LAT	LONG
A	-25.1232229	27.561597
B	-25.1234781	27.5614715
C	-25.1241351	27.5612771
D	-25.1250071	27.5610827
E	-25.1256834	27.5609867
F	-25.1261919	27.5611098
G	-25.1273711	27.5615375
H	-25.1281597	27.5619468
J	-25.1288584	27.5622776
K	-25.129613	27.5624462
L	-25.130272	27.5625299
M	-25.1311971	27.5623319
N	-25.1326855	27.5619119
P	-25.1337513	27.5616514
Q	-25.1343598	27.5542534
R	-25.1339915	27.5372772
S	-25.1370594	27.5377914
T	-25.1573572	27.54124
U	-25.1696576	27.5440864
V	-25.1703443	27.5435076
W	-25.1755626	27.5709985
X	-25.1754818	27.5709263
Y	-25.1749535	27.5706717
Z	-25.1740519	27.5704413
A1	-25.1736043	27.5703693
A2	-25.1731249	27.5704338
A3	-25.1720193	27.5705463
A4	-25.1711184	27.571241
A5	-25.1707269	27.5724241
A6	-25.1704313	27.5738356
A7	-25.1698448	27.5745563
A8	-25.1694467	27.5747425
A9	-25.1673944	27.5764071
A10	-25.1643982	27.5821004
A11	-25.1594498	27.5833017
A12	-25.1585838	27.5835119
A13	-25.1493734	27.5838347
A14	-25.1357813	27.5843109
A15	-25.1294269	27.5845336
A16	-25.1324164	27.5748157
A17	-25.126147	27.570313
A	-25.1232229	27.561597



NATIONAL TREASURE MINERALS (PTY) LTD REG NO: 2016/265134/07

APPLICATION FOR PROSPECTING RIGHT

Plan compiled in accordance with
Regulation 2(2) of the Mineral & Petroleum
Resources Development Act 2002
(ACT 28 of 2002)

Scale 1 : 2 900

LEGEND

PROSPECTING RIGHT AREA

National Freeway; National Route
Arterial Route
Main Road
Secondary Road; Bench Mark
Other Road; Bridge
Track and Hiking Trail
Railway; Station or Siding
Other Railway; Tunnel
Embankment; Cutting
Power Line
Built-up Area
Buildings; Ruin
Post Office; Police Station; Store
Place of Worship; School; Hotel
Fence; Wall
Windpump;Monument
Communication Tower
Mine Dump; Excavation
Trigonometrical Station; Marine Beacon
Lighthouse and Marine Light
Cemetery; Grave
International Boundary and Beacon
Provincial Boundary
Game, Nature Reserve & State Forest Boundary
Perennial River
Perennial Water
Non-perennial River
Non-perennial Water
Dry Water Course
Dry Pan
Marsh and Vlei
Pipeline (above ground)
Water Tower; Reservoir; Water Point
Coastal Rocks
Prominent Rock Outcrop
Erosion; Sand
Woodland
Cultivated Land
Orchard or Vineyard
Recreation Ground
Row of Trees

The figure lettered A-B4 AND A represent a Prospecting Right area in extentof approximately 1933.10 ha, comprising of portions 4,8,25,26,33,37,37 of the farm DOORNKLOOF 141 JQ, Remainder portion of the farm TAMBOTIE 146 JQ, portion of Remainder portion of the farm TAMBOTIE 961 JQ, Located 61.38km North of the town Brits, in the Magisterial district of BRITS for which NATIONAL TREASURE MINERALS (PTY) LTD REG NO. 2016/265134/07 has applied for a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002, (Act 28 of 2002), but subject to Regulation 17 of the Mine Health and Safety Act, 1996 (Act 29 of1996), excluding any area within 100 meters of any public road, railway, cemetery, residential area or public area.

SIGNED: .....
REGIONAL MANAGER
NORTH WEST PROVINCE

SIGNED: .....
NATIONAL TREASURE MINERALS (PTY) LTD
Reg No: 2016/265134/07

XAKWA
TECHNICAL SERVICES

Contact : 012 472 0328
Email : info@xakwa.com
tiisetso@xakwa.com

Address : 175 Corobay
Waterkloof Glen
0010

Appendix B

Deeds list of the direct farms

Farm List

windeed
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Date Requested 2021/08/26 16:08
Deeds Office PRETORIA
Registration Division JQ
Farm Name -
Farm Number 141
Remaining Extent NOT SELECTED

PORTION LIST

Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
0	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
1	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
2	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
3	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
4	FOURIE DANIEL JOHANNES	T12992/1990	1990/02/27	
5	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
6	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
7	FOURIE DANIEL JOHANNES	T12992/1990	1990/02/27	
8	FOURIE DANIEL JOHANNES	T12992/1990	1990/02/27	
9	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
10	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
11	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
12	MANNGWE MINING PTY LTD	T75061/2016	2016/09/15	
13	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
14	J P GROBLER CONSTRUCTION & PLANT PTY LTD	T3750/2018	2018/01/26	
15	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
16	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
17	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
18	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
19	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
21	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
22	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
23	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
24	JOHAN GROBLER FAMILIE TRUST	T136314/2007	2007/10/04	
26	L W BOTHA FAMILIE TRUST	T53049/2013	2013/07/18	
41	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
42	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-

Printed: 2021/08/26 16:10

DISCLAIMER

This report contains information gathered from the WinDeed database and we do not make any representations about the accuracy of the data displayed nor do we accept responsibility for inaccurate data. LexisNexis will not be liable for any damage caused by reliance on this report and for legal purposes encourage validation on ownership details with the Deeds Office. This report is subject to the terms and conditions of the WinDeed End User Licence Agreement (EULA).

Printed: 2021/08/23 16:30

Farm List

windeed
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Date Requested	2021/08/23 16:29
Deeds Office	PRETORIA
Registration Division	JQ
Farm Name	-
Farm Number	146
Remaining Extent	NOT SELECTED

PORTION LIST

Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
0	JOHAN GROBLER FAMILIETRUST	T99821/2001	2001/09/12	
1	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-

Printed: 2021/08/26 17:10

WinDeed Database Deeds Office Property

windeed
A LexisNexis® Product

JQ, 961 (PRETORIA)

GENERAL INFORMATION

Date Requested	2021/08/26 17:09
Deeds Office	PRETORIA
Information Source	WINDEED DATABASE
Reference	-

PROPERTY SEARCH DETAILS

Property Type	FARM
Registration Division	JQ
Farm Number	961

THERE IS NO INFORMATION AVAILABLE THAT MATCHES YOUR SEARCH CRITERIA.

Appendix C

National Web Based Environmental Screening Tool Report

SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE ENVIRONMENTAL SENSITIVITY

EIA Reference number: NW 30/5/1/1/2/ 13540 PR

Project name: Doornkloof Prospecting Area

Project title: Doornkloof Prospecting Area

Date screening report generated: 31/10/2022 14:36:21

Applicant: National Treasure Minerals (Pty) Ltd

Compiler: Geovicon Environmental (Pty) Ltd

Compiler signature:

.....

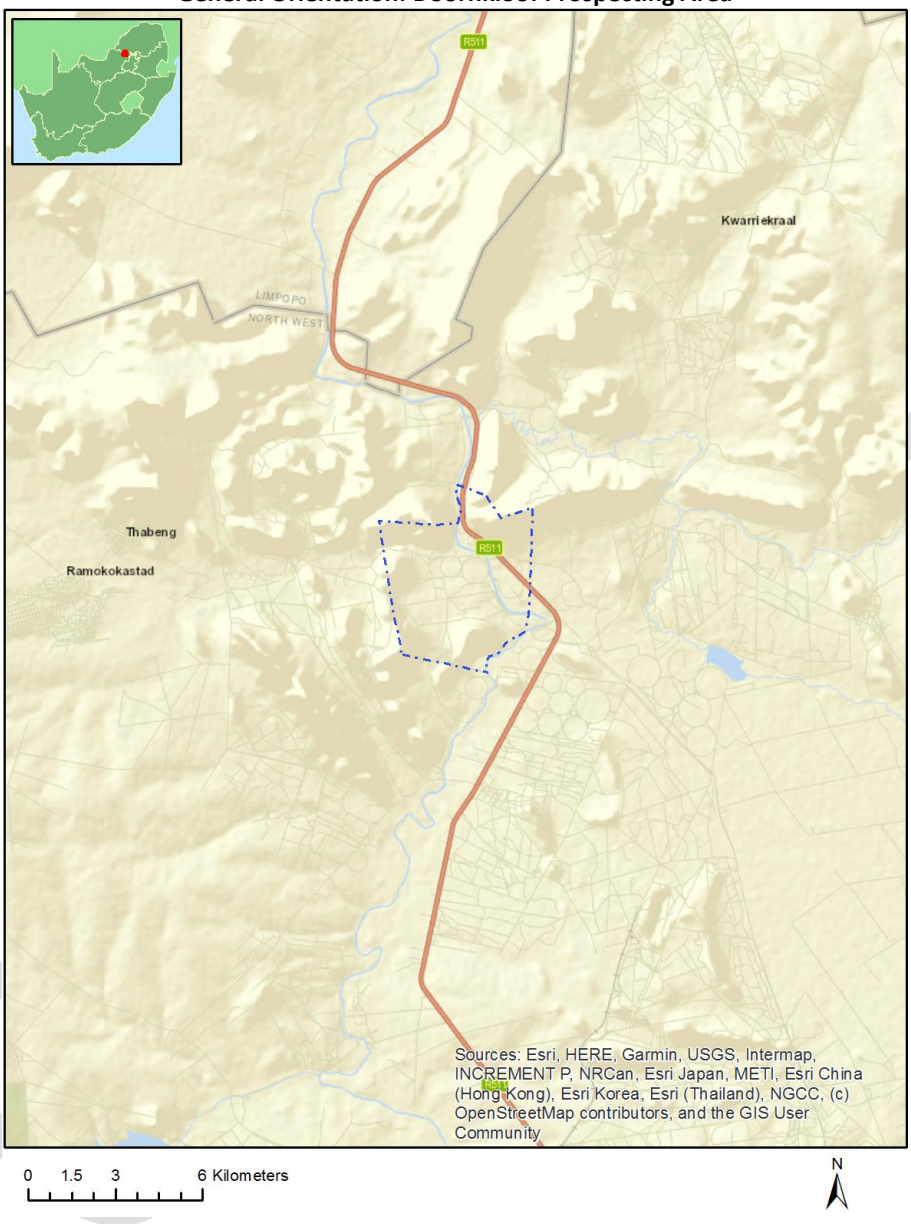
Application Category: Mining|Prospecting rights

Table of Contents

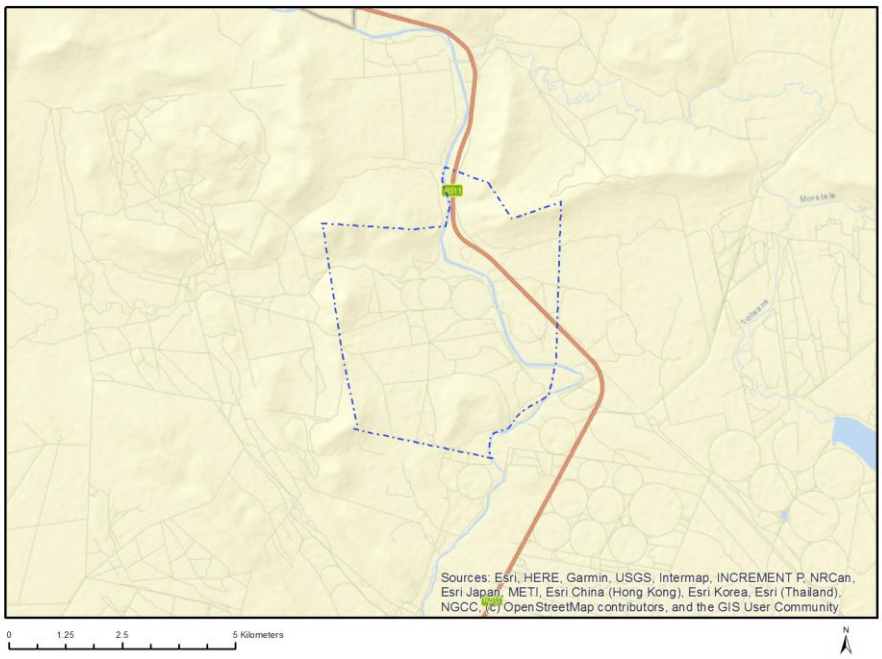
Proposed Project Location

Orientation map 1: General location

General Orientation: Doornkloof Prospecting Area



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1		146	0	25°9'17.71S	27°34'46.94E	Farm
2	TAMBOTIE	961	0	25°9'52.55S	27°33'39.25E	Farm
3	DOORNKLOOF	141	0	25°8'17.76S	27°33'27E	Farm
4	DOORNKLOOF	141	26	25°8'33.62S	27°34'48.25E	Farm Portion
5	DOORNKLOOF	141	36	25°7'49.51S	27°33'47.09E	Farm Portion
6	DOORNKLOOF	141	58	25°7'49.44S	27°33'2.72E	Farm Portion
7	TAMBOTIE	961	0	25°9'47.24S	27°33'39.23E	Farm Portion
8	DOORNKLOOF	141	35	25°8'12.54S	27°33'57.18E	Farm Portion
9	DOORNKLOOF	141	57	25°8'1.3S	27°34'5.02E	Farm Portion
10		1015	0	25°9'4.44S	27°34'42.09E	Farm Portion
11	DOORNKLOOF	141	25	25°8'32.13S	27°33'57.37E	Farm Portion
12	DOORNKLOOF	141	34	25°8'51.53S	27°32'51.35E	Farm Portion
13	DOORNKLOOF	141	33	25°8'44.77S	27°33'57.47E	Farm Portion
14	DOORNKLOOF	141	37	25°8'44.88S	27°34'38.18E	Farm Portion

Development footprint[1] vertices:
No development footprint(s) specified.

[1] "development footprint", means the area within the site on which the development will take place and incudes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	14/12/16/3/3/1/969	Solar PV	Approved	27.3
2	14/12/16/3/1/969	Solar PV	Approved	27.3

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is: **Mining|Prospecting rights**.

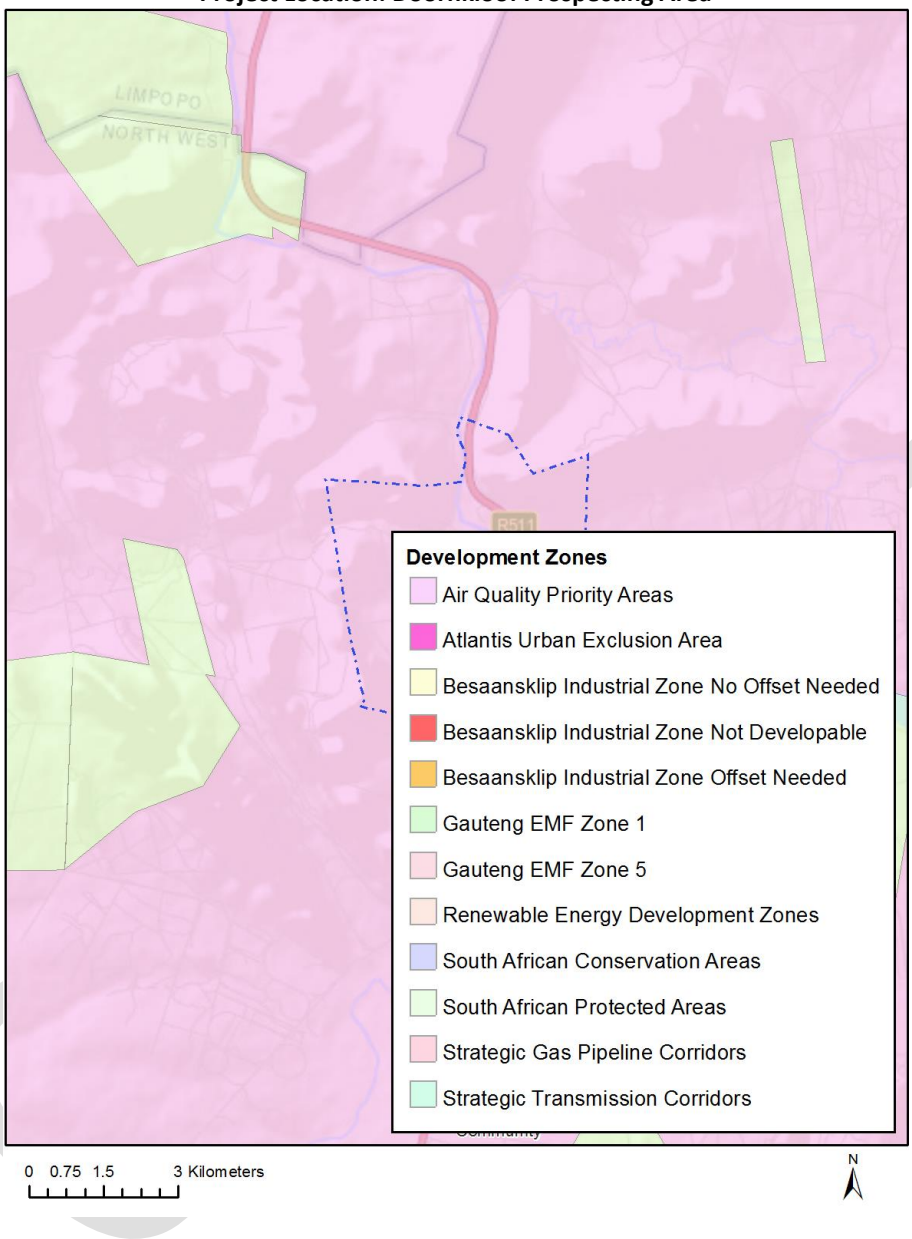
Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

Incentive, restriction or prohibition	Implication
Air Quality-Waterberg-Bojanala Priority Area	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/gg39489_nn1207a.pdf

Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones

Project Location: Doornkloof Prospecting Area



Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme	X			
Animal Species Theme		X		

Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme			X	
Defence Theme				X
Paleontology Theme	X			
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

Specialist assessments identified

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

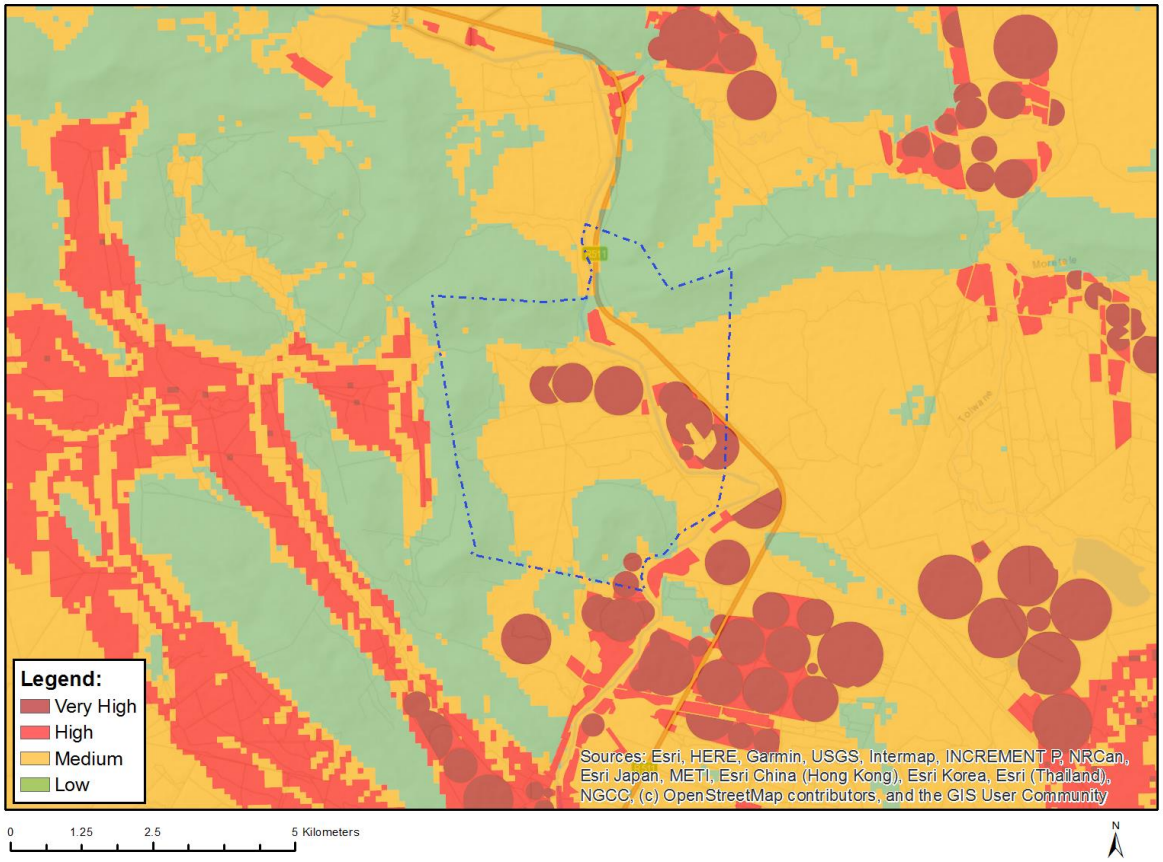
No	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf
6	Noise Impact Assess	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol.pdf

	ment	
7	Radioactivity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
8	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
9	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

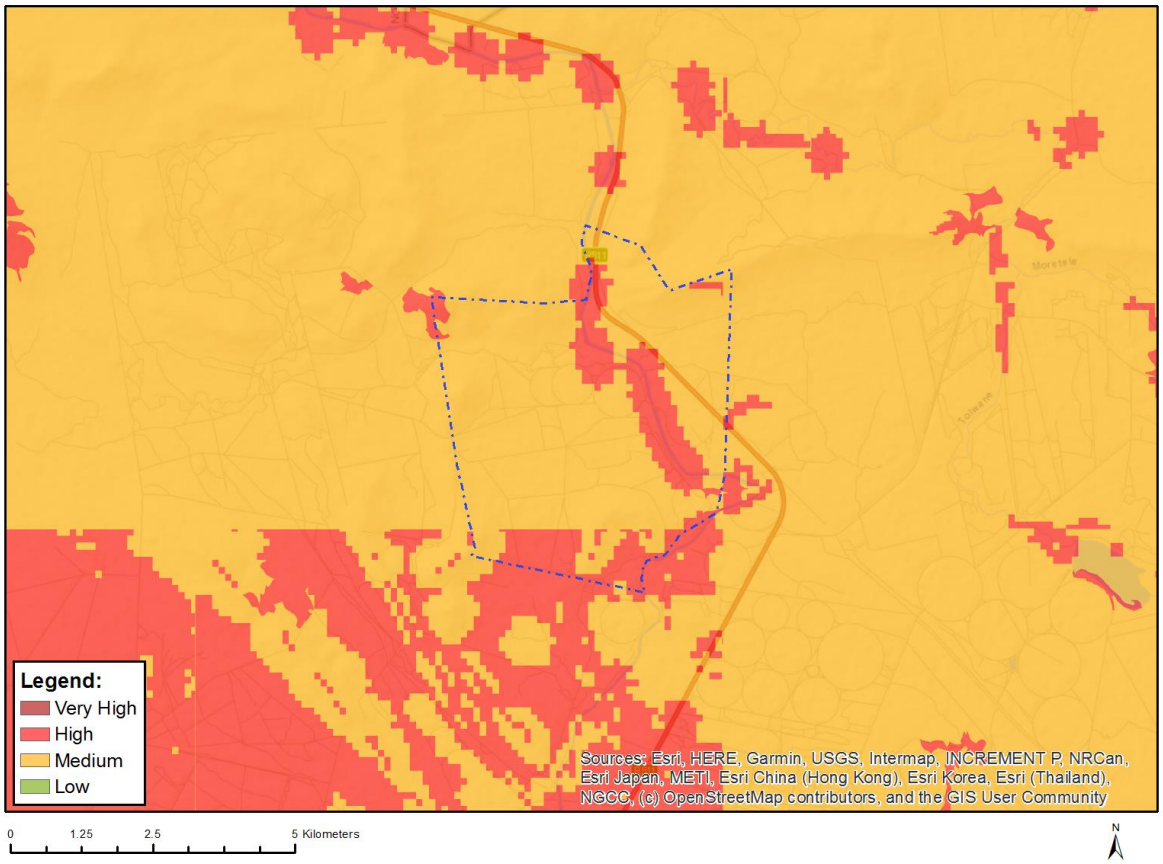


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Very High	Pivot Irrigation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Very High	Pivot Irrigation;Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

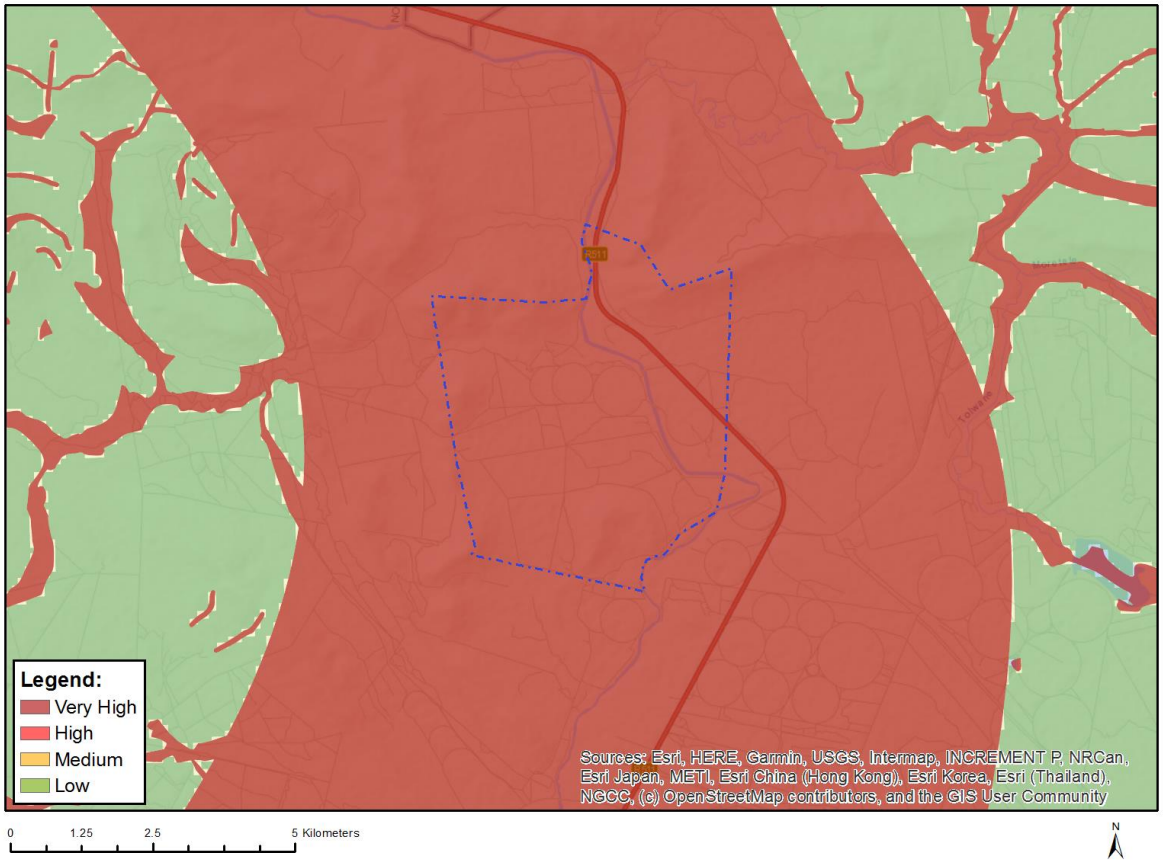
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Podica senegalensis
High	Aves-Circus ranivorus
High	Aves-Ciconia nigra
High	Aves-Aquila rapax
High	Aves-Mycteria ibis
High	Mammalia-Hippopotamus amphibius
High	Mammalia-Redunca fulvorufula fulvorufula
Medium	Aves-Aquila rapax
Medium	Aves-Circus ranivorus
Medium	Aves-Ciconia nigra
Medium	Aves-Hydroprogne caspia
Medium	Aves-Sagittarius serpentarius
Medium	Sensitive species 5

Medium	Mammalia-Crocidura maquassiensis
Medium	Mammalia-Dasymys robertsii
Medium	Mammalia-Lycaon pictus
Medium	Reptilia-Kinixys lobatsiana

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

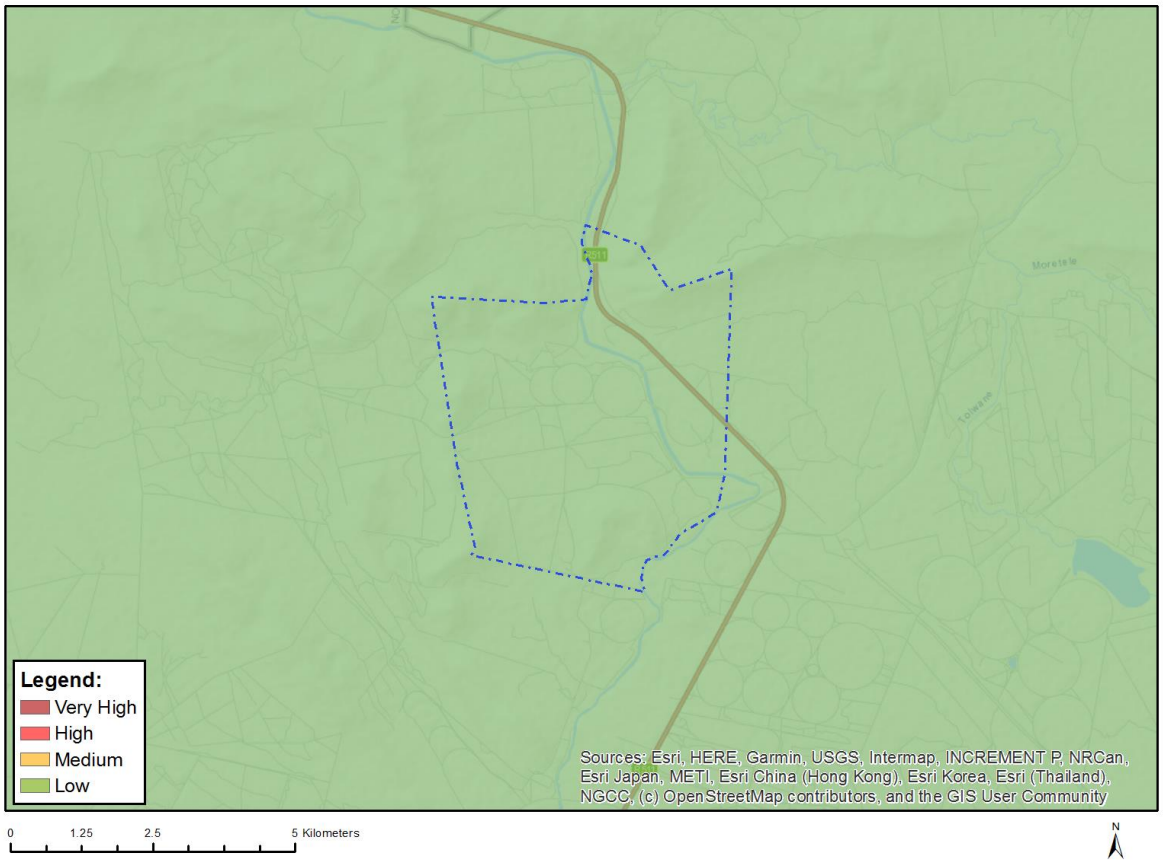


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	Aquatic CBAs
Very High	Strategic water source area
Very High	Wetlands and Estuaries

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

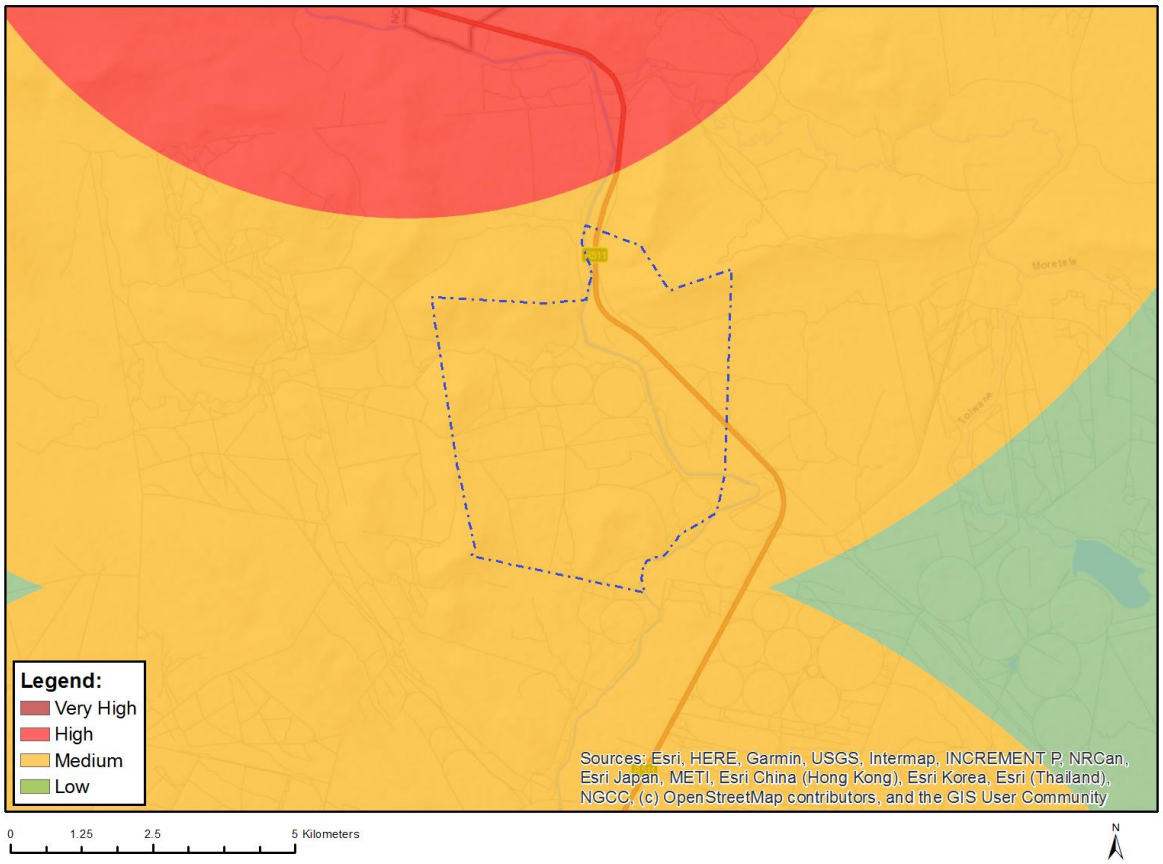


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

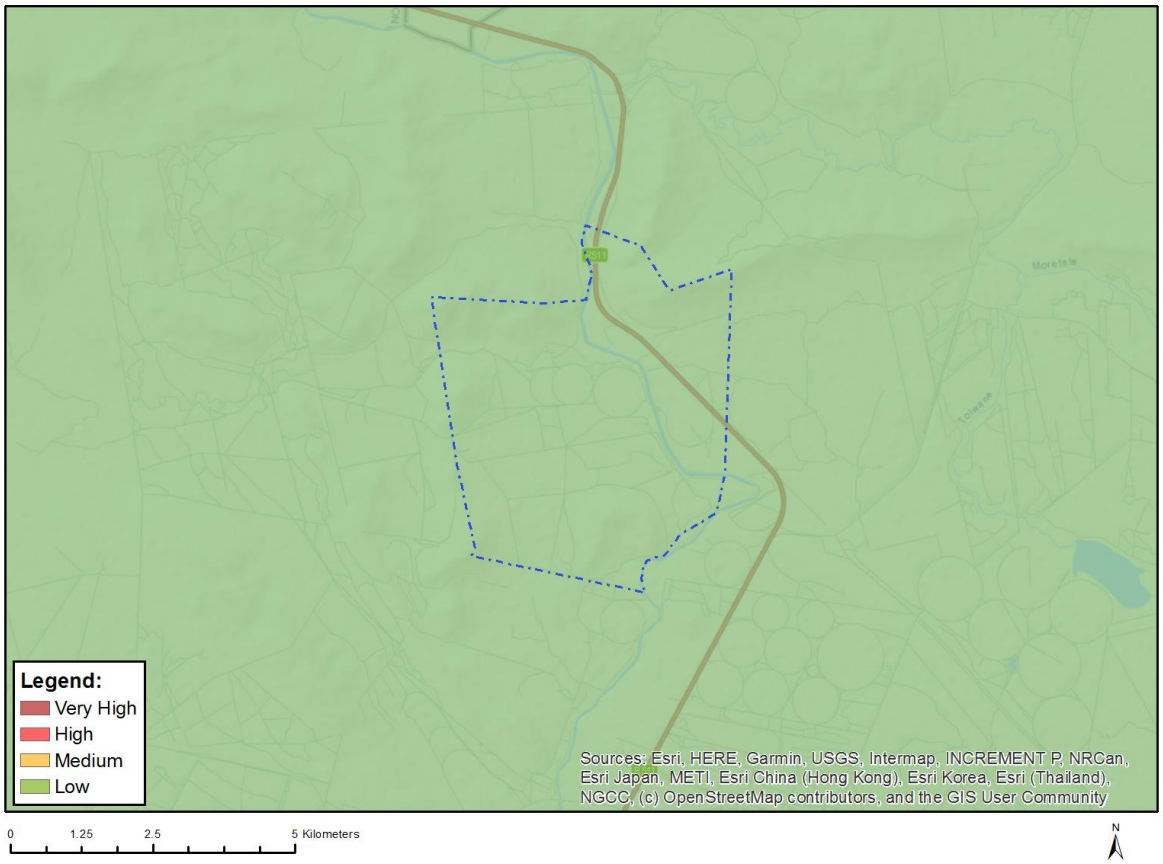


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Between 8 and 15 km of other civil aviation aerodrome

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

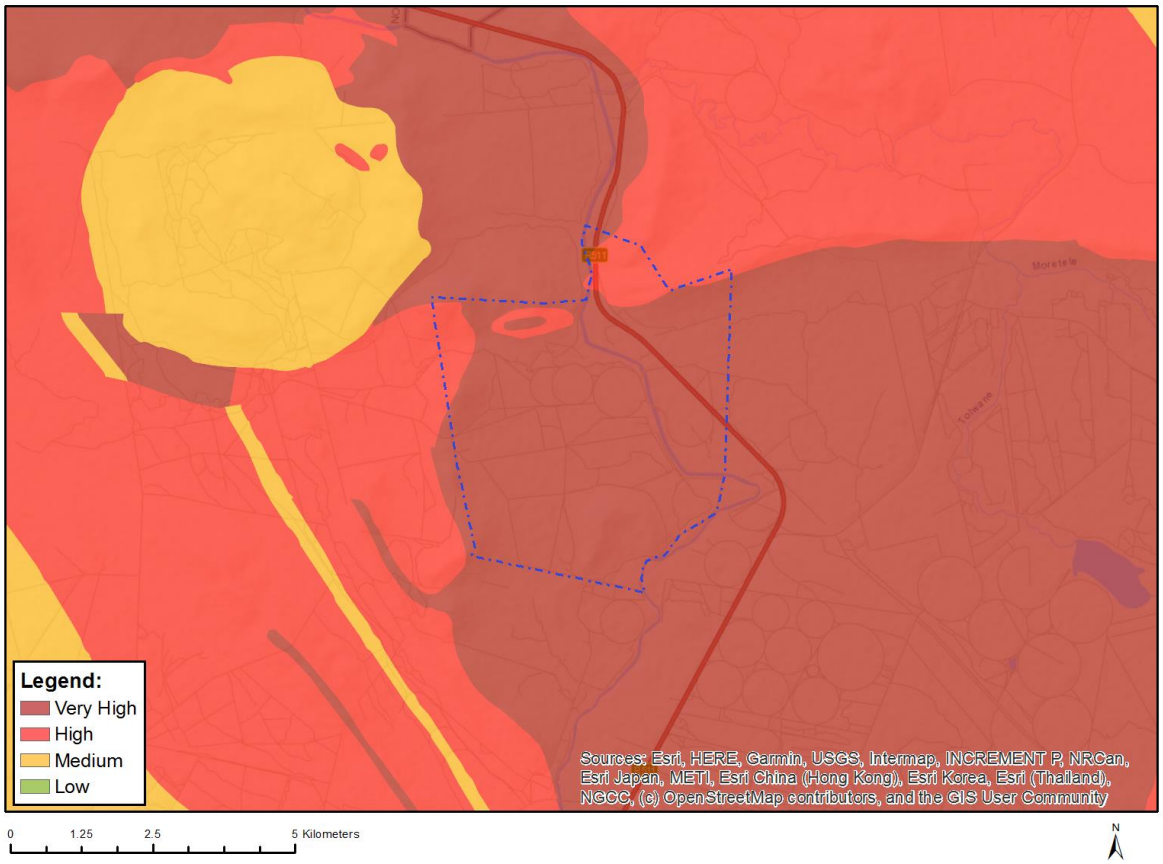


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

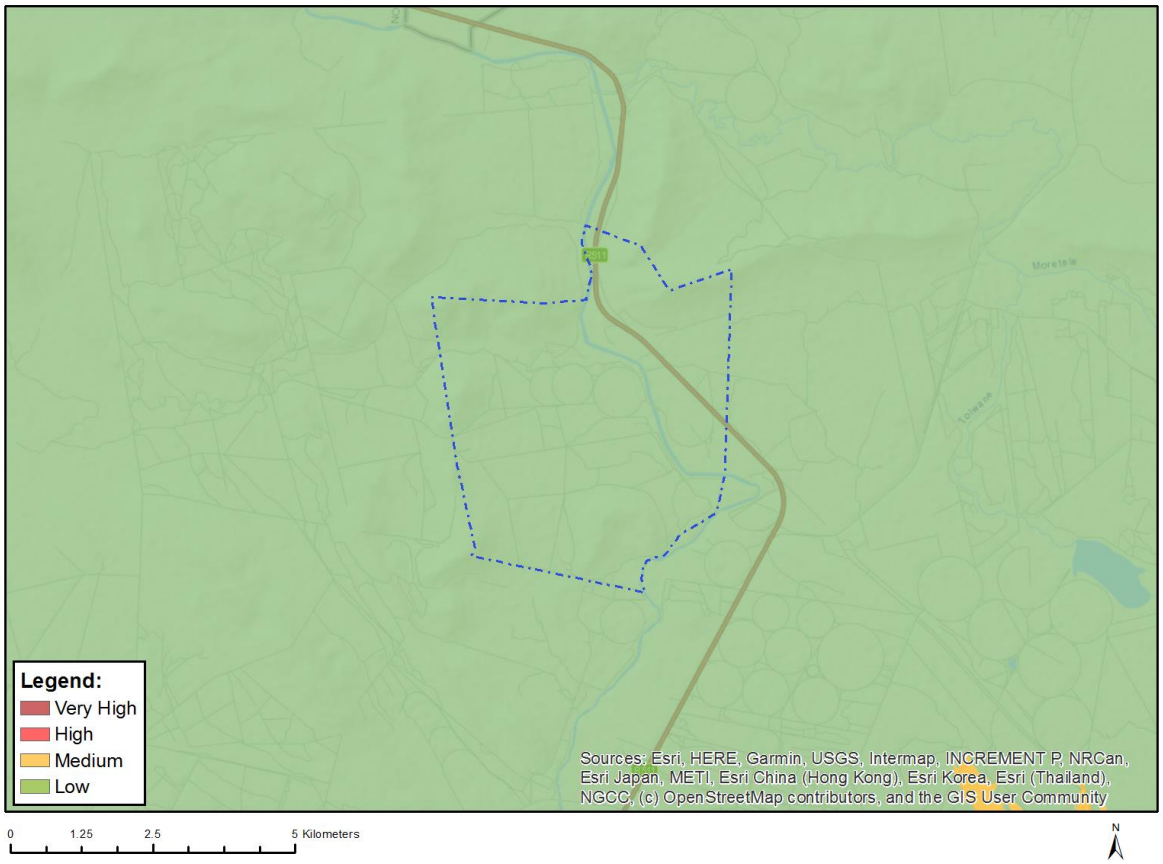


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Features with a High paleontological sensitivity
Medium	Features with a Medium paleontological sensitivity
Very High	Features with a Very High paleontological sensitivity

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



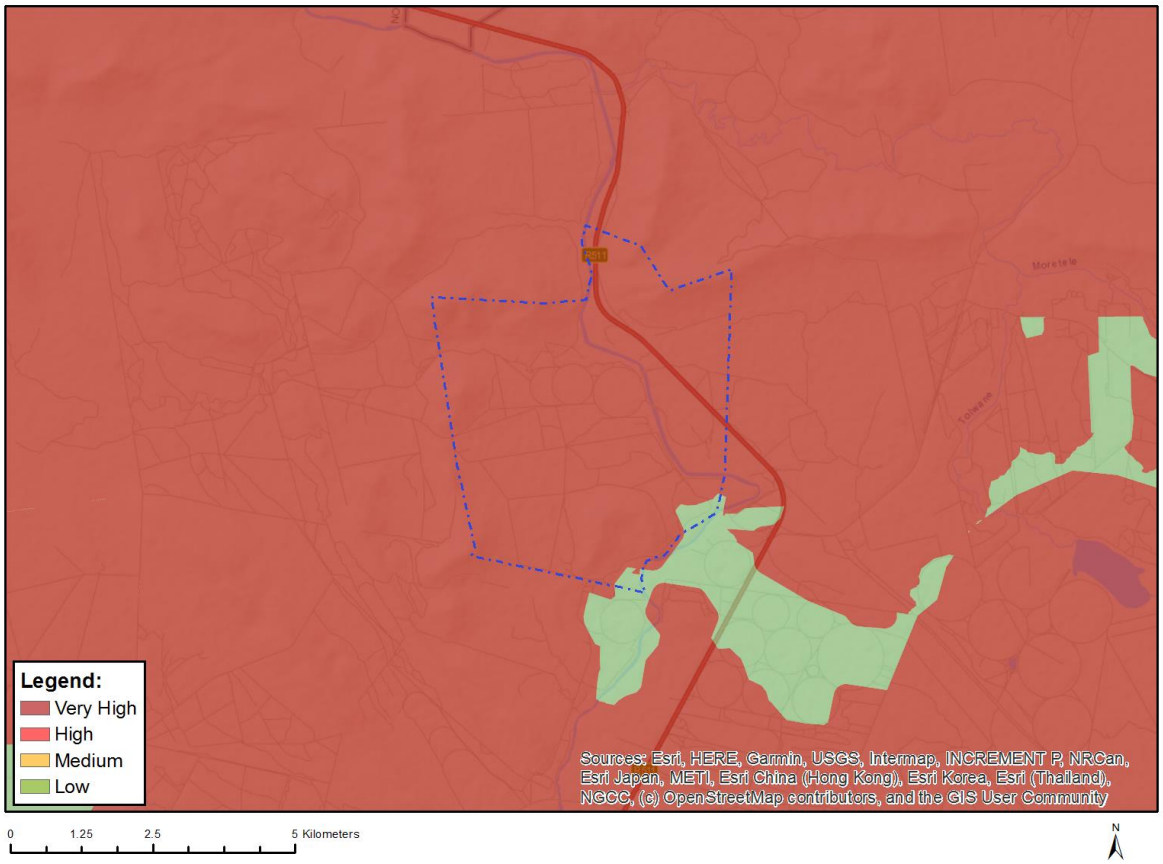
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



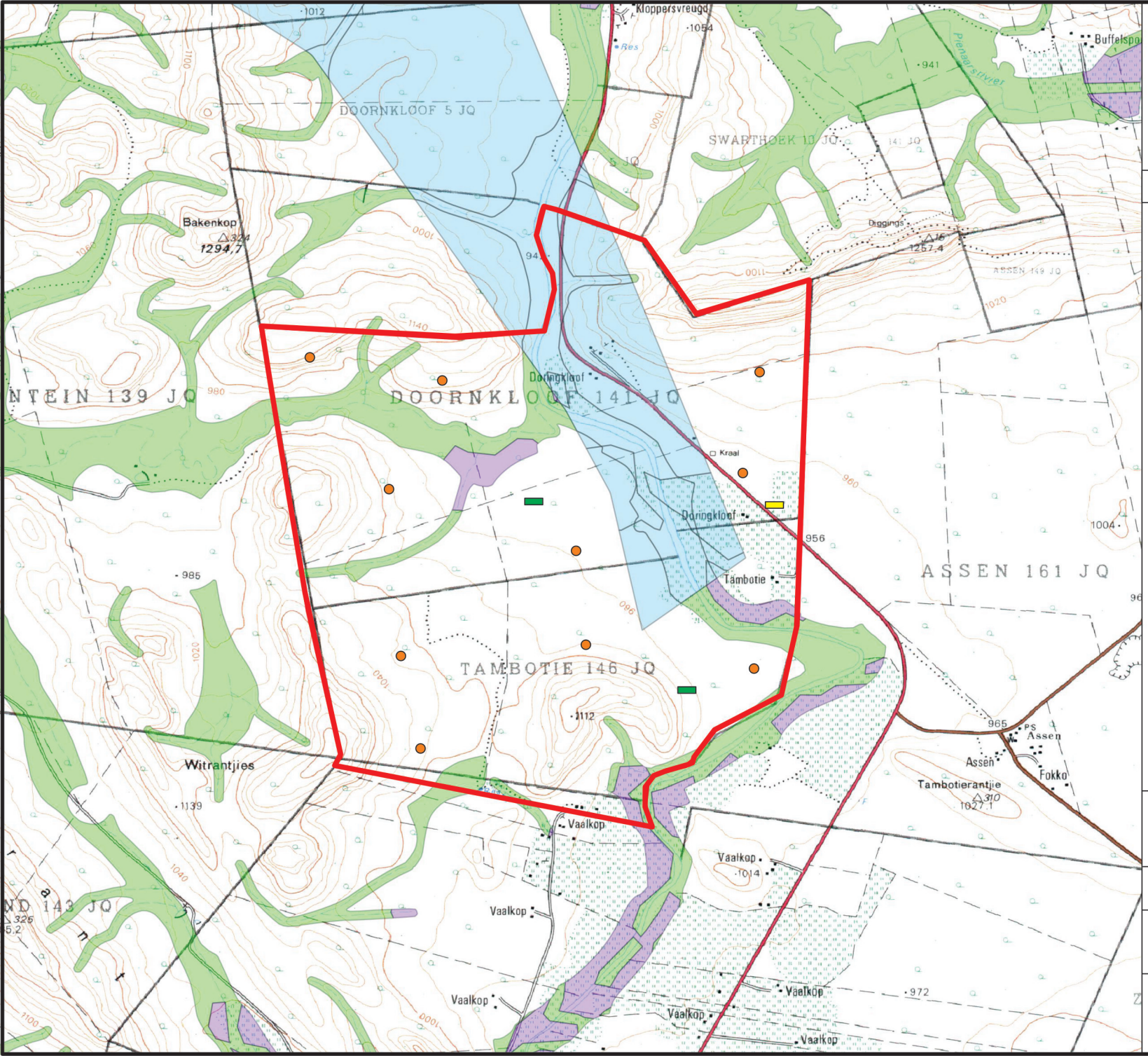
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Critical biodiveristy area 1
Very High	Critical biodiveristy area 2
Very High	Ecological support area 1
Very High	Ecological support area 2
Very High	Protected Areas Expansion Strategy

Appendix D

Proposed Prospecting Layout Plan



National Treasure Minerals (Pty) Ltd

Proposed Doornkloof Prospecting Project

LEGEND

- Proposed Doornkloof Prospecting Area
- Preferred Campsite
- Alternative Campsites
- Proposed Drill site
- Critical Biodiversity Area 1
- Ecological Support Area 1
- Ecological Support Area 2

Prospecting Layout Plan

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E-MAIL: geovicon@iafrica.com

0 750 1 500 m