National Treasure Minerals (Pty) Limited

Magdala Prospecting Project

DRAFT

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

Compiled in terms of Appendix 1 and 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
An application for an Environmental Authorization in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Amended Environmental Impact Assessment Regulations 2014, Government Notice R983 - Listing Notice 1 of 2014

DMRE Reference No.: LP 30/5/1/1/2/ 14111 PR

FEBRUARY 2022

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

National Treasure Minerals (Pty) Ltd:

Magdala Prospecting Area

BAR AND EMPR FOR THE MAGDALA PROSPECTING AREA

February 2022

CONTENTS PAGE

TABLES

FIGURES

APPENDICES

Report Type: Draft BAR/EMPr

Project Title: Magdala Prospecting Project

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Version: Draft

Date: February 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.

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)

P. P. Mthimunye, BSc. Of Earth Sciences in Mining and Environmental Geology (IAIA Membership No.: 6233)

This report was reviewed by:

_____

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T. Shakwane, B.Sc. Hons. (Professional Natural Scientist no: 117080)

EXECUTIVE SUMMARY

National Treasure Minerals (Pty) Limited has lodged an application for a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2004 (Act 28 of 2004). National Treasure Minerals (Pty) Limited proposes to prospect for Iron Ore on the remaining extent of the farm Dover 65 MT, remaining extent of the farm Magdala 9 MT and portion 4 of the farm Vryheid 8 MT situated in the Magisterial District of Musina in the province of Limpopo. See attached **Appendix A** for the Regulation 2(2) plan.

Magdala prospecting project will be undertaken in different phases i.e., literature review (available data interpretation and deciding whether to commence with drilling), field mapping and geophysical survey, positioning of drilling sites, diamond core drilling, logging/sampling of borehole cores and rehabilitation of the drilling site.

The commencement of the proposed Magdala prospecting project will results 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. In view of the above, 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 Magdala prospecting project. An application for an environmental authorisation for the proposed Magdala prospecting project was submitted to the Department of Mineral Resources and Energy, Limpopo Regional Office (Competent Authority) for their consideration. The application has ever since been received by the Department and a Basic Assessment Report (BAR) together with an EMPr must be compiled and submitted in terms of the requirements of the EIA Regulations, 2014.

This document (draft BAR and EMPr), which concerns assessment of environmental impacts and a programme for management of the impacts for the proposed activities at the Magdala prospecting area, was compiled in terms of the 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 desktop assessments for surface water, geohydrology, topographical landscape, soils, natural vegetation, wetlands 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 proposed Magdala 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

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Company: Geovicon Environmental (Pty) Limited

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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 more than 20 years' experience in the geological and environmental consulting field. Geovicon Environmental (Pty) Limited has successfully completed consulting work in the Mining sector (coal, 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 directors 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 and environmental impact assessment with the University of Mpumalanga's Centre for Environmental Management. 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 and Energy (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 areas similar to the proposed Magdala prospecting project as an environmental assessment practitioner. Mr Shakwane is the environmental assessment practitioner for the environmental impact assessment for the proposed Magdala prospecting project.

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 in terms of section 24H of the National Environmental Management Act, (Act 107 of 1998) and section 20(3) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003), respectively. He is also a member of the International Association for Impact Assessment (IAIASA), South Africa and serves under the IAIASA Mpumalanga Regional Committe. See **Appendix B** for the EAPs Curriculum Vitaes.

Over the past years Geovicon Environmental (Pty) Limited has formalised working relationships with companies that offer expertise in the following fields i.e., Geohydrology, Civil and Geotechnical Engineering, Geotechnical Consultancy, Survey and Mine Planning and Soil & Land Use Consultancy. Geovicon Environmental (Pty) Limited is an independent consulting company, which has no interest in the outcome of the decision regarding the proposed Magdala prospecting project basic assessment process.

1.2. WHO WILL EVALUATE AND APPROVE THE BAR AND EMPR?

Before the proposed project can proceed, an Environmental Assessment Practitioner (EAP) must compile an application for an Environmental Authorisation for the proposed project. 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 project 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 project was submitted to the Department of Mineral Resources and Energy (DMRE), Limpopo 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 project, the EAP will also consult with the below listed state authorities.

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

- Department of Mineral Resources and Energy, Limpopo Regional Office (Competent Authority).
- Limpopo Department of Agriculture and Rural Development (Commenting Authority).
- South African Heritage Resources Agency (Commenting Authority).
- Department of Forestry's, Fisheries and the Environment (DFFE).

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 Project

Magdala prospecting project

1.3.3. Physical Address of Applicant

National Treasure Minerals (Pty) Limited

Menlyn Corporate Park

Cnr Garsfontein and Corobay Avenue

Block C 4th Floor

Waterkloof Glen

0181

1.3.4. Responsible Person

Mongwe Mojalefa

1.3.5. Contact Person

Mongwe Mojalefa

Cell No: 074 548 9726

Fax: (086) 575 1718

E-mail: douglas@xakwa.com

1.4. DESCRIPTION OF THE PROPERTY (LOCATION OF THE PROJECT)

1.4.1. Regional Setting

The Magdala prospecting project is situated 8 km east of Musina town, access to the area is via the R508 Provincial Road that passes through a southern part of the prospecting area See Table 1 for the distance and directions of towns around the Magdala prospecting area.

1.4.2. Physical Address and Farm Name of the prospecting Area

Magdala prospecting project is situated on the remaining extent of the farm Dover 65 MT, remaining extent of the farm Magdala 9 MT and portion 4 of the farm Vryheid 8 MT in the Magisterial District of Musina in the province of Limpopo.

1.4.3. Magisterial District & Regional Services Council

- Magisterial District: Musina Magisterial District, Limpopo
- District Municipality: Vhembe District Municipality
- Local Municipality: Musina Local Municipality

1.4.4. Direction and Distance to Nearest Towns

Table 1: Direction and Distance to Nearest Towns.

TOWN	DIRECTION	DISTANCE (KM)
Musina	East	8 km
Bosrand	West	1 km
Chipise	Chipise	19 km

1.4.5. Locality Plan

Refer to Figure 1 for the locality plan of the Magdala prospecting area.

1.4.6. Land Tenure and Use of Immediate and Adjacent Land

Land tenure for the properties within and immediately around the proposed Magdala prospecting area is indicated on Figure 1 and described in Table 2. Land use within the proposed prospecting area and immediately adjacent to the proposed areas include recrteational (safaris/ladges (Mananga Safaris) and Musina Nature Reserve), conservation (woodlands and conservation areas), wilderness (stream and river syatems), mining (Baob Minerals old Iron mine), and roads (R508 Provincial Road, secondary and private gravel roads.

Table 2: Schedule of properties listing surface ownership within and surrounding Magdala prospecting area.

FARM NAME AND NUMBER	21 DIGIT SURVEYOR GENERAL CODE	DESCRIPTION OF SUB-DIVISION	SURFACE OWNER
Direct Surface Owners			
Vryheid 8 MT	T0MT00000000000800004	Portion 4*	Maremani Nature Reserve (Pty) Ltd
Magdala 9 MT	T0MT00000000000900000	RE*	Maremani Nature Reserve (Pty) Ltd
Dover 65 MT	T0MT00000000006500000	RE*	Maremani Nature Reserve (Pty) Ltd
Adjacent Surface Owners			
Vryheid 8 MT	T0MT00000000000800004	Portion 3	Marlys Frances Store
Antonvilla 7 MT	T0MT00000000000700001	Portion 1	National Government of RSA
Singelele 6 MT	T0MT00000000000600000	RE	National Government of RSA
Berkenrode 45 MT	T0MT00000000004500000	RE	Republic of South Africa
Stockford 46 MT	T0MT00000000004600000	RE	Republic of South Africa
Veenen 48 MT	T0MT00000000004800000	RE	Julius Grobler
Heuningfontein 59 MT	T0MT00000000005900000	RE	Baobab Petroleum CC
Boulonge 446 MT	T0MT00000000044600000	RE	Maremani Nature Reserve (Pty) Ltd
Oorsprong 62 MT	T0MT00000000006200000	RE	Limpopo Landowners (Pty) Ltd
Randjiesfontein 43 MT	T0MT00000000004300000	RE	Maremani Nature Reserve (Pty) Ltd
Randjiesfontein 43 MT	T0MT00000000004300001	Portion 1	Maremani Nature Reserve (Pty) Ltd
Boschrand 10 MT	T0MT00000000001000000	RE	Maremani Nature Reserve (Pty) Ltd
Steenbokrandjies 11 MT	T0MT00000000001100000	RE	Maremani Nature Reserve (Pty) Ltd

*Portions on which the prospecting area is applied for, also refer to the attached **Appendix C** as Windeed list of direct farm owners.

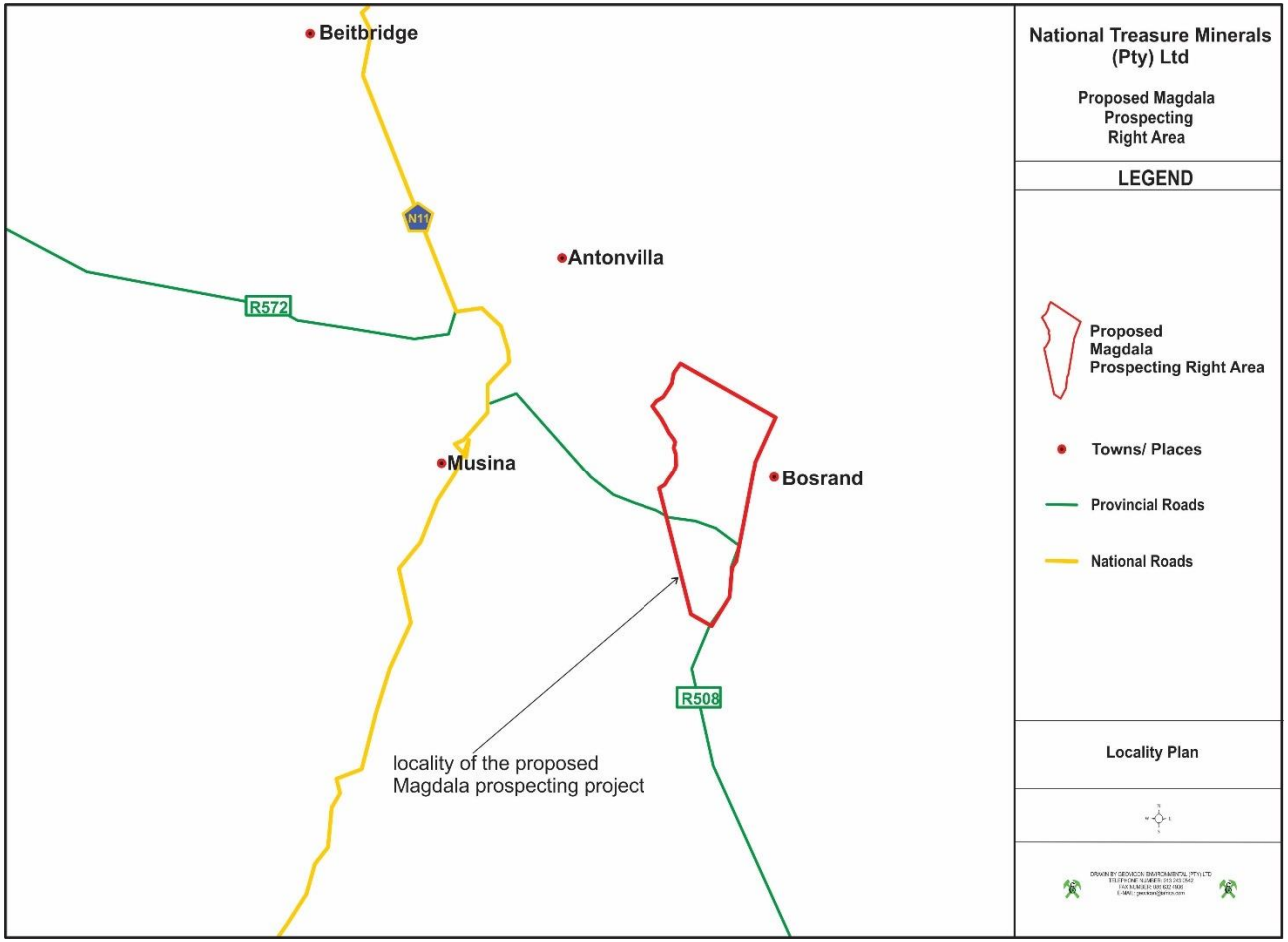


Figure 1: Locality plan.

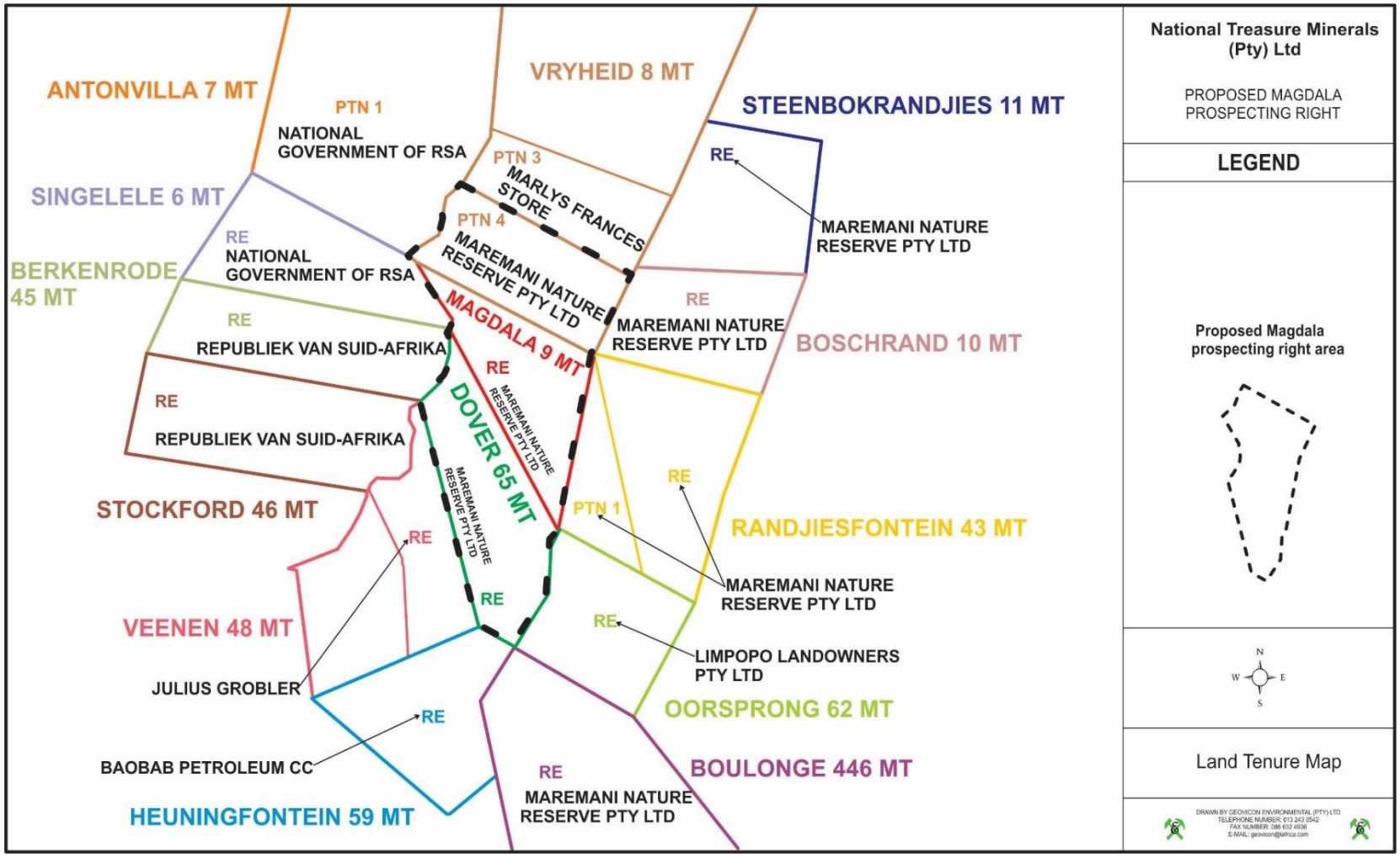


Figure 2: Land Tenure Plan for the proposed Magdala prospecting area

SECTION TWO

Description of the Scope of the proposed Area

2. DESCRIPTION OF THE SCOPE OF THE PROPOSED PROJECT

2.1. LISTED ACTIVITIES AND SPECIFIED ACTIVITIES

In terms of the NEMA, the proposed Magdala prospecting project will result in activities that are considered as listed activities. In terms of the above-mentioned legislations, none of the above-mentioned listed activities can be conducted without an environmental authorisation.

In view of the above, National Treasure Minerals (Pty) Limited has submitted an application for an Environmental Authorisation for all listed activities to be conducted at the proposed Magdala prospecting area to the competent authority (DMRE). This section will give a description of the listed activities that will be included in the application for an environmental authorisation. Table 3 is compiled as prescribed by the DMRE, EIR and EMPr template and reflects all project activities applied for.

2.2. DESCRIPTION OF THE PROPOSED PROJECT

National Treasure Minerals (Pty) Limited proposes to prospect for Iron Ore on the remaining extent of the farm Dover 65 MT, remaining extent of the farm Magdala 9 MT and portion 4 of the farm Vryheid 8 MT situated in the Magisterial District of Musina in the province of Limpopo.

Table 3: Listed Activities for the proposed Magdala prospecting project area.

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
PROPOSED MAGDALA PROSPECTING AREA LISTED AND SPECIFIC ACTIVITIES			
NATIONAL ENVIRONMENTAL MANAGEMENT ACT			
Conducting prospecting activities within the Magdala prospecting area for the exploration of Iron orel using a diamond core drilling prospecting methods together with all associated infrastructure and activities. These include site establishment (access to site), pegging of drilling sites, drilling of exploration boreholes with associated sumps, logging and sampling of drilled cores and site rehabilitation.	0.24 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. 983
Cleareance of an area of 300 square metres or more of indigenous vegetation for conducting prospecting activities using a diamond core drilling prospecting methods together with all associated infrastructure and activities. These include site establishment (access to site), pegging of drilling sites, drilling of exploration boreholes with associated sumps, logging and sampling of drilled cores and site rehabilitation.	0.24 Hectares	Activity 12 of Listing Notice 3: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. e. Limpopo i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; or iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.	NO. 985

2.2.1. Target Minerals

Iron Ore

2.2.2. Prospecting method to be used at the Magdala prospecting area

The proposed Magdala prospecting area will be explored in three phases i.e., literature review/field mapping phase and two drilling phases. Only the field mapping and drilling phases have potential for environmental impacts, thus only these two last phases will be described in this section of the report.

The field mapping phase will include the establishment of access to the site (tracks and/or existing roads), (chemical toilet), field surveying (to determine sensitive areas), geophysical surveys (if necessary) and pegging of the drilling sites.

Drilling phase will involve the drilling of the sited drilling boreholes by drill rig, using a diamond core drilling technique. A sump will be constructed in each drilling borehole for the collection and recycling of water from the drilling operation. The sump will be constructed to be one square meter in size and have a maximum depth of 1 meter. Any soils removed from the sump (approximately one cubic meters) will be placed adjacent the drilling site and used for rehabilitation of the site.

Boreholes will be drilled at pre-planned sites. The boreholes will be drilled to intersect all the expected reserves and will be logged by a geologist. The samples will be sent to a laboratory for quality determination. This data will form the basis for the geological modelling and financial evaluation.

National Treasure Minerals (Pty) Limited proposes to drill 42 boreholes in total throughout the life of the prospecting project.

2.2.3. Planned Life of Project

The current estimated life of the proposed Magdala prospecting project is five years.

2.3. MAGDALA PROSPECTING AREA SURFACE INFRASTRUCTURE DESCRIPTION

2.3.1. 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 R508 Provincial Road that passes through the southern part of the prospecting area and a number of minor roads connecting from the R508. Where no roads exist, tracks will be used to access the drilling sites. No clearing of natural vegetation will be undertaken in order to get access to the drilling sites.

2.3.2. Power Supply

Power supply will be required for the running of vehicles and diling machinery. Power will also be required for the drilling of boreholes and for the illumination (drill site) of the project site. Diesel powered vehicles and machinery will be used for the proposed project.

Power required for the drilling of boreholes, boreholes pumping and for the illumination of the project site be generated by a diesel-powered generator.

2.3.3. Water Supply

Water at the drilling operations will be required for the following purposes i.e., drilling, potable supply and for sanitation.

Water for the operation of machines and for domestic use (portable and sanitation) will be obtained from a landowner's borehole. Alternatively, water will be sourced from the local municipality or farm dams/streams. Should water be sourced from the streams, an authorisation (if triggered) from the DWS will be obtained before such abstraction. Irrespective of the source, water will be trucked to the sites with water carts or tanks loaded on site vehicles.

2.3.4. Workshops and Buildings

No workshops and office buildings will be required for this project. 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.

2.3.5. Waste Management

2.3.5.1. Waste Identification and Management

Hazardous Waste

Hazardous waste to be generated includes hydrocarbon wastes (oil and liquid fuel wastes) and sewage waste. Oil waste and other liquid fuels waste include used oils/lubricants (grease) from machinery and vehicles and diesel/petrol waste.

General Waste

General waste to be generated from the proposed area is domestic waste. Domestic waste will include papers, containers, food waste, stationary and discarded PPE generated from the drilling operations.

2.3.5.2. Waste Management Facilities

Hazardous Waste

Hydrocarbon waste will be collected in 210 litre drums for storage. The removal of the drums or any other appropriate receptacle will be undertaken by a waste disposal company, for disposal at a registered licensed waste disposal site. The drums will be placed on protected ground.

Chemical toilets will be used for the management of sewage waste generated on site.

General Waste

General waste will be collected in wheeled bins or refuse bags. The removal of this waste will be undertaken by the municipality or disposed at a registered landfill site.

2.4. MAGDALA PROSPECTING PROJECT- METHOD STATEMENT

In terms of the DMRE BAR and EMPr template, National Treasure Minerals (Pty) Limited must describe the methods and technology to be employed for the proposed project. 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 compilation of 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 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, and drilling of exploration boreholes.

2.4.1.4. Geophysical surveys and data interpretation

A Handheld proton Magnetometer will be used to perform the magnetic survey over the proposed prospecting site. Please refer to Figure 3.

Figure 3: GSM-19T Proton Precession system in action.

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, a physical inspection of the terrain will be 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).

2.4.2.1. Establishment of access

The R508 Provincial Road passes through the southern part of the proposed area. A number of gravel roads and tracks lie 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 and used as access to the drilling sites. 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.

2.4.2.2. Establishment of campsite

No campsite will be established within the project area. Facilities within Musina will be used for this purpose.

2.4.3. Operational Phase

2.4.3.1. Diamond core drilling 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 excess muds (water) from the drilling operation and the water will be used for the operation of the drilling machine. Refer to Figure 5 where the drill rig is represented.

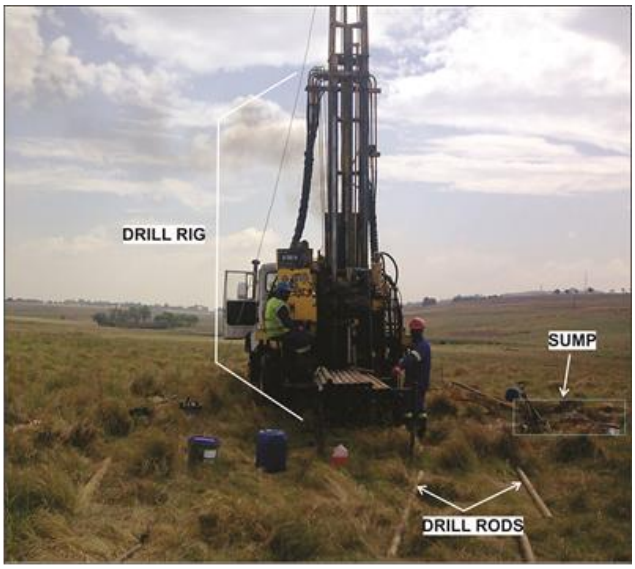


Figure 4: Drill rig operation

2.4.3.2. Topsoil storage site

The top and sub soils 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.

Please note that the final 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.

2.4.4. Decommissioning phase

2.4.5. 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. 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.

2.4.6. Pre-feasibility study

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

2.4.7. Mining feasibility study

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

2.4.8. 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 (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 project 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 project that were 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

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 and 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. 326, 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

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 project 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

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 any 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 (ACT 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, 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 BAR and EMPr has been complied to ensure that all applicable requirements prescribed in the NEMBA are complied with.

3.6. LIMPOPO ENVIRONMENTAL MANAGEMENTACT (ACT 7 OF 2003)

Objectives of this Act 2.

(1) The objectives of this Act are – 24 (a) to manage and protect the environment in the Province; (b) to secure ecologically sustainable development and responsible use of natural resources in the Province; (c) generally to contribute to the progressive realisation of the fundamental rights contained in section 24 of the Constitution of the Republic of South Africa , 1996 (Act No. 108 of 1996); and (d) to give effect to international agreements effecting environmental management which are binding on the Province.

(2) This Act must be interpreted and applied in accordance with the national environmental management principles set out in Section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

This Act makes provision with respect to the protection and conservation of the environment in the Limpopo Province. It makes provision for a wide variety of matters regarding the environment including: protected areas; hunting of wild and exotic animals; the establishment of Wildlife Councils; inland fishing and the protection and aquatic systems; the protection of indigenous plants; the application of CITES; restrictions on development and environmental impact reports; declaration and protection of mountain catchment areas; environmental pollution; and the protection of biodiversity in general.

The principal administrative responsible for the environment in the Limpopo province lies within the member of the Limpopo Executive Council responsible for environmental matters (MEC). The MEC may establish one or more Environmental Advisory Bodies for the province and Wildlife Councils in the area of a Traditional Authority. He or she may also declare Provincial Parks and Sites of Ecological Importance and (compulsory) acquire land for the purposes of such Parks or Sites. In addition, the MEC

may declare Protected Natural Environments and Resource Use Areas. The Act regulates mining in protected areas and hunting and fishing within and outside protected areas.

The BAR and EMPr has been compiled to ensure that all applicable requirements prescribed in the Act are complied with.

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

The Department of Mineral Resources and Energy (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 prospecting project. 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 project was submitted to the Department of Mineral Resources and Energy as the competent authority.

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

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 prospecting and related activities aimed at the protection of water resources.

No water use licence application was submitted to the Department of Water and Sanitation for their consideration. However, should the drilling activities be undertaken within 500 meters from the edge of any wetlands and should abstraction be conducted from the dams or streams, an application (general authorisation or water use licence) will be submitted and obtained before commencement of such water use activities. In addition to the above, 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: WASTE ACT (ACT NO. 59 OF 2008)

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.

Waste management activities are not triggered by the proposed project, 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

4.1. MOTIVATION FOR THE NEED AND DESIRABILITY OF THE PROJECT

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.

The section of the BAR and EMPr will indicate the need and desirability for the approval of the Magdala prospecting project.

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 above-mentioned mineral within the proposed prospecting area, it will be necessary for prospecting to be undertaken. The prospecting will also determine if there are any features that may have an impact on the economic extraction of the above-mentioned mineral.

The information that will be obtained from the proposed prospecting project will be necessary to determine where the mineral is located, how it can be viably extracted and the economic value of the total reserve within the prospecting area.

National Treasure Minerals (Pty) Limited predicts that substantial benefits from the area (should a viable reserve be found) will accrue to the immediate area, the sub-region and the province of Limpopo. These benefits must be offset against the costs of the area, including the impacts to land owners.

The potential benefits of the proposed project are:

- Potential reduction in crime because of short-term job creation during construction (providing farm safety and security measures), and also in the long-run as a result of job creation.
- Local growth in the economy of the host community 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 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.

A number of alternatives were considered for the proposed prospecting project. This section of the report will highlight the alternatives considered for the proposed prospecting activities.

5.1.1. Location Alternatives

The location alternative considered for the proposed project include the prospecting sites 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.

5.1.2. 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 the remaining extent of the farm Dover 65 MT, remaining extent of the farm Magdala 9 MT and portion 4 of the farm Vryheid 8 MT.

5.1.3. Access Routes/Transport alternatives

Two alternatives were considered i.e., existing road and a new road. Since the proponent would like to limit their pollution footprint, the existing access road was decided upon. The route of the R508 and several other secondary and private roads passes through the prospecting area and include a number of unnamed dirt roads that are present in the proposed Magdala prospecting area.

5.1.4. Campsite Location

No alternatives were considered since no campsite will be established within the project area. Facilities within Musina will be used for this purpose.

5.1.5. Design/ Layout Alternatives

Since no complicated surface infrastructure will be required for the proposed drilling operation, no design and layout alternatives for the proposed project were determined. The plan depicting all possible drilling sites will be compiled in consultation with the landowner and submitted with the progress to the DMRE.

5.1.6. Technology Alternatives

The mineral applied for is less cumbersome; hence the normal exploration technologies will be used. In view of the above, no technology alternatives were considered for this project.

5.1.7. Input Material Alternatives

No in-put material alternatives were considered for this area.

5.1.8. Operational Alternatives

5.1.9. Exploration Drilling Methods

Drilling is used to determine the depth, thickness and quality of the minerals in question at any point across a prospecting area. Drilling is also used to determine the actual local geology of the area.

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.

5.1.9.1. Transportation

Two alternatives were considered i.e., existing road and a new road. Since the proponent would like to limit their pollution footprint, the existing access road was decided upon. The route of the R508 and several other secondary and private roads passes through the prospecting area and include a number of unnamed dirt roads that are present in the proposed Magdala prospecting area.

5.1.10. No Go Option

National Treasure Minerals (Pty) Limited intends to prospect for Iron ore over the proposed prospecting right area. Should the project not commence, the following will result i.e.:

The reserve's economic value will not be known thus no mine will commence, which will result in the potential labour force losing their employment opportunity and all support that the mine would have provided to the local businesses which will boost the economy of the country.

Potential mining operations will also assist with the establishment of small and medium businesses and infrastructure development, community development and poverty eradication 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.

5.1.11. Concluding Statement

Based on the above, the proposed Magdala prospecting project, situated on the remaining extent of the farm Dover 65 MT, remaining extent of the farm Magdala 9 MT and portion 4 of the farm Vryheid 8 MT; accessed via the R508 and unnamed dirt access roads are preferred for the proposed prospecting project.

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 govern 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 include 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 managing the application must conduct at least a public participation process where all potential and 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, environmental management programme, scoping report and environmental impact assessment report, and where applicable the closure plan. In this case a Basic Assessment Report (BAR) is considered.

This section of the BAR and EMPr will give an explanation of the public participation process 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 project.

Geovicon Environmental (Pty) Limited on behalf of National Treasure Minerals (Pty) Limited is applying for an environmental authorisation for the proposed Magdala 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 submit a BAR and EMPr to the competent authority after having subjected the reports to a public participation process.

In view of the above, a public participation process was initiated for the proposed Magdala prospecting project. The public participation process for the proposed project was 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
- comment on the findings of the EIA.

The following will be conducted in the undertaking of the public participation process for the proposed project.

5.2.1. Registration and BAR Phase

The public participation process commenced with the provision of 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 starts on the 14th of February 2022 and ends on the 15th of March 2022.

5.2.1.1. Notification of potential interested and affected parties

The following methods of notification were used to notify the potential interested and affected parties of the opportunity to register and comment during the public participation process for the proposed project:

- On the 10th of February 2022, notices were posted in the Limpopo Mirror Newspaper which is distributed in host and surrounding towns of the proposed prospecting area, informing the public that the draft BAR/EMPr will be placed at the Musina library on the 14th of February 2022. The notices were compiled in compliance with the requirements of Regulation 41(3) of the EIA Regulations, 2014.
- Written notices were sent to surface owners and lawful occupiers of the land on which the proposed prospecting project will be undertaken.
- Site notices inviting the public to register as interested and affected parties were also used to invite comments on the BAR and EMPr from the public.
- The draft BAR and EMPr was also submitted to the commenting authorities for their comments.
- A copy of the draft BAR and EMPr was also placed at the Musina library.

5.2.1.2. Registered Interested and Affected Parties

The following are currently registered as interested and affected parties for the Magdala prospecting project:

- Department of Mineral Resources and Energy, Limpopo Regional Office (Competent Authority).

- National Department of Agriculture, Forestry and Fisheries, Limpopo Regional Office (Commenting Authority).
- South African Heritage Resources Agency (Commenting Authority)
- Department of Public Works, Roads and Transport – Limpopo
- Limpopo Department of Agriculture and Rural Development
- Department of Economic Development, Environment and Tourism Limpopo
- Department of Water and Sanitation
- Musina Nature Reserve
- Ward 2 Councillor
- Musina Local Municipality.
- Land owners and lawful occupiers within the Magdala project's area.
- Land owners and lawful occupiers immediately adjacent to the project's area.

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 to be submitted to the DMRE for their consideration.

5.2.1.4. Finalisation of Interested and Affected Party Database

On expiry of the registration 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.

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

5.2.2. Draft Basic Assessment Report

The draft BAR and EMPr is made available for comment to all relevant stakeholders during the above-mentioned registration and BAR/EMPr commenting phase of the proposed project's public participation process.

5.2.2.1. Comments, Issues and Responses on the Draft Basic Assessment Report

The comments and issues that will be raised by the interested and affected parties will be addressed and included in the final BAR and EMPr.

5.2. ENVIRONMENTAL ATTRIBUTES (BASELINE INFORMATION)

5.2.1. Geology

5.2.1.1. Regional Geology

Limpopo Mobile Belt

Lenticular and structurally interrupted beds of magnetite quartzite forming prominent sharp-crested black ridges occur widely in the Limpopo Mobile Belt and in the large xenolithic bodies of metasediments in the granitic terrain north of Pietersburg.

The average thickness of these beds is 10-15 metres but they do not persist along strike for more than a few kilometres. The rock consists essentially of equal proportions of magnetite in various stages of martilisation, and quartz. The texture is granular. The average iron content is of the order of 30-40 per cent but local enrichments are reported to occur as small lenses of high grade non-titaniferous magnetite assaying 62-68 per cent Fe, as for instance on Magdala 9 MT and Dover 44 MT. During 1973 iron ore was mined on Msryland 1 M.

5.2.2. Climate

5.2.2.1. Regional Climate

Magdala prospecting right are falls within the summer rainfall region of South Africa, in which more than 80% of the annual rainfall occurs from October to March. Eighty five percent of the rain falls during summer thunderstorms occurring every 3 - 4 days in summer. They occur in the form of conventional thunderstorms, are usually of short duration and high intensity and accompanied by lightning, strong winds, and sometimes hail 68.5.

During the year, there is little rainfall in Musina. The Köppen-Geiger climate classification is BSh. The average annual temperature in Musina is 22.9 °C | 73.1 °F. year. Precipitation here is about 372 mm | 14.6 inch per year.

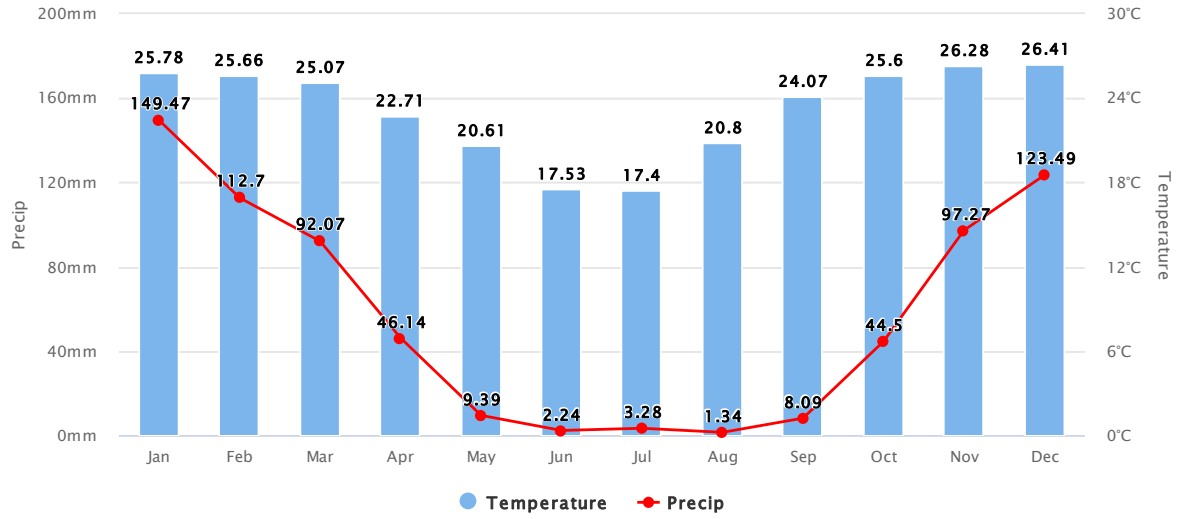
Table 4: Mean Montly temperatures in Musina.

Month	Day	Night	Rain Days
January	32°c	21°c	16
February	31°c	21°c	16
March	31°c	20°c	13
April	29°c	17°c	8
May	27°c	14°c	3
June	24°c	12°c	2

July	24°c	11°c	3
August	27°c	13°c	2
September	30°c	17°c	3
October	32°c	19°c	6
November	32°c	20°c	12
December	33°c	22°c	16

5.2.2.2. Mean monthly rainfall data

Table 5: Mean monthly rainfall data (mm).



5.2.3. Topography

The elevation of the surrounding area ranges from 421 m above sea level to 689 m above sea level. A Sand River flows along the north-western border of the site.

5.2.4. Land Use

Land use within the proposed prospecting areas and immediately adjacent to the proposed areas include recrteational (safaris/ladges (Mananga Safaris) and Musina Nature Reserve), conservation (woodlands and conservation areas), wilderness (stream and river syatems), mining (Baob Minerals old Iron mine) , and roads (R508 Provincial Road, secondary and private gravel roads).

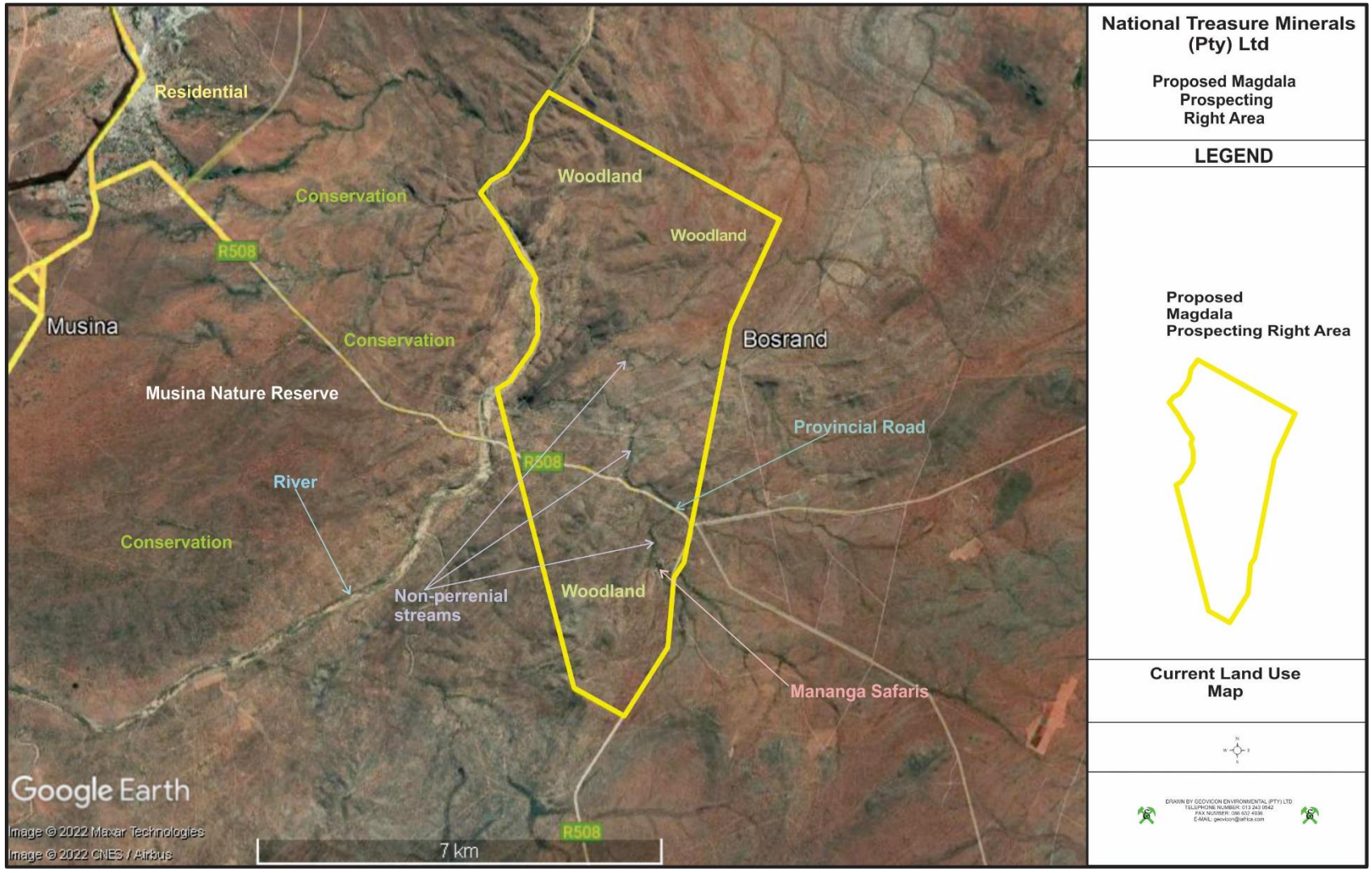


Figure 5: Current land-use map.

5.2.5. Natural Vegetation/Plant Life

The proposed Magdala prospecting right area is situated within two national vegetation types or units that are described by Mucina and Rutherford (2006). These vegetation types include the Limpopo Ridge Bushveld vegetation type/ ecosystem (SVmp2) and the Musina Mopane Bushveld vegetation type/ ecosystem (SVmp1). Both vegetation types are situated within the savanna biome.

The landscape of the Musina Mopane Bushveld (SVmp1) is characterised by undulating to very irregular plains, with some hills. In the western section, open woodland to moderately closed shrubveld is dominated by *Colophospermum mopane* on clayey bottomlands, while *Combretum apiculatum* dominates on hills. In the eastern section on basalt, moderately closed to open shrubveld is dominated by *Colophospermum mopane* and *Terminalia prunioides*. On areas with deep sandy soils, the moderately open savanna is dominated by *Colophospermum mopane, T. sericea, Grewia flava* and *Combretum apiculatum*. The field layer is well developed (especially on the basalt) and open during the dry season. The herbaceous layer is poorly developed in areas with dense cover of *Colophospermum mopane* shrubs, for example, north of Alldays bordering the Limpopo floodplain.

The landscape of the Limpopo Ridge Bushveld (SVmp2) includes extremely irregular plains with ridges and hills. The moderately open savanna includes a poorly developed ground layer. Umbrella-shape canopied *Kirkia acuminata* is prominent on some ridge skylines, with the often-enormous *Adansonia digitata* on shallow calcareous gravel. The shrub *Catophractes alexandri* is dominant on calc-silicate soils.

5.2.6. Animal life

The proposed Magdala prospecting right area is situated over two ecosystem types as mentioned above. These ecosystems serve as habitat for a variety of animals. In accordance with the above-mentioned land uses (section 5.2.4), certain species can occur within and in the surrounding areas of the proposed Magdala prospecting right area. Lists of animal species indicated in the tables below have been obtained from the web-accessible Virtual Museum of the Animal Demography Unit. The proposed Magdala prospecting right area is situated within the 2230AC quarter degree square grid. The tables below represent the occurrence of animal species found within the perimeters of the 2230AC quarter degree square grid and is not restricted to the proposed Magdala prospecting right area.

Table 6: List of Mammal species that occur in the 2230AC 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	212040	Bovidae	*Connochaetes taurinus taurinus*		Least Concern (2016)
4	215930	Bovidae	*Hippotragus niger*	Sable Antelope	Least Concern (ver 3.1, 2017)
5	215940	Bovidae	*Hippotragus niger niger*		Vulnerable (2016)
6	216050	Bovidae	*Kobus ellipsiprymnus ellipsiprymnus*		Least Concern (2016)
7	213120	Bovidae	*Oreotragus oreotragus*	Klipspringer	Least Concern (2016)

8	216020	Bovidae	*Oryx gazella*	Gemsbok	Least Concern (2016)
9	216360	Bovidae	*Pelea capreolus*	Vaal Rhebok	Near Threatened (2016)
10	213320	Bovidae	*Raphicerus campestris*	Steenbok	Least Concern (2016)
11	213850	Bovidae	*Taurotragus oryx*	Common Eland	Least Concern (2016)
12	213930	Bovidae	*Tragelaphus angasii*	Nyala	Least Concern (2016)
13	213970	Bovidae	*Tragelaphus scriptus*	Bushbuck	Least Concern
14	214120	Bovidae	*Tragelaphus strepsiceros*	Greater Kudu	Least Concern (2016)
15	114040	Cercopithecidae	*Papio ursinus*	Chacma Baboon	Least Concern (2016)
16	175880	Emballonuridae	*Taphozous (Taphozous) mauritianus*	Mauritian Tomb Bat	Least Concern
17	207010	Equidae	*Equus quagga*	Plains Zebra	Least Concern (2016)
18	193900	Felidae	*Panthera pardus*	Leopard	Vulnerable (2016)
19	211830	Giraffidae	*Giraffa giraffa giraffa*	South African Giraffe	Least Concern (2016)
20	196340	Herpestidae	*Herpestes sanguineus*	Slender Mongoose	Least Concern (2016)
21	197450	Herpestidae	*Mungos mungo*	Banded Mongoose	Least Concern (2016)
22	197620	Herpestidae	*Paracynictis selousi*	Selous' Mongoose	Least Concern (2016)
23	197750	Hyaenidae	*Hyaena brunnea*	Brown Hyena	Near Threatened (2015)
24	106400	Macroscelididae	*Elephantulus intufi*	Bushveld Elephant Shrew	Least Concern (2016)
25	106410	Macroscelididae	*Elephantulus myurus*	Eastern Rock Elephant Shrew	Least Concern (2016)
26	181130	Molossidae	*Chaerephon pumilus*	Little Free-tailed Bat	Least Concern (2016)
27	182580	Molossidae	*Sauromys petrophilus*	Roberts's Flat-headed Bat	Least Concern (2016)
28	144040	Muridae	*Acomys (Acomys) spinosissimus*	Southern African Spiny Mouse	Least Concern
29	145370	Muridae	*Aethomys chrysophilus*	Red Veld Aethomys	Least Concern (2016)
30	217970	Muridae	*Aethomys namaquensis*	Namaqua Rock Mouse	Least Concern
31	218030	Muridae	*Gerbilliscus leucogaster*	Bushveld Gerbil	Least Concern (2016)
32	146620	Muridae	*Grammomys dolichurus*	Common Grammomys	Least Concern (2016)

33	147490	Muridae	*Mastomys coucha*	Southern African Mastomys	Least Concern (2016)
34	147530	Muridae	*Mastomys natalensis*	Natal Mastomys	Least Concern (2016)
35	150170	Muridae	*Rattus rattus*	Roof Rat	Least Concern
36	150690	Muridae	*Thallomys paedulcus*	Acacia Thallomys	Least Concern (2016)
37	136520	Nesomyidae	*Saccostomus campestris*	Southern African Pouched Mouse	Least Concern (2016)
38	176970	Nycteridae	*Nycteris thebaica*	Egyptian Slit-faced Bat	Least Concern (2016)
39	151320	Pedetidae	*Pedetes capensis*	South African Spring Hare	Least Concern (2016)
40	160740	Soricidae	*Crocidura cyanea*	Reddish-gray Musk Shrew	Least Concern (2016)
41	207690	Suidae	*Phacochoerus africanus*	Common Warthog	Least Concern (2016)
42	187040	Vespertilionidae	*Neoromicia capensis*	Cape Serotine	Least Concern (2016)
43	184090	Vespertilionidae	*Nycticeinops schlieffeni*	Schlieffen's Twilight Bat	Least Concern (2016)
44	185740	Vespertilionidae	*Pipistrellus (Pipistrellus) rusticus*	Rusty Pipistrelle	Near Threatened
45	187360	Vespertilionidae	*Pipistrellus zuluensis*	Zulu Serotine	Least Concern
46	184430	Vespertilionidae	*Scotophilus dinganii*	Yellow-bellied House Bat	Least Concern (2016)

Table 7: List of Reptile species that occur in the 2230AC quarter degree grid (Reptile Map, Animal Demography Unit)

#	Species code	Family	*Scientific name*	Common name	Red list category
1	1460	Agamidae	*Agama aculeata distanti*	Distant's Ground Agama	Least Concern (SARCA 2014)
2	1480	Agamidae	*Agama armata*	Peters' Ground Agama	Least Concern (SARCA 2014)
3	1410	Chamaeleonidae	*Chamaeleo dilepis*	Common Flap-neck Chameleon	Least Concern (SARCA 2014)
4	3110	Cordylidae	*Cordylus jonesii*	Jones' Girdled Lizard	Least Concern (SARCA 2014)
5	3360	Cordylidae	*Platysaurus intermedius rhodesianus*	Zimbabwe Flat Lizard	Least Concern (SARCA 2014)
6	5150	Elapidae	*Aspidelaps scutatus scutatus*	Speckled Shield Cobra	Least Concern (SARCA 2014)
7	5240	Elapidae	*Elapsoidea sundevallii longicauda*	Long-tailed Garter Snake	
8	5300	Elapidae	*Naja mossambica*	Mozambique Spitting Cobra	Least Concern (SARCA 2014)
9	180	Gekkonidae	*Afroedura transvaalica*	Zimbabwe Flat Gecko	Least Concern (IUCN 2020)
10	580	Gekkonidae	*Chondrodactylus turneri*	Turner's Gecko	Least Concern (SARCA 2014)
11	230	Gekkonidae	*Hemidactylus mabouia*	Common Tropical House Gecko	Least Concern (SARCA 2014)

12	270	Gekkonidae	*Homopholis wahlbergii*	Wahlberg's Velvet Gecko	Least Concern (SARCA 2014)
13	320	Gekkonidae	*Lygodactylus capensis*	Common Dwarf Gecko	Least Concern (SARCA 2014)
14	680	Gekkonidae	*Pachydactylus punctatus*	Speckled Gecko	Least Concern (SARCA 2014)
15	790	Gekkonidae	*Pachydactylus tigrinus*	Tiger Gecko	Least Concern (SARCA 2014)
16	3500	Gerrhosauridae	*Broadleysaurus major*	Rough-scaled Plated Lizard	Least Concern (SARCA 2014)
17	3490	Gerrhosauridae	*Gerrhosaurus flavigularis*	Yellow-throated Plated Lizard	Least Concern (SARCA 2014)
18	1580	Lacertidae	*Heliobolus lugubris*	Bushveld Lizard	Least Concern (SARCA 2014)
19	1620	Lacertidae	*Meroles squamulosus*	Common Rough-scaled Lizard	Least Concern (SARCA 2014)
20	1730	Lacertidae	*Nucras holubi*	Holub's Sandveld Lizard	Least Concern (SARCA 2014)
21	1770	Lacertidae	*Nucras ornata*	Ornate Sandveld Lizard	Least Concern (SARCA 2014)
22	4130	Lamprophiidae	*Aparallactus capensis*	Black-headed Centipede-eater	Least Concern (SARCA 2014)
23	4260	Lamprophiidae	*Atractaspis bibronii*	Bibron's Stiletto Snake	Least Concern (SARCA 2014)
24	4320	Lamprophiidae	*Boaedon capensis*	Brown House Snake	Least Concern (SARCA 2014)
25	4470	Lamprophiidae	*Lycophidion variegatum*	Variegated Wolf Snake	Least Concern (SARCA 2014)
26	5020	Lamprophiidae	*Prosymna bivittata*	Two-striped Shovel-snout	Least Concern (SARCA 2014)
27	5070	Lamprophiidae	*Prosymna lineata*	Lined Shovel-snout	Least Concern (SARCA 2014)
28	4830	Lamprophiidae	*Psammophis angolensis*	Dwarf Sand Snake	Least Concern (SARCA 2014)
29	4900	Lamprophiidae	*Psammophis mossambicus*	Olive Grass Snake	Least Concern (SARCA 2014)
30	4930	Lamprophiidae	*Psammophis subtaeniatus*	Western Yellow-bellied Sand Snake	Least Concern (SARCA 2014)
31	4990	Lamprophiidae	*Rhamphiophis rostratus*	Rufous Beaked Snake	Least Concern (SARCA 2014)
32	4220	Lamprophiidae	*Xenocalamus bicolor lineatus*	Striped Quill-snouted Snake	Least Concern (SARCA 2014)
33	4250	Lamprophiidae	*Xenocalamus transvaalensis*	Speckled Quill-snouted Snake	Least Concern (SARCA 2014)
34	4020	Leptotyphlopidae	*Leptotyphlops scutifrons scutifrons*	Peters' Thread Snake	
35	4070	Pythonidae	*Python natalensis*	Southern African Python	Least Concern (SARCA 2014)
36	2260	Scincidae	*Mochlus sundevallii*	Sundevall's Writhing Skink	Least Concern (SARCA 2014)
37	2530	Scincidae	*Panaspis maculicollis*	Spotted-neck Snake-eyed Skink	Least Concern (SARCA 2014)
38	2670	Scincidae	*Scelotes limpopoensis limpopoensis*	Limpopo Dwarf Burrowing Skink	Least Concern (SARCA 2014)
39	2360	Scincidae	*Trachylepis margaritifera*	Rainbow Skink	Least Concern (SARCA 2014)
40	2500	Scincidae	*Trachylepis punctulata*	Speckled Sand Skink	Least Concern (SARCA 2014)
41	2430	Scincidae	*Trachylepis striata*	Striped Skink	Least Concern (SARCA 2014)
42	2480	Scincidae	*Trachylepis varia sensu lato*	Common Variable Skink Complex	Least Concern (SARCA 2014)

43	3870	Typhlopidae	*Afrotyphlops mucruso*	Zambezi Giant Blind Snake	Least Concern (SARCA 2014)
44	3850	Typhlopidae	*Rhinotyphlops lalandei*	Delalande's Beaked Blind Snake	Least Concern (SARCA 2014)
45	5410	Viperidae	*Bitis arietans arietans*	Puff Adder	Least Concern (SARCA 2014)

Table 8: List of Frog species that occur in the 2230AC 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	300	Bufonidae	*Poyntonophrynus fenoulheti*	Northern Pygmy Toad	Least Concern
3	320	Bufonidae	*Sclerophrys garmani*	Olive Toad	Least Concern (IUCN, 2016)
4	340	Bufonidae	*Sclerophrys pusilla*	Flatbacked Toad	Least Concern (IUCN, 2016)
5	1060	Pipidae	*Xenopus muelleri*	Tropical Platanna	Least Concern
6	780	Ptychadenidae	*Ptychadena anchietae*	Plain Grass Frog	Least Concern
7	400	Pyxicephalidae	*Cacosternum boettgeri*	Common Caco	Least Concern (2013)
8	990	Pyxicephalidae	*Tomopterna cryptotis*	Tremelo Sand Frog	Least Concern
9	1020	Pyxicephalidae	*Tomopterna marmorata*	Russetbacked Sand Frog	Least Concern
10	1030	Pyxicephalidae	*Tomopterna natalensis*	Natal Sand Frog	Least Concern
11	470	Rhacophoridae	*Chiromantis xerampelina*	Southern Foam Nest Frog	Least Concern (2013)

Table 9: List of Lepidoptera species that occur in the 2230AC quarter degree grid (Lepi Map, Animal Demography Unit)

#	Species code	Family	*Scientific name*	Common name	Red list category
1	469230	HESPERIIDAE	*Caprona pillaana*	Ragged skipper	Least Concern (SABCA 2013)
2	468280	HESPERIIDAE	*Coeliades forestan forestan*	Striped policeman	Least Concern (SABCA 2013)
3	472900	HESPERIIDAE	*Kedestes callicles*	Pale ranger	Least Concern (SABCA 2013)
4	474440	HESPERIIDAE	*Parosmodes morantii morantii*	Morant's orange	Least Concern (SABCA 2013)
5	472530	HESPERIIDAE	*Pelopidas thrax*	White-branded swift	Least Concern (SABCA 2013)
6	459070	LYCAENIDAE	*Aloeides damarensis mashona*	Damara russet	Least Concern (SABCA 2013)
7	460430	LYCAENIDAE	*Anthene amarah amarah*	Black-striped ciliate blue	Least Concern (SABCA 2013)
8	460650	LYCAENIDAE	*Anthene dulcis dulcis*	Mashuna ciliate blue	Least Concern (SABCA 2013)
9	458500	LYCAENIDAE	*Axiocerses amanga amanga*	Bush scarlet	Least Concern (SABCA 2013)
10	458810	LYCAENIDAE	*Axiocerses tjoane tjoane*	Eastern scarlet	Least Concern (SABCA 2013)
11	464800	LYCAENIDAE	*Azanus jesous*	Topaz babul blue	Least Concern (SABCA 2013)
12	464880	LYCAENIDAE	*Azanus ubaldus*	Velvet-spotted babul blue	Least Concern (SABCA 2013)

13	466030	LYCAENIDAE	*Chilades trochylus*	Grass jewel blue	Least Concern (SABCA 2013)
14	458120	LYCAENIDAE	*Cigaritis ella*	Ella's silverline	Least Concern (SABCA 2013)
15	458270	LYCAENIDAE	*Cigaritis natalensis*	Natal silverline	Least Concern (SABCA 2013)
16	458320	LYCAENIDAE	*Cigaritis phanes*	Silvery silverline	Least Concern (SABCA 2013)
17	465380	LYCAENIDAE	*Euchrysops osiris*	Osiris smoky blue	Least Concern (SABCA 2013)
18	452210	LYCAENIDAE	*Iolaus mimosae rhodosense*	Mimosa sapphire	Least Concern (SABCA 2013)
19	463230	LYCAENIDAE	*Lampides boeticus*	Pea blue	Least Concern (SABCA 2013)
20	466520	LYCAENIDAE	*Lepidochrysops glauca*	Silvery giant cupid	Least Concern (SABCA 2013)
21	454330	LYCAENIDAE	*Leptomyrina gorgias gorgias*	Lilac-based black-eye	Least Concern (SABCA 2013)
22	463950	LYCAENIDAE	*Leptotes sp.*		
23	464050	LYCAENIDAE	*Leptotes pirithous pirithous*	Common zebra blue	Least Concern (SABCA 2013)
24	454520	LYCAENIDAE	*Deudorix dinochares*	Apricot playboy	Least Concern (SABCA 2013)
25	464720	LYCAENIDAE	*Zizula hylax*	Tiny grass blue	Least Concern (SABCA 2013)
26	411820	NYMPHALIDAE	*Acraea natalica*	Black-based acraea	Least Concern (SABCA 2013)
27	410760	NYMPHALIDAE	*Acraea neobule neobule*	Wandering donkey acraea	Least Concern (SABCA 2013)
28	411830	NYMPHALIDAE	*Acraea oncaea*	Window acraea	Least Concern (SABCA 2013)
29	434010	NYMPHALIDAE	*Charaxes phaeus*	Demon charaxes	Least Concern (SABCA 2013)
30	419470	NYMPHALIDAE	*Coenyropsis natalii natalii*	Orange lined ringlet	Least Concern (SABCA 2013)
31	409280	NYMPHALIDAE	*Danaus chrysippus orientis*	African plain tiger	Least Concern (SABCA 2013)
32	432240	NYMPHALIDAE	*Hamanumida daedalus*	Guineafowl	Least Concern (SABCA 2013)
33	439300	NYMPHALIDAE	*Hypolimnas misippus*	Common diadem	Least Concern (SABCA 2013)
34	438280	NYMPHALIDAE	*Junonia hierta cebrene*	Yellow pansy	Least Concern (SABCA 2013)
35	438340	NYMPHALIDAE	*Junonia oenone oenone*	Dark blue pansy	Least Concern (SABCA 2013)
36	438050	NYMPHALIDAE	*Vanessa cardui*	Painted lady	Least Concern (SABCA 2013)
37	400530	PAPILIONIDAE	*Papilio demodocus demodocus*	Citrus swallowtail	Least Concern (SABCA 2013)
38	401360	PAPILIONIDAE	*Papilio nireus lyaeus*	Narrow green-banded swallowtail	Least Concern (SABCA 2013)
39	405230	PIERIDAE	*Appias epaphia contracta*	Diverse Albatross White	Least Concern (SABCA 2013)
40	407450	PIERIDAE	*Belenois aurota*	Pioneer caper white	Least Concern (SABCA 2013)
41	403120	PIERIDAE	*Catopsilia florella*	African migrant	Least Concern (SABCA 2013)
42	403720	PIERIDAE	*Colotis sp.*		
43	403920	PIERIDAE	*Colotis celimene amina*	Lilac tip	Least Concern (SABCA 2013)
44	404180	PIERIDAE	*Colotis euippe omphale*	Southern round-winged orange tip	Least Concern (LC)

45	404240	PIERIDAE	*Colotis evagore antigone*	Small orange tip	Least Concern (SABCA 2013)
46	404320	PIERIDAE	*Colotis evenina evenina*	African orange tip	Least Concern (SABCA 2013)
47	404510	PIERIDAE	*Colotis ione*	Bushveld purple tip	Least Concern (SABCA 2013)
48	404690	PIERIDAE	*Colotis regina*	Queen purple tip	Least Concern (SABCA 2013)
49	404760	PIERIDAE	*Colotis vesta argillaceus*	Southern veined arab	Least Concern (SABCA 2013)
50	402930	PIERIDAE	*Eurema brigitta brigitta*	Broad-bordered grass yellow	Least Concern (SABCA 2013)
51	403570	PIERIDAE	*Pinacopteryx eriphia eriphia*	Zebra white	Least Concern (SABCA 2013)
52	403640	PIERIDAE	*Teracolus agoye agoye*	Speckled sulphur tip	Least Concern (SABCA 2013)
53	403690	PIERIDAE	*Teracolus eris eris*	Banded gold tip	Least Concern (SABCA 2013)
54	403710	PIERIDAE	*Teracolus subfasciatus*	Lemon traveller	Least Concern (SABCA 2013)
55	626850	SPHINGIDAE	*Euchloron megaera*		

Table 10: List of Dungbeetle species that occur in the 2230AC quarter degree grid (Dungbeetle Map, Animal Demography Unit)

#	Species code	Family	Scientific name	
1	7700150	Scarabaeidae	*Allogymnopleurus thalassinus*	
2	7700870	Scarabaeidae	*Catharsius philus*	
3	7701060	Scarabaeidae	*Chalconotus convexus*	
4	7701190	Scarabaeidae	*Cleptocaccobius viridicollis*	
5	7701460	Scarabaeidae	*Copris elphenor*	
6	7701470	Scarabaeidae	*Copris evanidus*	
7	7702280	Scarabaeidae	*Digitonthophagus gazella*	
8	7702310	Scarabaeidae	*Drepanocerus patrizii*	
9	7702700	Scarabaeidae	*Euoniticellus intermedius*	
10	7702770	Scarabaeidae	*Euonthophagus carbonarius*	
11	7702980	Scarabaeidae	*Garreta nitens*	
12	7703030	Scarabaeidae	*Gymnopleurus aenescens*	
13	7703110	Scarabaeidae	*Gymnopleurus humeralis*	
14	7703250	Scarabaeidae	*Gymnopleurus virens*	
15	7704120	Scarabaeidae	*Metacatharsius ferreirae*	
16	7704200	Scarabaeidae	*Metacatharsius opacus*	
17	7704560	Scarabaeidae	*Neosisyphus barbarossa*	
18	7704570	Scarabaeidae	*Neosisyphus calcaratus*	
19	7704620	Scarabaeidae	*Neosisyphus infuscatus*	
20	7704680	Scarabaeidae	*Neosisyphus rubrus*	
21	7704880	Scarabaeidae	*Oniticellus formosus*	
22	7704940	Scarabaeidae	*Onitis alexis*	
23	7705320	Scarabaeidae	*Onitis obenbergeri*	
24	7705560	Scarabaeidae	*Onitis uncinatus*	
25	7706360	Scarabaeidae	*Onthophagus depressus*	
26	7706420	Scarabaeidae	*Onthophagus ebenicolor*	
27	7706570	Scarabaeidae	*Onthophagus flavolimbatus*	
28	7707030	Scarabaeidae	*Onthophagus lamelliger*	
29	7707110	Scarabaeidae	*Onthophagus leroyi*	
30	7707470	Scarabaeidae	*Onthophagus pallidipennis*	
31	7707690	Scarabaeidae	*Onthophagus pugionatus*	
32	7707790	Scarabaeidae	*Onthophagus rasipennis*	
33	7707850	Scarabaeidae	*Onthophagus rubens*	
34	7707990	Scarabaeidae	*Onthophagus signatus*	

35	7708100	Scarabaeidae	*Onthophagus sugillatus*	
36	7708360	Scarabaeidae	*Onthophagus vinctus*	
37	7708430	Scarabaeidae	*Pachylomera femoralis*	
38	7708710	Scarabaeidae	*Phalops ardea*	
39	7708750	Scarabaeidae	*Phalops boschas*	
40	7709720	Scarabaeidae	*Scarabaeus bohemani*	
41	7709850	Scarabaeidae	*Scarabaeus cupreus*	
42	7710120	Scarabaeidae	*Scarabaeus lamarcki*	
43	7710170	Scarabaeidae	*Scarabaeus nigroaeneus*	
44	7710470	Scarabaeidae	*Scarabaeus soutspansbergensis*	

Table 11: List of Odonata (dragonflies & damselflies) species that occur in the 2230AC quarter degree grid (Odonata Map, Animal Demography Unit)

#	Species code	Family	Scientific name	Common name	Red list category
1	664170	Aeshnidae	*Anax speratus*	(Eastern) Orange Emperor	LC
2	661180	Chlorocyphidae	*Platycypha caligata*	Dancing Jewel	LC
3	662630	Coenagrionidae	*Azuragrion nigridorsum*	Sailing Bluet	LC
4	663670	Coenagrionidae	*Pseudagrion acaciae*	Acacia Sprite	LC
5	663720	Coenagrionidae	*Pseudagrion commoniae*	Black Sprite	LC
6	663780	Coenagrionidae	*Pseudagrion hamoni*	Swarthy Sprite	LC
7	663460	Coenagrionidae	*Pseudagrion kersteni*	Powder-faced Sprite	LC
8	663880	Coenagrionidae	*Pseudagrion sublacteum*	Cherry-eye Sprite	LC
9	664830	Gomphidae	*Ictinogomphus ferox*	Common Tigertail	LC
10	665790	Gomphidae	*Paragomphus genei*	Common Hooktail	LC
11	667030	Libellulidae	*Brachythemis leucosticta*	Southern Banded Groundling	LC
12	667130	Libellulidae	*Crocothemis erythraea*	Broad Scarlet	LC
13	667140	Libellulidae	*Crocothemis sanguinolenta*	Little Scarlet	LC
14	667690	Libellulidae	*Nesciothemis farinosa*	Eastern Blacktail	LC
15	667760	Libellulidae	*Olpogastra lugubris*	Bottletail	LC Global; NT (RSA)
16	667770	Libellulidae	*Orthetrum sp.*		
17	667900	Libellulidae	*Orthetrum chrysostigma*	Epaulet Skimmer	LC
18	667950	Libellulidae	*Orthetrum julia*	Julia Skimmer	LC
19	668120	Libellulidae	*Orthetrum trinacria*	Long Skimmer	LC
20	668230	Libellulidae	*Pantala flavescens*	Wandering Glider	LC
21	668600	Libellulidae	*Tholymis tillarga*	Twister	LC
22	668620	Libellulidae	*Tramea basilaris*	Keyhole Glider	LC
23	668660	Libellulidae	*Trithemis annulata*	Violet Dropwing	LC
24	668670	Libellulidae	*Trithemis arteriosa*	Red-veined Dropwing	LC
25	668800	Libellulidae	*Trithemis donaldsoni*	Denim Dropwing	LC
26	669120	Libellulidae	*Trithemis kirbyi*	Orange-winged Dropwing	LC
27	669390	Libellulidae	*Zygonyx natalensis*	Blue Cascader	LC
28	669420	Libellulidae	*Zygonyx torridus*	Ringed Cascader	LC
29	661810	Platycnemididae	*Elattoneura glauca*	Common Threadtail	LC
30	661640	Platycnemididae	*Mesocnemis singularis*	Common (Forest/Savanna) Riverjack	LC

The above-mentioned animal species are most likely to occur in the Musina Nature Reserve, especially the animals that are considered threatened.

The bird species that occur within the proposed Magdala prospecting right area has been obtained through the South African Bird Atlas Project version 2 web-based application where the area is

situated over pentads. With regards to the proposed Magdala prospecting right area the pentad id for the area is 2220_3005.

Table 12: Bird species that occur in the ADU Pentad 2220_3005

Ref	Common_group	Common_species	Genus	Species
731		Brubru	*Nilaus*	*afer*
72		Hamerkop	*Scopus*	*umbretta*
533	Babbler	Arrow-marked	*Turdoides*	*jardineii*
432	Barbet	Acacia Pied	*Tricholaema*	*leucomelas*
673	Batis	Chinspot	*Batis*	*molitor*
404	Bee-eater	European	*Merops*	*apiaster*
410	Bee-eater	Little	*Merops*	*pusillus*
409	Bee-eater	White-fronted	*Merops*	*bullockoides*
545	Bulbul	Dark-capped	*Pycnonotus*	*tricolor*
872	Bunting	Cinnamon-breasted	*Emberiza*	*tahapisi*
874	Bunting	Golden-breasted	*Emberiza*	*flaviventris*
154	Buzzard	Common	*Buteo*	*buteo*
628	Camaroptera	Grey-backed	*Camaroptera*	*brevicaudata*
859	Canary	Yellow-fronted	*Crithagra*	*mozambica*
570	Chat	Familiar	*Oenanthe*	*familiaris*
573	Chat	Mocking Cliff	*Thamnolaea*	*cinnamomeiventris*
642	Cisticola	Rattling	*Cisticola*	*chiniana*
4131	Coucal	Burchell's	*Centropus*	*burchellii*
203	Crake	Black	*Zapornia*	*flavirostra*
621	Crombec	Long-billed	*Sylvietta*	*rufescens*
352	Cuckoo	Diederik	*Chrysococcyx*	*caprius*
348	Cuckoo	Jacobin	*Clamator*	*jacobinus*
351	Cuckoo	Klaas's	*Chrysococcyx*	*klaas*
316	Dove	Cape Turtle	*Streptopelia*	*capicola*
321	Dove	Emerald-spotted Wood	*Turtur*	*chalcospilos*
317	Dove	Laughing	*Spilopelia*	*senegalensis*
318	Dove	Namaqua	*Oena*	*capensis*
314	Dove	Red-eyed	*Streptopelia*	*semitorquata*
517	Drongo	Fork-tailed	*Dicrurus*	*adsimilis*
145	Eagle	Brown Snake	*Circaetus*	*cinereus*
137	Eagle	Wahlberg's	*Hieraaetus*	*wahlbergi*
821	Finch	Cut-throat	*Amadina*	*fasciata*
835	Firefinch	Jameson's	*Lagonosticta*	*rhodopareia*
837	Firefinch	Red-billed	*Lagonosticta*	*senegala*
654	Flycatcher	Spotted	*Muscicapa*	*striata*
339	Go-away-bird	Grey	*Crinifer*	*concolor*
192	Guineafowl	Helmeted	*Numida*	*meleagris*
727	Helmetshrike	White-crested	*Prionops*	*plumatus*
424	Hornbill	African Grey	*Lophoceros*	*nasutus*

4129	Hornbill	Southern Red-billed	*Tockus*	*rufirostris*
426	Hornbill	Southern Yellow-billed	*Tockus*	*leucomelas*
851	Indigobird	Village	*Vidua*	*chalybeata*
402	Kingfisher	Brown-hooded	*Halcyon*	*albiventris*
394	Kingfisher	Pied	*Ceryle*	*rudis*
399	Kingfisher	Woodland	*Halcyon*	*senegalensis*
224	Korhaan	Red-crested	*Lophotis*	*ruficrista*
460	Lark	Sabota	*Calendulauda*	*sabota*
507	Martin	Common House	*Delichon*	*urbicum*
506	Martin	Rock	*Ptyonoprogne*	*fuligula*
792	Masked-weaver	Lesser	*Ploceus*	*intermedius*
392	Mousebird	Red-faced	*Urocolius*	*indicus*
521	Oriole	Black-headed	*Oriolus*	*larvatus*
519	Oriole	Eurasian Golden	*Oriolus*	*oriolus*
365	Owlet	Pearl-spotted	*Glaucidium*	*perlatum*
311	Pigeon	Speckled	*Columba*	*guinea*
238	Plover	Three-banded	*Charadrius*	*tricollaris*
649	Prinia	Tawny-flanked	*Prinia*	*subflava*
712	Puffback	Black-backed	*Dryoscopus*	*cubla*
805	Quelea	Red-billed	*Quelea*	*quelea*
412	Roller	European	*Coracias*	*Garrulus* **(NT)**
415	Roller	Purple	*Coracias*	*naevius*
264	Sandpiper	Wood	*Tringa*	*glareola*
588	Scrub Robin	White-browed	*Cercotrichas*	*leucophrys*
708	Shrike	Red-backed	*Lanius*	*collurio*
730	Shrike	Southern White-crowned	*Eurocephalus*	*anguitimens*
4142	Sparrow	Southern Grey-headed	*Passer*	*diffusus*
183	Spurfowl	Natal	*Pternistis*	*natalensis*
737	Starling	Cape	*Lamprotornis*	*nitens*
738	Starling	Greater Blue-eared	*Lamprotornis*	*chalybaeus*
736	Starling	Violet-backed	*Cinnyricinclus*	*leucogaster*
735	Starling	Wattled	*Creatophora*	*cinerea*
75	Stork	Saddle-billed	*Ephippiorhynchus*	*Senegalensis* **(EN)**
763	Sunbird	White-bellied	*Cinnyris*	*talatala*
493	Swallow	Barn	*Hirundo*	*rustica*
503	Swallow	Lesser Striped	*Cecropis*	*abyssinica*
387	Swift	African Palm	*Cypsiurus*	*parvus*
385	Swift	Little	*Apus*	*affinis*
383	Swift	White-rumped	*Apus*	*caffer*
714	Tchagra	Brown-crowned	*Tchagra*	*australis*
527	Tit	Southern Black	*Melaniparus*	*niger*
839	Waxbill	Blue	*Uraeginthus*	*angolensis*
843	Waxbill	Common	*Estrilda*	*astrild*

779	Weaver	Red-billed Buffalo	*Bubalornis*	*niger*
793	Weaver	Red-headed	*Anaplectes*	*rubriceps*
803	Weaver	Southern Masked	*Ploceus*	*velatus*
852	Whydah	Long-tailed Paradise	*Vidua*	*paradisaea*
846	Whydah	Pin-tailed	*Vidua*	*macroura*
447	Woodpecker	Golden-tailed	*Campethera*	*abingoni*

NT = Near Threatened EN = Endangered

5.2.7. 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 Sanitation 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 Magdala prospecting area falls within the Livuvhu and Letaba catchment management area. Primary drainage region A. Secondary drainage region B7. Tertiary drainage A71. Quaternary drainage region A71K (Figure 6).

The proposed Magdala Prospecting project falls within the catchment of the Sand River. Sand river runs along the north-western border of the prospecting right area. There are a number of non-perennial streams occuring within the proposed prospecting right area. These streams drain in an easterly direction towards the Sand River.

Table 13: Summary of the Quaternary Catchments in the vicinity of the proposed Magdala prospecting project area

Primary Catchment	Quaternary Catchment	Area km^2	MAP (mm)	PE_mm (mm)	MASR_mm (mm)
Sandrivier	A71K	1683	305.4	2263.2	3.1

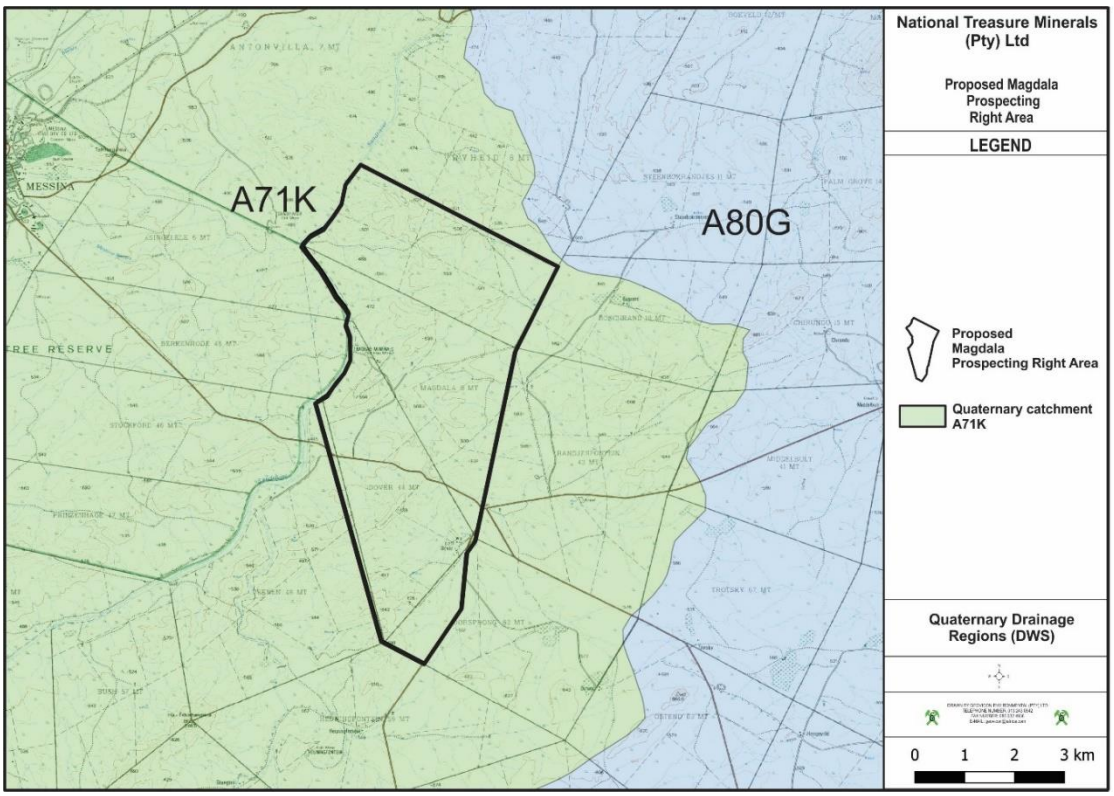


Figure 6: Quaternary catchment areas of the proposed prospecting area.

River diversions

No river diversions are planned for the prospecting activities covered by this report.

Water Authority

The catchment area is government water-controlled catchment. The authority in charge is the Department of Water and Sanitation (Limpopo Regional Office).

5.2.8. Groundwater

5.2.8.1. Aquifer classification.

Shallow perched aquifer

A near surface weathered zone is comprised of transported colluvium and *in-situ* weathered sediments and is underlain by consolidated sedimentary rocks. Groundwater flow patterns usually follow the topography, often coming very close to surface in topographic lows, sometimes even forming natural springs.

Fractured rock aquifers

Most of the groundwater flow will be along the fracture zones that occur in the relatively competent host rock. From experience it can be assumed that numerous major and minor fractures do exist in the host rock. These conductive zones effectively interconnect the strata of the sediments, both vertically and horizontally into a single, but highly heterogeneous and anisotropic unit.

Aquifers associated with dolerite intrusives

Dolerite intrusions in the form of dykes and sills are common, and are often encountered in this area.

These intrusions can serve both as aquifers and aquifuges. Thick, unbroken dykes inhibit the flow of water, while the baked and cracked contact zones can be highly conductive. These conductive zones effectively interconnect the strata of the sediments both vertically and horizontally into a single, but highly heterogeneous and anisotropic unit on the scale of mining. These structures thus tend to dominate the flow of groundwater. Unfortunately, their location and properties are rather unpredictable. Their influence on the flow of groundwater is incorporated by using higher than usual flow parameters for the sedimentary rocks of the aquifer.

5.2.9. Sensitive Landscapes

National Treasure Minerals (Pty) Limited recognises that all streams and wetlands should be treated as sensitive landscapes. To this extent, Geovicon Environmental (Pty) Limited an independent consultant, undertook a desktop-based study over the Magdala prospecting right 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 D** for the **National web-based environmental screening tool report.**

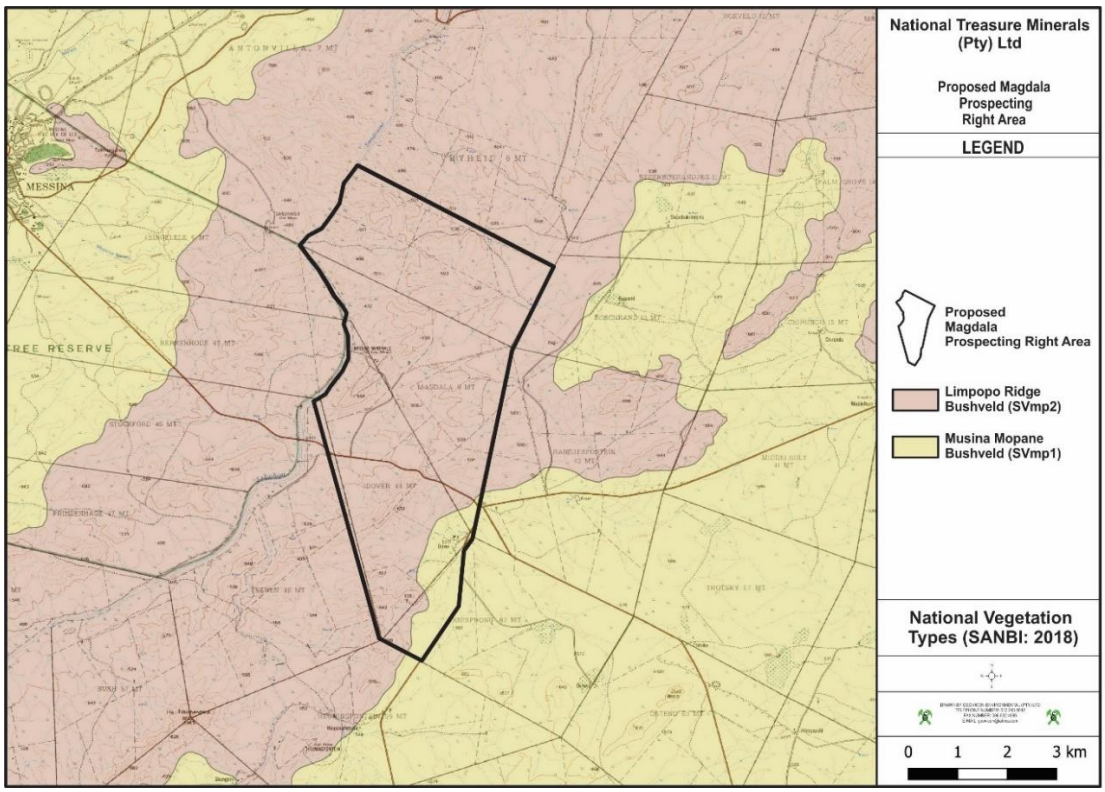


Figure 7: National Vegetation Types in the vicinity of the proposed Magdala prospecting right area (SANBI: 2018).

The proposed Magdala prospecting right area is situated within two natural vegetation types or units that are described by Mucina and Rutherford (2006). These vegetation types include the Limpopo Ridge Bushveld vegetation type/ ecosystem (SVmp2) and the Musina Mopane Bushveld vegetation type/ ecosystem (SVmp1). Both vegetation types are situated within the savanna biome.

SVmp1, Musina Mopane Bushveld

Important Taxa

Tall Trees: *Acacia nigrescens*, *Adansonia digitata*, *Sclerocarya birrea* subsp. *caffra*.

Small Trees: *Colophospermum mopane* (d), *Combretum apiculatum* (d), *Acacia senegal* var. *leiorhachis, A. tortilis* subsp. *heteracantha*, *Boscia albitrunca*, *B. foetida* subsp. *rehmanniana*, *Commiphora glandulosa*, *C. tenuipetiolata, C. viminea*, *Sterculia rogersii*, *Terminalia prunioides*, *T. sericea*, *Ximenia americana*.

Tall Shrubs: *Grewia flava* (d), *Sesamothamnus lugardii* (d), *Commiphora pyracanthoides*, *Gardenia volkensii*, *Grewia bicolor*, *Maerua parvifolia*, *Rhigozum zambesiacum*, *Tephrosia polystachya*.

Low Shrubs: *Acalypha indica*, *Aptosimum lineare*, *Barleria senensis*, *Dicoma tomentosa*, *Felicia clavipilosa* subsp. *transvaalensis*, *Gossypium herbaceum* subsp. *africanum*, *Hermannia glanduligera*, *Neuracanthus africanus*, *Pechuel-Loeschea leubnitziae*, *Ptycholobium contortum*, *Seddera suffruticosa.*

Succulent Shrub: *Hoodia currorii* subsp. *lugardii*.

Herbaceous Climber: *Momordica balsamina*.

Graminoids: *Schmidtia pappophoroides* (d), *Aristida adscensionis*, *A. congesta*, *Bothriochloa insculpta*, *Brachiaria deflexa Cenchrus ciliaris*, *Digitaria eriantha* subsp. *eriantha*, *Enneapogon cenchroides*, *Eragrostis lehmanniana*, *E. pallens*, *Fingerhuthia africana*, *Heteropogon contortus*, *Sporobolus nitens*, *Stipagrostis hirtigluma* subsp. *patula*, *S. uniplumis*, *Tetrapogon tenellus*, *Urochloa mosambicensis*.

Herbs: *Acrotome inflata*, *Becium filamentosum*, *Harpagophytum procumbens* subsp. *transvaalense*, *Heliotropium steudneri*, *Hermbstaedtia odorata*, *Oxygonum delagoense*.

Succulent Herbs: *Stapelia gettliffei*, *S. kwebensis*.

Conservation Least threatened. Target 19%. Only 2% statutorily conserved mainly in the Mapungubwe National Park as well as in Nwanedi and Honnet Nature Reserves. Additionally, about 1% conserved in the Baobab Tree Reserve. Roughly 3% transformed, mainly by cultivation. Erosion is high to moderate.

Remarks The unit is the most diverse mopaneveld type in South Africa. The Musina region has the highest species richness—also relative to *Colophospermum mopane*-dominated areas in Namibia and the Save River Valley in Zimbabwe (F. Siebert et al. 2003). The relationship of this unit with the adjacent and often fragmented parts of SVmp 2 Limpopo Ridge Bushveld is spatially complex. It is very dependent on scale and has not been fully captured on the map. References Louw (1970), O'Connor (1992), Dekker & Van Rooyen (1995), Visser et al. (1996), Du Plessis (2001), Götze (2002), Straub (2002), Jordaan et al. (2004).

SVmp 2, Limpopo Ridge Bushveld

Important Taxa

Tall Trees: *Adansonia digitata* (d), *Acacia nigrescens*, *Sclerocarya birrea* subsp. *caffra*.

Small Trees: *Colophospermum mopane* (d), *Commiphora glandulosa* (d), *C. tenuipetiolata* (d), *Terminalia prunioides* (d), *Acacia senegal* var. *leiorhachis*, *A. tortilis* subsp. *heteracantha*, *Boscia albitrunca*, *Combretum apiculatum*, *C. imberbe*, *Commiphora mollis*, *Ficus abutilifolia*, *F. tettensis*, *Kirkia acuminata*, *Sterculia rogersii*, *Ximenia americana*.

Tall Shrubs: *Catophractes alexandri*, *Commiphora pyracanthoides*, *Gardenia resiniflua*, *Grewia bicolor*, *G. villosa*, *Hibiscus calyphyllus*, *H. micranthus*.

Low Shrubs: *Barleria affinis*, *Blepharis diversispina*, *Neuracanthus africanus*, *Plinthus rehmannii*, *Ptycholobium contortum*.

Woody Climber: *Cissus cornifolia*.

Graminoids: *Aristida adscensionis*, *A. stipitata* subsp. *graciliflora*, *Digitaria eriantha* subsp. *eriantha*, *Enneapogon cenchroides*, *Panicum maximum*, *Schmidtia pappophoroides*, *Stipagrostis uniplumis*.

Succulent Herb: *Tavaresia barklyi*.

Endemic Taxa

Low Shrub: *Pavonia dentata*.

Herb: *Cleome oxyphylla* var. *robusta.*

Conservation Least threatened. Target 19%. Some 18% statutorily conserved, mainly in the Kruger and Mapungubwe National Parks. An additional 2% conserved in the Baobab Tree Reserve (thus together attaining the target). Only about 1% is transformed, mainly for cultivation and mining. Remark The correspondence of this vegetation unit with the landscape units of Gertenbach (1983b) and of others below that occur within the Kruger National Park, is given in Table 9.1. References Louw (1970), Van Rooyen (1978), Gertenbach (1983b), O'Connor (1992), Dekker & Van Rooyen (1995), Visser et al. (1996), Du Plessis (2001), Götze (2002), Straub (2002), Jordaan et al. (2004).

The proposed Magdala prospecting right area is not situated in the vicinity of any threatened ecosystems

The proposed Magdala prospecting right area is not situated within a River National Freshwater Ecosystem Priority Area nor in any strategic water source area.

According to the **South African National Biodiversity Institute, 2018: National Biodiversity Assessment - National Wetlands Map 5,** the proposed Magdala prospecting right area is situated in the vicinity of only one National Wetland area, that is a river, passing through the proposed prospecting site (Figure 8), falling into the Mopane Group 1 and 2 wetland vegetation types (Figure 9).

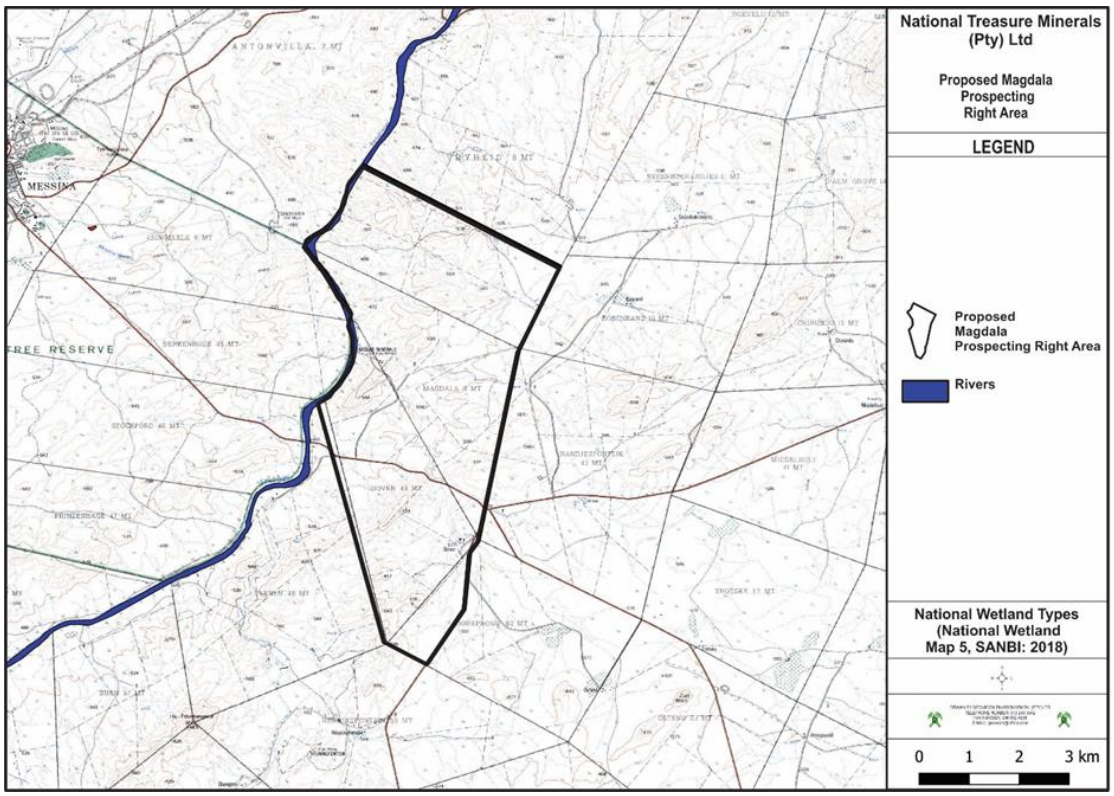


Figure 8: National Wetland Types in the vicinity of the proposed Magdala prospecting right area

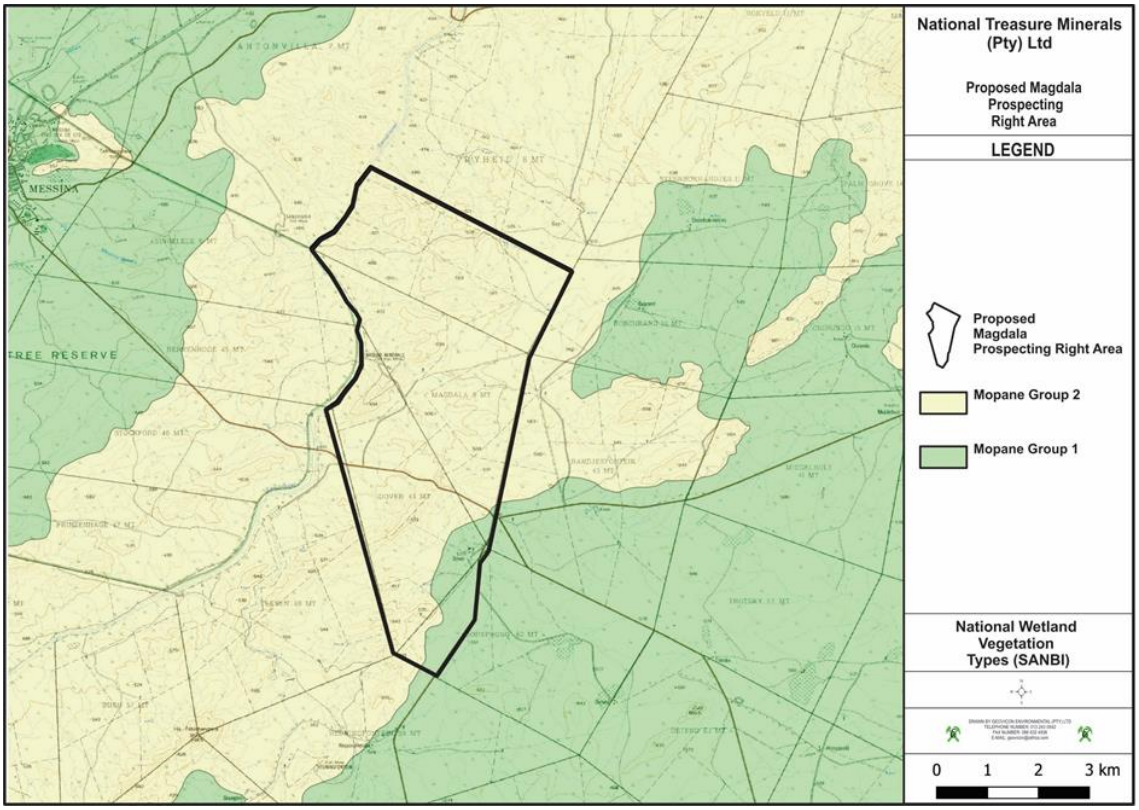


Figure 9: National Wetland Vegetation Types in the vicinity of the proposed Magdala prospecting right area

According to the Limpopo Conservation Plan, Version 2, GIS based electronic application (2013), the proposed Magdala prospecting right area is predominantly situated, according to the conservation assessment categories, within a Critical Biodiversity Area 1 (irreplaceable) (CBA 1) (Figure 10). These areas are required to meet biodiversity patterns and/or ecological process targets. In Critical Biodiversity Area 1 areas it is recommended that no further loss of natural habitat should occur i.e., land in this category, should be maintained as natural vegetation cover as far as possible. These areas of land can act as possible biodiversity offset receiving areas.

Small portions on the eastern side of the proposed Magdala prospecting right area is situated within a critical biodiversity area 2, as well as an ecological support area 1, conservation category area (Figure 10). According to the Limpopo Conservation Plan, version 2 (2013), Critical Biodiversity Area 2 areas are selected to meet biodiversity patterns and/or ecological process targets. For Critical Biodiversity Area 2, areas, it is recommended that the loss of natural habitat should be minimised i.e., land in this category should be maintained as natural vegetation cover as far as possible. These areas of land can act as possible biodiversity offset receiving areas.

Ecological Support Area 1 areas are described as natural, near natural, and degraded areas supporting Critical Biodiversity Areas by maintaining ecological processes, it is further recommended that these areas must be maintained in a functional state, intensification of land-uses must be avoided, and degraded areas rehabilitated to a natural or semi-natural state where possible. In transformed areas, which are important for maintaining ecological processes, current land uses should be maintained, intensification of use (e.g., a transition from agriculture to urban) should be avoided, and where possible areas should be rehabilitated.

The areas that surround the proposed Magdala prospecting area include a protected area (Musina Nature Reserve), Crtitical Biodiversity Area 1 areas, Ecological Support Area 1 areas and Other Natural Areas (Figure 10).

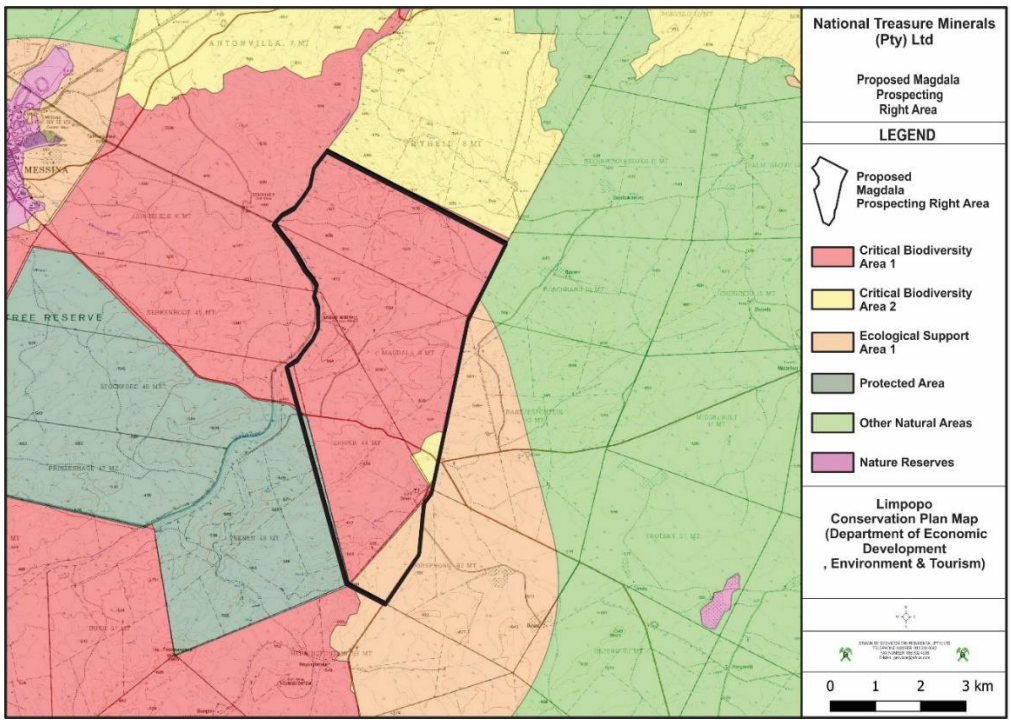


Figure 10: Limpopo Conservation Plan Map (2018)

According to the National South African Conservation Areas Database (SACAD) The proposed Magdala prospecting area is situated within the Vhembe Biosphere Reserve (Figure 11).

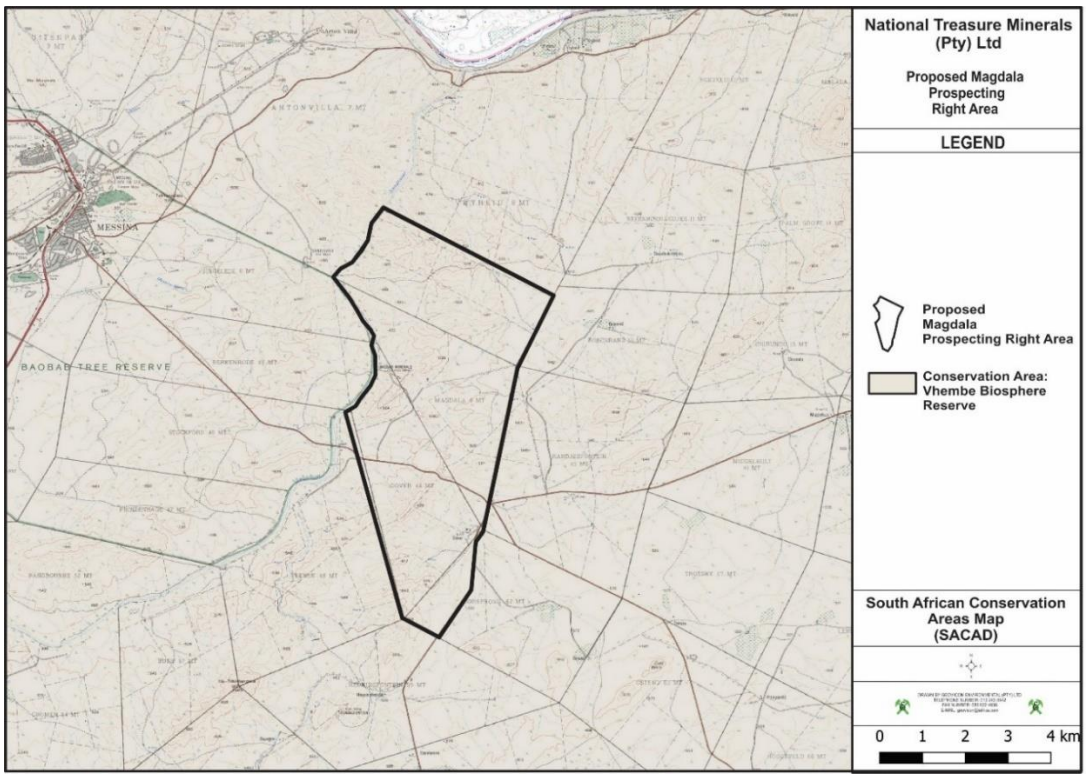


Figure 11: South African Conservation Areas (SACAD_2021)

According to the National South African Protected Areas Database (SAPAD) the proposed Magdala prospecting right area is situated adjacent to the Musina Nature Reserve, which is a protected area. According to the Limpopo Conservation Plan version 2 (2013), protected areas are defined as formal Protected Areas and Protected Areas pending declaration under NEMPAA (Figure 12).

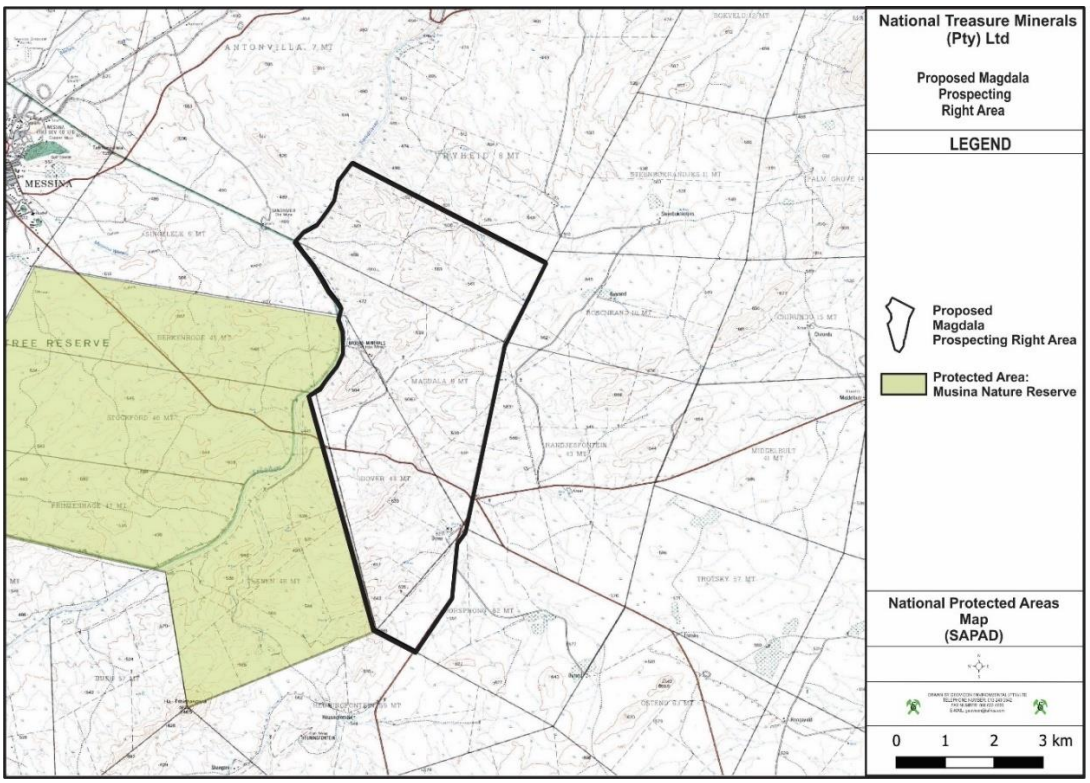


Figure 12: South African Protected Areas in the vicinity of the proposed Magdala prospecting project (SAPAD_2021)

5.2.10. 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 right area has determined that all three categories of air pollution sources are found at the proposed area.

5.2.11. Noise

Potential noise sources from the area may be emanating from the following sources i.e.: roads and surrounding land uses.

5.2.12. Socio-Economic Status

Musina Municipality is a multi racial municipality, due to the influence of the mining industry and the Beit bridge border gate. Only 50% of the population in the municipality speaks Tshivenda as their first

language, followed by 8,8% who speak Sesotho, which is unusual in this area. The population in the municipality is dominated by people of aged 15–36. (StatsSA 2011)

Musina is one of the areas that has been declared a growth point by the Provincial government. The establishment of the Special Economic Zone (SEZ) which will create approximately 19 000 jobs is a true reflection of the fact that that the Municipality is growing very fast.

Population groups found in the municipal area include Venda, Northern Sotho, Tsonga, English, Afrikaners, Shona, Indian, Bangladeshi, Chinese and Somali speaking people.

Musina local municipality in 2001 population was at 39 310 and by Census 2011 the population was at 68 359, and by Community Survey 2016 the population is at 132 009.

5.2.12.1. Population density, growth and location

Table 14: Population by age group

Age- broad age groups by Geography hierrchy for person weight	Musina Local Municipality
0-14 (Children)	40200
15- 34 (Youth)	58841
35- 64 (Adults)	27832
65+ (Elderly)	5135

Table 15: Population per group

Municipality	Black African	Coloured	Indian/ Asian	White	Other	Total population
Musina Local Municipality	127 621	337	406	3645	-	132 009

In general mining is a very concentrated economic sector. Mining is very important to the Vhembe District Municipality Area.

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 project from the beginning and helps to ensure that the project, 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. 982 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 project.

Part 2 of chapter 4 of the EIA Regulations, 2014 contemplate process to be undertaken for the application for environmental authorisation for the proposed project, 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 project was submitted to the Department of Mineral Resources and Energy (DMRE), Limpopo 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 via desktop studies, pertaining to surface water, geohydrological data, topographical analyses, soil surveys, vegetation surveys, wetland surveys and geological conditions. 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 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 Magdala 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. See Table 177 for the results.

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).

Table 16: 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 project 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 Magdala prospecting area impacts/risks

Table 17: Results of the Environmental Impact Assessment for Magdala prospecting area.

6.3.1.1. Construction Phase

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 Site physical surveying and pegging of drilling sites							
The establishment of access 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 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	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
Current land use activities over the area to be used for pre-construction and site establishment activities may need to cease during the undertakeing of the prospecting activities. This may have an impact on the land owners' livelihood should they not be able to use the land for the current land uses. Drilling activities may infringe the livelihood and operations of activities occurring within and immediately adjacent the prospecting right area.	Land use	Without mitigation					Use sites that are unused and that are in the degraded state for the proposed development. This will be done in agreement with the land owner. The siting of the boreholes will be conducted to ensure that rocky ridges, sensitive grasslands, indigenous trees and shrubs, and sites of geological importance are avoided. No-go zones will be instituted around existing infrastructure/facilities and operations occurring within and immediately adjacent to the prospecting right area. No prospecting activities will be undertaken within the instituted no-go zones.
		S	M	S	M	M	
		With mitigation					
		S	L	S	L	L	
The establishment of access and the surveying with pegging of the drilling sites may result in wetland destruction and loss of habitat if the site establishment is not properly conducted.	Sensiive landscape	Without mitigation					Construction activities will be limited to be more than hundred meters from the edge of streams and wetlands. Construction activites will, as far as possible, not be undertaken within the sensitive areas. Should prospecting activities be planned within sensitive areas, the relevant environmental investigations will be conducted in order to define already disturbed areas, for drilling activities.
		S	M	S	M	M	
		With miigation					
		S	L	S	L	L	
	Natural vegetation	Without mitigation					Use sites with most disturbed vegetation cover for the development.
		S	L	S	L	L	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
The establishment of the site (access 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.		With mitigation					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 right area will be made available to the drilling crew for easy identification and avoidance.
		S	L	S	L	N	
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 camp sites will be established within the prospecting right area. No prospecting activities will be undertaken within the areas used for recraeational purposes such as hunting without the consent of the owners or users of that particular land. 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.
		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							
							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.
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 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.	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 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 drill sites should be diverted around these areas. Proper waste management facilities will be put in place at the drilling site.
		S	L	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	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
							Any hydrocarbon spill from the site establishment will be remediated as soon as possible.
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 Magdala prospecting area are complied with.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	
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	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
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.
		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 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.
		S	M	S	H	H	
		With mitigation					
		S	L	S	L	L	
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	Socio economic aspects	Without mitigation					Recruitment will not be undertaken on site.
		S	L	S	L	L	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
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.		With mitigation					
		S	L	S	L	N	

6.3.1.2. 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 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 iron ore 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	Natural Vegetation and Soils	Without mitigation					Use sites with most disturbed vegetation cover and ensure minimal disturbance of vegetation when conducting drilling operations. 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 iron ore 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
		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							
render the land not usable after the backfilling operation. During drilling activities, veld fires can manifest especially during the winter months from the drilling sites. If not controlled, the fires can destroy large areas of veld and could result in the loss of							disposed of at a licensed waste disposal facility. Pictures of possible plant species that may be present in the prospecting right area will be made available to the drilling crew for easy identification and avoidance. All waste generated from the drilling sires will be collected in proper receptacles and removed to a 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. No trees or shrubs will be felled or damaged for the purpose of obtaining firewood The outbreak of any uncontrolled fire shall be reported to the site manager immediately and the necessary steps shall be taken to control and extinguish the fire. Smoking shall be prohibited in the vicinity of flammable substances.

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
vegetation to landowners and surrounding land owners.							
Current land use activities over the area to be used for pre-construction and site establishment activities may need to cease during the undertakeing of the prospecting activities. This may have an impact on the land owners' livelihood should they not be able to use the land for the current land uses. Drilling activities may infringe the livelihood and operations of activities occurring within and immediately adjacent the prospecting right area.	Land use	Without mitigation					Use sites that are unused and that are in the degraded state for the proposed development. This will be done in agreement with the land owner. The siting of the boreholes will be conducted to ensure that rocky ridges, sensitive grasslands, indigenous trees and shrubs, and sites of geological importance are avoided. No-go zones will be instituted around existing infrastructure/facilities and operations occurring within and immediately adjacent to the prospecting right area. No prospecting activities will be undertaken within the instituted no-go zones.
		S	M	S	M	M	
		With Mitigation					
		S	L	S	L	L	
Drilling activites may result in wetland destruction and loss of habitat if the site establishment is not properly conducted.	Sensitive landscape	Without mitigation					Operation of the drilling site will be limited to be more than hundred meters from the edge of streams and wetlands. The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands.
		S	M	S	M	M	
		With mitigation					

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
		S	L	S	L	L	Drilling activities will be limited to be more than hundred meters from the edge of streams and wetlands. Drilling activites will, as far as possible, not be undertaken within the sensitive areas. Should prospecting activities be planned within sensitive areas, the relevant environmental investigations will be conducted in order to define already disturbed areas, for drilling activities.
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.	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. No camp sites will be established within the prospecting right area. No prospecting activities will be undertaken within the areas used for recraeational purposes such as hunting without the consent of the owners or users of that particular land. 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	
		With 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 will have negative impacts on the surrounding clean water environment. These will cause an increase in the turbidity and will increase 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	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
The drill rigs and towers used during the drilling operations will be visible from the nearby residents and properties.	Visual Aspects	Without mitigation					Ensure that the period used for the drill rigs is optimised to ensure that the drill rigs are moved from one site to another over short periods.
		S	L	S	L	L	
		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
		S	M	S	H	H	
		With Mitigation					

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
		S	S	S	L	L	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 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.

6.3.1.3. 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 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 statement approved by the mine management. See description of the rehabilitation plan and management actions in the EMPR. Ensure that contamination of the rehabilitation area by iron ore 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 drilling sites.	Land Use	Positive impact					
		Without mitigation					

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
DECOMMISSIONING AND CLOSURE PHASES							
The use of vehicles/machinery during the 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.	Soils and Natural Vegetation	S	M	S	M	M	Ensure that the rehabilitation work is done in such a manner that the environment is protected from probable spillages and contamination by iron iore 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	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							
may have elevated silt load, which may cause pollution of the nearby water environment.							
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 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 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 area.

6.5. ENVIRONMENTAL IMPACT STATEMENT

National Treasure Minerals (Pty) Limited has applied for a prospecting right over the Magdala prospecting area. The prospecting operation will involve the systematic removal of Iron ore within the prospecting right area. Diamond core drilling will be used or the exploration 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 project is situated within the Musina Local Municipality situated in an area characterised by elevated undulating plateau with streams such as the Sand River. A variety of soil types were identified within the project area, which include recharge, interflow and responsive soils. The land uses over the project area correspond to the soils found in the area and include mainly woodlands.

6.5.2. Summary of key findings of the environmental impact assessment

During the proposed prospecting operation impacts may 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. . 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 low to negligible significance.

Land use will not change. Several landowners and land occupiers within the proposed area may be affected although on a temporary basis due to the need to access the sites and establishment. 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 (proposed boreholes) of the development area has shown limited presence of natural vegetation.

Storm water runoff from the dirty water areas of the drilling sites 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 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 facilities within Musina. The employees will be given strict instruction not to undertake 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 is will be submitted 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.

6.6. Aspects for Inclusion as conditions of the Environmental Authorisation

In authorising the proposed Magdala prospecting project; the following conditions should form part of the environmental authorisation:

- National Treasure Minerals (Pty) Limited may not alter the location of any of the project 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.
- The EMPr must be implemented fully at all stages of the proposed project
- National Treasure Minerals (Pty) Limited must limit night-time operations. This would be relevant for all work taking place at night within 150 m 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 impact assessment 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 PROJECT 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 this BAR and EMPr. These comments will be addressed the 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 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

In authorising the proposed Magdala prospecting project; the following conditions should form part of the environmental authorisation:

- National Treasure Minerals (Pty) Limited may not alter the location of any of the project 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.
- The EMPr must be implemented fully at all stages of the proposed project
- National Treasure Minerals (Pty) Limited must limit night-time operations. This would be relevant for all work taking place at night within 150 m 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).

6.9. 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 Magdala prospecting project.

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 provided 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 together with 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 No.: 3847

Company: Geovicon Environmental (Pty) Limited

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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 more than 20 years' experience in the geological and environmental consulting field. Geovicon Environmental (Pty) Limited has successfully completed consulting work in the Mining sector (coal, 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 directors 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 and environmental impact assessment with the University of Mpumalanga's Centre for Environmental Management. 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 and Energy (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 areas similar to the proposed Magdala prospecting project as an environmental assessment practitioner. Mr Shakwane is the environmental assessment practitioner for the environmental impact assessment for the proposed Magdala prospecting project.

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 in terms of section 24H of the National Environmental Management Act, (Act 107 of 1998) and section 20(3) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003), respectively. He is also a member of the International Association for Impact Assessment (IAIASA), South Africa and serves under the IAIASA Mpumalanga Regional Committe.

Over the past years Geovicon Environmental (Pty) Limited has formalised working relationships with companies that offer expertise in the following fields i.e., Geohydrology, Civil and Geotechnical Engineering, Geotechnical Consultancy, Survey and Mine Planning and Soil & Land Use Consultancy. Geovicon Environmental (Pty) Limited is an independent consulting company, which has no interest in the outcome of the decision regarding the proposed Magdala prospecting project basic assessment process.

2. DESCRIPTION OF THE ASPECTS OF THE ACTIVITY

2.1. DATA GATHERING

Relevant information regarding the potential of the identified Prospecting Right 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.

2.2. 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 R508 Provincial Road, a secondary road and a 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 sump. The sumps will be backfilled manually by spade, 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 Right 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 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 project, 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 Layout Plan.

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 Magdala 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;
- 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 MAGDALA PROSPECTING AREA ACTIVITIES

The following actions will be undertaken by National Treasuure 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 haul roads that were used for access during prospecting 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 three-monthly basis if and where required.

4.2.1.1. 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 measures to remedy residual or cumulative impacts from 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 Project

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 18: Environmental Management Programme for the proposed Magdala prospecting project.

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 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.
				No soil stripping will be allowed during site establishment.	Appointed contractor.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
			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.	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.
Loss of soils, erosion of the soils and impacts on land owner's livelihood.	Soils, Land Use and Land Capability.			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 rocky ridges,	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
				sensitive grass lands, indigenous trees and shrubs and sites of geological importance are avoided. No-go zones will be instituted around farm dwellers, existing infrstructure and any operaion immediately and adjacent to the prospecting areas. No prospecting activities will be undertaken within the instituted no-go zones.	Appointed contractor	Undertake regular inspections.	ECO monthly. Site Manager.	During construction phase.
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.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				No strip of topsoil and vegetation will be allowed during site establishment.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				Ensure minimal disturbance of vegetation when conducting geophysical surveys and geological mapping.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly	During construction phase.
				Any area that may result into the disturbance of the vegetation cover must be rehabilitated immediately on discovery.	Appointed contractor and site manager.	Visual monitoring and 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
		Ensure that the animal life within in the area is not affected by the proposed project	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 camp sites will be established within the prospecting right area. 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.
Migration of animal life due to disturbance caused by proposed project.	Animal Life			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.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				Use sites with most degraded environment for the site development.	Appointed contractor and site manager.	Visual monitoring 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 the nearby steams and within the	Surface and Ground Water.	Ensure that the establishment of the area and its associated infrastructure does not have detrimental impact on nearby	The quality of streams and groundwater within the site will comply with the target DWS target water quality objectives.	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	Appointed contractor and site manager.	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
groundwater regime.		stream and the groundwater regime.	Construction will be in compliance with the regulations under the GN704.	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 drill sites should be diverted around these areas. Proper waste management facilities will be put in place at the 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.	Regular inspections Regular inspections Regular inspections Regular inspections	ECO monthly. ECO monthly. ECO monthly. ECO monthly.	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 sensitive landscapes.	Maintain the current state of the sensitive landscapes within the area (farm dams and seepage zone).	Construction activities will be limited to be more than hundred meters from the edge of streams and wetlands. Construction activities will, as far as possible, not be undertaken within the sensitive areas. Should prospecting activities be planned within sensitive areas, relevant environmental investigations will be conducted in order to define already disturbed areas, for drilling activities.	Appointed contractor and site manager.	Inspection to ensure compliance with the action plan will be conducted at the construction site.	ECO will conduct the inspections monthly.	Whenever construction is undertaken near the sensitive landscapes.
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.	Dust suppression, using water, will be conducted at areas with excessive dust emissions. Traffic will be restricted to be demarcated areas and traffic volumes	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.

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 speeds within the construction site will be controlled.				
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.	Applicant and site manager.	The constructed perimeter berms will be inspected for compliance with the design specifications.	Mine Engineer on a monthly basis.	Throughout the construction phase.
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 identified within the prospecting project area. 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 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
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, 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 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 iron ore 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.	Appointed contractor and site manager.	Regular inspections	ECO monthly.	During the operational phase of the area.
				All boreholes and sumps will be rehabilitated to pre-drilling conditions.	Appointed contractor.	Regular inspections	ECO monthly.	During the operational phase of the area.
				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.	Appointed contractor.	Regular inspections.	ECO monthly.	During the operational phase of the area.
				All waste generated from the drilling sires will be collected in proper receptacles and removed top	Appointed contractor.	Inspection of the site will be conducted.	ECO monthly.	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
				registered disposal facilities e.g., sewage treatment plant, sold waste disposal site or hydrocarbon recycling or treatment facilities.				
				No trees or shrubs will be felled or damaged for the purpose of obtaining firewood. The outbreak of any uncontrolled fire shall be reported to the site manager immediately and the necessary steps shall be taken to control and extinguish the fire. Smoking shall be prohibited in the vicinity of flammable substances.	Appointed contractor.	Inspection of the site will be conducted.	ECO monthly.	During the operational phase of the area.
				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 rocky ridges, sensitive grass lands, indigenous trees and shrubs and sites of geological importance are avoided. No-go zones will be instituted around farm dwellers, existing infrstructure and any operaion immediately and adjacent to the prospecting areas. No prospecting activities will be undertaken within the instituted no-go zones.	Appointed contractor.	Inspection of the site will be conducted.	ECO monthly.	During the operational phase of the area.
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. No camp sites will be established within the prospecting right area.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During operational phase.
				As much as possible sites with degraded environment will be used or the drilling purposes.	Appointed contractor and site manager.	Visual monitoring and 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
				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 operational phase.
The drilling operation may result in the generation of surface water runoff contaminated with silt (sedimentation) and possibly hydrocarbon fluids should spillages occur.	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	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During operational phase.
				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.	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.	Visual monitoring and inspections.	ECO monthly.	During operational phase.
		Ensure that drilling operation does not have a detrimental impact on the number of aquifers underlain by the site.		Ensure that the land owners' borehole yield is observed during the drilling operation. Should it be proven that the operation is indeed affecting the	Appointed contractor and site manager.	Regular meetings with landowners.	Site manager.	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
			Aquifers will not be affected.	quantity and quality of groundwater available to users and surrounding water resources, the affected parties must be compensated. Ensure minimum distance as per legislation is kept from the waste disposal site. Ensure that an experienced geologist must oversee the drilling process.	Appointed contractor and site manager	Visual monitoring and inspections.	ECO monthly.	During operational phase.
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. Correct speed will be maintained at the proposed area site. Vehicle maintenance must be conducted regularly to avoid excessive diesel fumes.	Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor and site manager.	Visual inspections of areas with possible dust emissions. Regular speed checks. Regular inspections.	ECO monthly. Site manager monthly. ECO monthly.	Throughout the operational phase. Throughout the operational phase. During operational phase.
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 streams and wetlands. The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands. Drilling activities will, as far as possible, not be undertaken within the sensitive areas. Should prospecting activities be planned within sensitive areas, relevant environmental investigations	Appointed contractor.	Inspection to ensure compliance with the action plan.	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
				will be conducted in order to define already disturbed areas, for drilling activities.				
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.	Applicant and site manager.	The constructed perimeter berms will be inspected for compliance with the design specifications.	Mine Engineer on a monthly basis.	During operational phase.
Damage or destruction of sites with archaeological and cultural significance.	Sites of archaeological and cultural importance.	Ensure that the operational activities do not have detrimental impacts on the heritage sites.	The drilling operations 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 drilling sites will be away from any identified grave site or heritage sites. A hundred-meter buffer will be created between the sites and the proposed camp and drilling sites.	Appointed contractor.	The site will be monitored for any prospecting related damages on a regular basis.	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
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. Movement of mine vehicles and machinery will be limited to demarcated routes, which will be rehabilitated when no longer in use.	Appointed contractor. 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. Rehabilitation site will be inspected to monitor areas with compaction or	Site manager will conduct the inspections monthly. Site manager. ECO will conduct the inspections monthly.	Throughout the decommissioning and closure phases. 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
						hydrocarbon contamination.		
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 rehabilitation site.	Noise.	Ensure that the rehabilitation activities do not have detrimental impacts on people.	Ensure that the noise from the rehabilitation activities do not exceed the SANS 10103 Rating Level.	Smaller or less noisy equipment should where possible be used when working near receptors.	Appointed contractor and site manager. Site manager and appointed contractor.	Regular site check. Regular site check.	Site manager. Site manager.	Throughout the decommissioning phase. 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
				Equipment will be well maintained and fitted with the correct and appropriate noise abatement measures.				
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 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 is submitted to the Department of Mineral Resources 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 project 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 is made available to the interested and affected parties during the public participation process for the proposed project. Note that the consultation of interested and affected parties included the owners of the properties directly affected by the proposed project and owners of land immediately adjacent the proposed project area.

The above confirms that the land owners and interested and affected parties will be consulted regarding the environmental objectives in relation to the closure of the proposed project.

6.3 REHABILITATION PLAN FOR THE PROPOSED PROJECT

In terms of NEMA EIA Regulations, 2014, a Basic Assessment Report and EMPr must indicate the impact management measures. One of the impact management measures for the proposed prospecting activity is the rehabilitation of the disturbance caused by the prospecting activities. For the purpose of this report the rehabilitation measures for the proposed prospecting project will be provided in the form of a rehabilitation plan, described below.

The rehabilitation plan for the proposed projects describes the physical activities that will be undertaken to implement the closure plan during the course of the prospecting activities. The plan will include the following that are discussed below i.e.:

- Prospecting borehole layout
- Detail rehabilitation standards; and
- Detail the rehabilitation schedule.

6.3.1 Prospecting Borehole Layout

The prospecting layout for the proposed prospecting project will developed to minimise negative impacts on the environment such that after land use is achieved. This layout will be developed to be in line with the closure objectives provided in this report.

The development of the prospecting layout for the proposed prospecting project will take into consideration all identified no-go areas within the prospecting right area.

In view of the above the layout plan will be developed such that the following is achieved i.e.:

- Minimise the disturbed area;
- Avoid impacts on identified sensitive areas; and
- Views of affected communities and interested and affected parties to be considered

6.3.2 Rehabilitation Standards

The following rehabilitation standards have been developed for the proposed prospecting project. These have been developed to ensure that rehabilitation will achieve the following at the project area i.e., preserve the environment, protect against environmental damage and repair any disturbance caused during the prospecting activities.

- Rehabilitation plans will be developed before commencement of the prospecting project
- All legal requirements will be met before commencement of the prospecting project
- All disturbed areas will be rehabilitated to restore affected environment
- Disturbed areas will be maintained for the duration of the prospecting activities such that no secondary impacts results
- All possible source of contaminants will be identified and measures taken to prevent and manage spillages
- Adequate monitoring programme must be developed and implemented
- Ensure communication with affected communities and interested and affected parties

6.3.3 Decommissioning of The Prospecting Operation

6.3.3.1 Contractor Campsite

No campsite will be established within the project area. Facilities within Musina will be used for this purpose. In view of the above no demolishing and dismantling will be undertaken.

6.3.3.2 Roads

All constructed roads that will no longer be required by the landowner/tenant, shall be removed and/or rehabilitated to the satisfaction of the Regional Manager.

Any gate or fence erected by the holder which is not required by the landowner/tenant, shall be removed and the situation restored to the pre prospecting situation.

6.3.3.3 Drilling site

Drilling Sump

The sumps will be backfilled and covered with topsoil.

Borehole

The borehole logs will be removed from site and the borehole plugged and covered with topsoil.

Drill Rig, Drill Rod Stand and Drill Rig stockpile.

The rods and stand will be placed in the drill rig that will be driven away from site.

Geologist sampling area

This area will have a tent/gazebo, sampling equipment and waste collection receptacles that will be placed at the LDV and taken away from the site.

6.3.3.4 Post Closure Land Use

Post closure, the prospecting area will consist of re-vegetated areas with vegetation cover comparable to the surrounding areas. No prospecting related infrastructure will remain on the prospecting site. The land use after prospecting will conform to the pre-prospecting topography. After rehabilitation, the areas affected by prospecting will be stable and erosion free.

6.3.3.5 Rehabilitation Schedule

Table 19 below provides the schedule of actions for rehabilitation, decommissioning and closure of the prospecting project, which will ensure avoidance, minimisation and management of residual or latent impacts from the proposed prospecting activities linked to the prospecting works programme including assumptions and schedule drivers.

No campsite will be established within the project area. Facilities within Musina will be used for this purpose.

Roads will not ideally be constructed however should the existing roads not provide the required access, tracks or road will be used.

Concurrent rehabilitation of disturbed areas will be undertaken as drilling continues. In view of the above, the schedule provides rehabilitation of roads.

Table 19: Rehabilitation Schedule

Rehabilitation Actions	**Assumptions and Schedule drivers**
Rehabilitation, Decommissioning and Closure	
Activity/Area: Roads	
Any foreign material (used to construct roads) will be removed and disposed of in an approved manner prior to rehabilitation.	All spills and waste material from the site would have been removed before rehabilitation.

Rehabilitation Actions	**Assumptions and Schedule drivers**
Roads and tracks with significant damage will be ripped or ploughed. Where necessary, fertilizer will be applied over the area.	Monitoring of the rehabilitated area will be conducted to ensure that the area maintains a sustainable environment. Except for farm roads, no tracks and infrastructure related to the prospecting operation will remain in place after the decommissioning phase. Ripping shall be at 90° to the inherent slope
Should the revegetation show to be slow, soil analyses will be conducted and the seeding be done in accordance top the results of the analyses.	
Activity/Area: Drill Site	
Drill site sumps	
Sumps will either be emptied of the water or allowed water to evaporate.	Rehabilitation of the drilling site will commence immediately after completion of the drilling. The area disturbed is small – approximately 1 m x 1 m x1 m per sump per drill site. All spills and waste material from the site would have been removed before rehabilitation. Monitoring of the rehabilitated area will be conducted to ensure that the area maintains a sustainable environment. The sumps will be rehabilitated in such a manner to return the area to as close as possible to its pre-drilling environment.
The sumps will be backfilled with subsoils and thereafter topsoil removed from the sump.	
Where necessary, fertilizer will be applied over the area.	
The area will be allowed to seed naturally. Should the revegetation show to be slow, soil analyses will be conducted and the seeding be done in accordance top the results of the analyses.	
Drill site boreholes	
All unused borehole logs will be removed from site and disposed of in an appropriate manner.	Rehabilitation of the drilling site will commence immediately after completion of the drilling. All spills and waste material from the site would have been removed before rehabilitation. Monitoring of the rehabilitated area will be conducted to ensure that the area maintains a sustainable environment.
The borehole plug must be placed at least 0.5 m below surface.	
The borehole will then be covered and levelled with topsoil.	
Where necessary, fertilizer will be applied over the area.	
Post Site Closure	
Activity/Area: Entire Prospecting Right Area (Care, Maintenance and Monitoring)	

Rehabilitation Actions	Assumptions and Schedule drivers
Visual inspection of all rehabilitated areas will be conducted (ad hoc inspections will be conducted).	A dedicated manager will be employed for ensuring that the area is inspected and all areas requiring attention will be identified and issues addressed. Post closure, the prospecting area will consist of re-vegetated areas with vegetation cover comparable to the surrounding areas. The area will conform to the pre-prospecting topography. The areas affected by prospecting will be stable and erosion free.
Follow up erosion control and seeding over areas showing erosion gullies and significantly slow revegetation will be conducted.	

6.4 COMPATIBILITY OF THE REHABILITATION PLAN WITH THE CLOSURE OBJECTIVES

The rehabilitation plan was 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 Magdala 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 will be determined and is, with its associated reports included in the BAR.

6.6 METHOD OF PROVIDING FOR THE FINANCIAL PROVISION

According to Regulation 8 of the Regulations pertaining to the 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 20: Financial provision for Magdala Prospecting Right

CALCULATION OF THE QUANTUM							
Mine:	Magdala Prospecting Project - National Treasure Minerals (Pty) Lim	**Location:**	Magdala Prospecting Project				
Evaluators:	O.T Shakwane of Geovicon Environmental (Pty) Limited	**Date:**	11-Feb-22				
			A	**B**	**C**	**D**	**E=A*B*C*D**
No.:	**Description:**	**Unit:**	**Quantity**	**Master rate**	**Multiplication factor**	**Weighting factor 1**	**Amount (Rands)**
			Step 4.5	**Step 4.3**	**Step 4.3**	**Step 4.4**	
1	Dismantling of processing plant & related structures	m^3	0,00	R 18,36	1,00	1,10	R 0,00
2 (A)	Demolition of steel buildings & Structures	m^2	0,00	R 255,82	1,00	1,10	R 0,00
2 (B)	Demolition of reinforced concrete buildings & structures	m^2	0,00	R 376,99	1,00	1,10	R 0,00
3	Rehabilitation of access roads	m^2	0,00	R 45,78	1,00	1,10	R 0,00
4 (A)	Demolition & rehabilitation of electrified railway lines	m	0,00	R 444,30	1,00	1,10	R 0,00
4 (B)	Demolition & rehabilitation of non electrified railway lines	m	0,00	R 242,34	1,00	1,10	R 0,00
5	Demolition of housing &/or administration facilities	m^2	0,00	R 511,63	1,00	1,10	R 0,00
6	Opencast rehabilitation including final voids & ramps	ha	0,00	R 268 200,17	1,00	1,10	R 0,00
7	Sealing of shafts, adits & inclines	m^3	0,00	R 137,33	1,00	1,10	R 0,00
8 (A)	Rehabilitation of overburden & spoils	ha	0,24	R 178 800,11	1,00	1,10	R 47 203,23
8 (B)	Rehabilitation of processing waste deposits & evaporation ponds (basic)	ha	0,00	R 222 692,31	0,80	1,10	R 0,00
8 (C)	Rehabilitation of processing waste deposits & evaporation ponds (acidic)	ha	0,00	R 646 804,03	0,80	1,10	R 0,00
9	Rehabilitation of subsidised areas	ha	0,00	R 149 733,48	1,00	1,10	R 0,00
10	General surface rehabilitation (Plugging of 42 boreholes)	ha	0,24	R 141 639,86	1,00	1,10	R 37 392,92
11	River diversions	ha	0,00	R 141 639,86	1,00	1,10	R 0,00
12	Fencing	ha	0,00	R 161,56	1,00	1,10	R 0,00
13	Water management	ha	0,00	R 53 855,46	1,00	1,10	R 0,00
14	2 to 3 years of maintenance & aftercare	ha	0,24	R 18 849,42	1,00	1,10	R 4 976,25
15 (A)	Specialist study	SUM	0,00	R 200 000,00	1,00	1,00	R 0,00
15 (B)	Specialist study	SUM	0,00	R 0,00	1,00	1,00	R 0,00
						Sub Total 1	
						(Sum of items 1 to 15 Above)	**R 89 572,40**
	Multiply by Weighting factor 2	1,1		R 8 957,24			R 8 957,24
1	Preliminary and general	Add 12% if subtotal 1 is less than R100,000,000.00					R 10 748,69
2	Contingencies	Add 10% of subtotal 1					R 8 957,24
						Sub Total 2	
		(Subtotal 1 plus sum of management & contingencies)					**R 118 235,56**
						VAT (15%)	R 17 735,33
		(Subtotal 2 plus VAT)			**GRAND TOTAL**		**R 135 970,90**

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 a prospecting right, and in order to ensure compliance with the environmental management programme and to assess the continued appropriateness and adequacy of the environmental management programme National Treasure Minerals (Pty) Limited will:

- Conduct monitoring on a continuous basis (see EMPr)
- Conduct performance assessments of the environmental management programme annually
- 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

National Treasure Minerals (Pty) Limited has developed procedures for environmental related emergencies for Magdala prospecting area which is explained in more detail below. Note that these procedures will be revised by the responsible person. The date of commencement of the revised procedures will always be indicated to prevent confusion

7.3.1 Introduction

An effective, comprehensive, well considered and tested environmental emergency preparedness and response plan has the potential to save lives, prevent unnecessary damage to the company and other property and to manage environmental risk. The aim 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. However, the emergency preparedness and response should be reviewed and revised where necessary.

7.3.2 What is an Environmental Emergency?

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
- A chemical spill
- Transportation accidents
- Other environmental emergencies requiring special services

7.3.3 Purpose of the procedure

To provide guidance to all mine employees and contractors in the event of an environmental emergency at Magdala prospecting area and related to its activities.

This procedure is developed so as to provide guidance to ensure that:

Danger to the environment, personnel, contractors and the non-employee is minimised.

- Legal liability is managed and minimised.
- Public relations are effectively managed during and following emergencies.
- Reporting is effective and corrective/follow-up actions are implemented.

7.3.4 Who should use these procedures?

This procedure contains information relevant to all employees and contractors of the mine. It is the responsibility of all employees to familiarise themselves with the contents of this procedure. Furthermore, mine management should ensure that all contractors have access to this procedure and the requirements contained herein (See Table 21).

7.3.5 Responsibilities

Table 21: Responsibilities

Mine Management	National Treasure Minerals (Pty) Limited is responsible for the safety and well-being of employees working at Magdala prospecting area as well as the protection of the environment from unnecessary negative impacts. The management of the prospecting area has a responsibility to initiate a warning process should an emergency occur or should something at the prospecting area deteriorate in an uncontrolled manner presenting a risk to employees, the public or the environment.
Local Government(s)	Local governments have the responsibility to warn residents of a hazardous situation, these warnings must be based on information provided by the prospecting area.
All employees, contractors and other relevant parties	All employees, contractors and other relevant parties should ensure that they are familiar with this procedure.

7.3.6 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

7.3.7 Emergency equipment and supplies

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

7.3.8 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 are available on site include:

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

7.3.9 Training

The mine management ensures that employees are trained regarding potential emergencies that may occur at Magdala prospecting area

7.3.10 Review of procedure

To ensure that the procedure is adequate, management will review the procedure at any time deemed necessary and change the emergency procedures at Magdala prospecting area.

7.3.11 Emergency Response flowchart for National Treasure Minerals (Pty) Limited

The emergency response at Magdala prospecting area is undertaken, as shown in Figure 13.

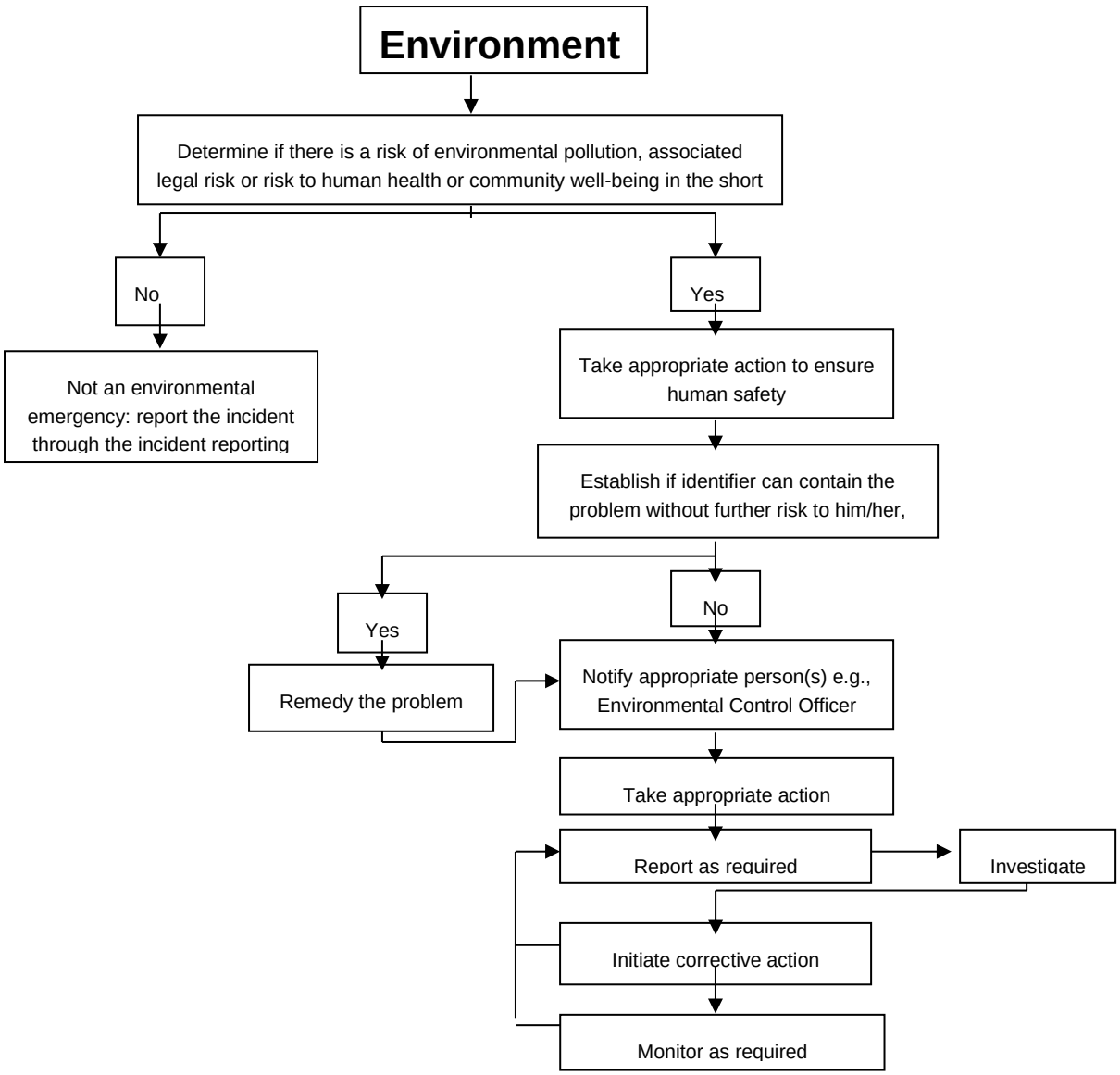


Figure 13: Emergency response.

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), Magdala 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 Magdala 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 Magdala prospecting area as required by the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

7.4.1 Objectives and Legal Requirements

The following are the objectives of the environmental awareness plan

- To identify the necessary training needs for different categories of employees in the mine
- To train all employees on environmental issues on the mine

The following legislation apply to this environmental awareness plan

- Employment Equity Act, 1998 (Act 55 of 1998)
- National Environmental Management Act, 198 (Act 77 of 1998)
- Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

7.4.2 Manner of informing employees of risks to avoid pollution and degradation of the environment

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 Magdala prospecting area. The following categories are considered, *viz*:

- Senior Management
- Middle management (Environmental Officers)
- Supervisors
- Operators
- Visitors and contractors

Each of these categories have different responsibilities and therefore have different knowledge requirements and environmental awareness training needs, to obtain that knowledge.
The different categories and environmental awareness and training needs are summarised below in Table 22:

Table 22: Environmental Awareness Matrix.

Occupation Category	EMP Responsibility	Required knowledge and output	Training required	Interval
Senior management	Managing	Understand the EMP objectives	Induction and post-leave awareness/training	Annually
		Knowledge of the prospecting area's significant impacts and risks.	EMP Workshops	Once off
		Review the EMP actions	EMP objectives and actions /Management reviews	Annually
		Knowledge of EMP Procedures (awareness and emergency)	Specific training program on EMP	Once off, refresh annually
Middle and Junior management	Implementing and daily management	Knowledge of prospecting area's significant environmental impacts	EMP Review workshops	Annually
		Setting of EMP objectives for environmental improvement	EMP Review workshops	Annually
		Knowledge of EMP procedures (awareness and emergencies)	Specific training programmes on EMP	Once off, refresh annually
	Adhering to procedures to control impacts	Understand EMP objectives	Induction and post-leave training	Annually
		Knowledge of significant impacts	Induction and post-leave training	Annually
		Knowledge of procedures (awareness and emergency)	EMP Review workshop	Annually
Plant and machine operators, assemblers and elementary occupations	Executing assigned EMP actions Controlling work activities to prevent impacts.	General awareness of EMP impacts and objectives.	Induction and post-leave training	Continuously
		Understand environmental requirements relating to work	Induction and post-leave training	Annually

Occupation Category	EMP Responsibility	Required knowledge and output	Training required	Interval
		activities and consequences of not following requirements		
		Knowledge of procedures	Training and information sharing	Continuously
Visitors and contractor	Managing and controlling daily actions to prevent or control impacts	Basic awareness of EMP	Induction or specific modules/ awareness programme	Once off, annual review if applicable
		Environmental requirements of work activities	Induction or specific awareness programme	Once off, annual review if applicable
		Knowledge of procedures	Training and information sharing	Continuously
		Understanding environmental consequences of personal actions and performance.	Induction or specific modules/ awareness programme	Once off, annual review if applicable
		Compliance to procedures	Induction or specific awareness programmes.	
Personnel requiring specific training and awareness identified on site by management, Environmental Officer, training department, etc.	Managing and controlling daily actions to prevent impacts	Examples include but are not limited to: Waste management Hazardous chemical handling	Specific training programme on EMP procedures.	As required

7.4.3 Induction for all employees, including contractors

All employees (including contractor employees) undergo induction. Magdala prospecting area's induction includes training and awareness on environmental issues on the prospecting area and is compulsory for all new employees. The induction programme as mentioned above, have an environmental management component. On an annual basis the environmental section of the induction gets updated. Consideration is given to the following:

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

7.4.4 General environmental awareness training

General awareness training is offered to operators, processors and the other various sections of the mine during the safety toolbox talks. This is 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 is undertaken to ensure that the above awareness training is conducted.

- A monthly environmental awareness topic for discussion is distributed to all mine sections. These topics are discussed at the safety toolbox talks, by SHE (Safety, Health and Environmental) representative and environmental officers if available.
- The topics are displayed on the notice boards of all mine sections.
- Ad hoc environmental awareness sessions to various departments/sections are conducted on request. The presentations focus on the environmental issues relevant to individual tasks.

7.4.5 Provision for job specific environmental awareness training

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

- Waste prevention and control (implementation of the waste management procedure).
- Water management (Leaking pipes and taps)
- Hydrocarbon and chemical spill reporting and clean-up
- Storing and handling of chemicals
- Rehabilitation
- Dust management on the mine

Supervisory staff within specific mine sections are equipped with the necessary knowledge and information to guide their employees on environmental aspects applicable in performing a specific task.

7.4.6 Competency training

Management (training official/environmental officer) is responsible for the environmental awareness training of middle management and supervisors. This training is conducted through workshops. If

required, external organisations may be requested to provide training to selected employees (e.g. EMP auditing).

Competence and the effectiveness of training and development initiatives as described in the matrix, are 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 mine section.

7.4.7 Review of awareness and training material

The content of all awareness and training material will be updated at least once a year.

7.4.8 Roles and responsibilities

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

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 it's 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 28 of 2002)

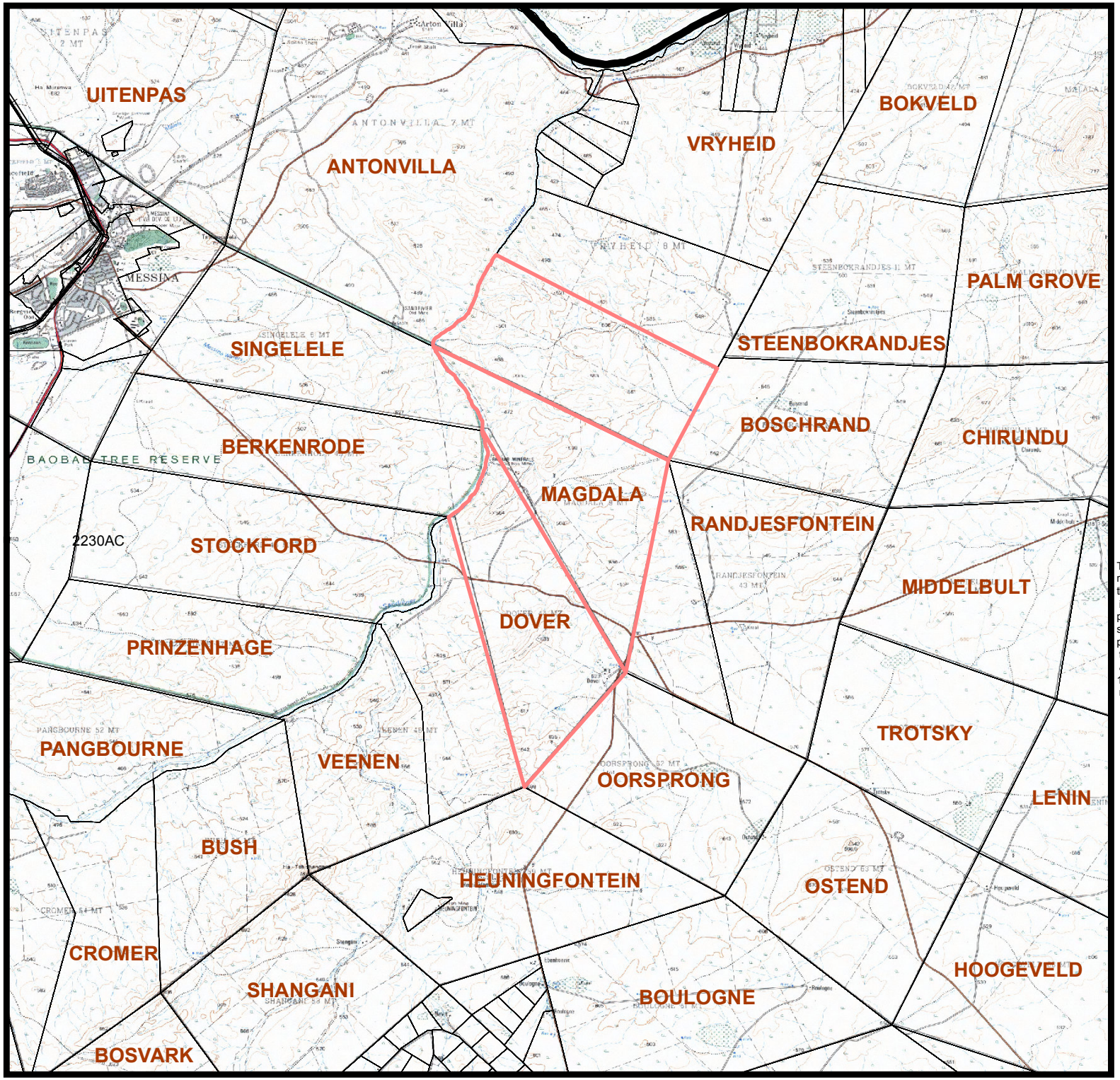
Signed at……this.....day of…….....20.....

.....

REGIONAL MANAGER

REGION:……

Appendix A – Regulation 2.2 Plan



NATIONAL TREASURE MINERALS (Pty) Ltd
APPLICATION FOR PROSPECTING RIGHT

VRYHEID 8 MT, MAGDALA 9 MT, DOVER 44 MT

Legend

- Prospecting Area
- DistrictMunicipalities
- LocalMunicipalities

VERKLARING / REFERENCE

The figure entered A, B, C, & D.. represents a prospecting right in extent approximately 2000 hectares, compromising of the farms Vryheid 4 MT, Magdala 9 MT, Dover 44 MT in which NTM (PTY) LTD has applied for a prospecting right in terms of section 27 of the mineral and petroleum resources development act, 2002 (act 28 of 2002). to mine but subject to regulation17 of the mine health & safety Act, 1996 (29 of 1996) excluding any area within 100 metres of any public road, railway, cemetery, residential area or public area.

SURVEYOR REGIONAL MANAGER APPLICANT

PLAN COMPILED IN ACCORDANCE WITH REGULATION 2(2) OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002)

1:50000 map: 2628BB
Map Co-ordinate System: Decimal Degree
Spheroid and Datum: WGS84/WGS84

Please take note that the co-ordinates and area were derived from a GIS and were not physicaly surveyed and are therefore an estimation only

N W E S

1:20 000

0 0.15 0.3 0.6 0.9 1.2 Kilometers

S.A. MC Gce - Professional Surveyor (PS0097)
Telephone Number: 082 940 9898
E-Mail: blue.700626@gmail.com
Map Ref Nr. 15 003

Appendix B
Details of the EAP

CURRICULUM VITAE

ORNASSIS TSHEPO SHAKWANE (TSHEPO)

PERSONAL DETAIL

ID: 7207085407082

ADDRESS: **68 Pongola Drive**
Aerorand West, Middelburg
Mpumalanga

CONTACT: 013 243 0542 / 082 498 1847

E-MAIL: tshepo@geovicon.co.za

CAREER SUMMERY

2004 TO CURRENT: Geovicon Environmental (Pty) Ltd previously Geovicon (Pty) Ltd – Environmental Assessment Practitioner, Owner and Managing Director

As an environmental assessment practitioner I assist my clients to ensure that their operations complies with the external (international, national and local government) and internal environmental requirements. The following are the responsibilities of an environmental manager: developing and implementing environmental strategies and action plans that ensure compliance with the environmental laws; coordinating all aspects of pollution control, waste management, recycling, environmental management, conservation and renewable energy; ensuring the implementation of environmental policies and practices; ensuring compliance with environmental legislation and keeping up to date with new regulations and legislation; liaising with relevant bodies such as state authorities and the public; auditing, analysing and reporting environmental performance to internal personnel and regulatory bodies; development of applications for enviroenntal authorisations, water use licences, waste management licences and atmospheric air emissions licences; carrying out impact assessments to identify, assess and reduce the mine's environmental risks and financial cost; promoting and raising awareness of the impact of environmental issues; developing and implementing environmental management systems to continually improve the impact of the organisation on the environment; coordinating public meetings and consultations on environmental matters; managing relations with clients (board of directors, senior management and internal staff); training staff at all levels in environmental issues and responsibilities; writing environmental reports.

2004: Department of Minerals and Energy, eMalahleni Regional Office - Assistant Director

Evaluate Environmental Impact Assessment reports, Basic Assessment reports, Scoping reports, Environmental Management Programmes/Plans, Closure plans and other technical and Environmental documents. Recommend approval of the Environmental Management Programmes Conduct comprehensive environmental Inspection and environmental audits in line with Minerals Act, 1991 and related regulations. Identify environmental liabilities for mining operations and ensure evaluation of adequacy of financial provision. Investigate and resolve mine environmental related issues, attend to environmental related queries and complaints in mines. Assist public clients through promotion of administrative justice, Environmental, enforcement and investigate illegal mining. Participate in Environmental related forums and meetings. Supervision and management of the subordinates

2002 – 2003: Department of Water Affairs and Forestry (Gauteng Regional Office), Pretoria - Senior Water Pollution Control Officer

Managing Water Quality issue in the Vaal River catchment area; Managing both industrial and mining impacts; reviewing Environmental Impact Assessments, Environmental Management Programmes and Integrated Water Use Licence Applications. Managing junior officers and being involved in policy making processes. Establishment of water quality monitoring network, water quality sampling, environmental compliance inspections, drafting of Water Use License Reports, Making recommendations on decisions to be taken on Environmental Impact Assessments, Environmental Management Programmes and Integrated Water Use Licence Applications and other technical reports.

2001 – 2002: Department of Agriculture, Conservation, Environment and Land Administration (Gauteng Provincial Office), Johannesburg - Environmental Control Officer

Managing the Environmental Impact Assessment authorization processes for industrial and urban development in the Gauteng province; conducting compliance monitoring in accordance with the environmental laws, attending to pollution incidents and investigating public complaints; providing technical support to the directorate during Policy formulation.

2000 – 2001: Department of Water Affairs and Forestry (Mpumalanga Regional Office), Nelspruit - Water Pollution Control Officer

Managing Water Quality issue in the Olifants River catchment area; Managing both industrial and mining impacts; reviewing Environmental Impact Assessments, Environmental Management Programmes and Integrated Water Use Licence Applications.

EDUCATION AND QUALIFICATIONS

B. Sc. (Hons): 1995

University of Durban-Westville

B. Sc.: 1994

University of Durban-Westville

MATRIC: 1991

Imemeza High school, Waterval Boven

PROFESSIONAL DEVELOPMENT

- Environmental Law for Environmental Management
- Environmental Impact Assessment for Practitioners
- Environmental Risk Assessment for Practitioners

PROFESSIONAL REGISTRATIONS

SOUTH AFRICAN COUNCIL FOR NATURAL SCIENTIFIC PROFESSIONS (SACNASP)

(117080)

INTERNATIONAL ASSOCIATION FOR IMPACT ASSESSORS SOUTH AFRICA (IAIASA)

(IAIASA 3847)

SKILLS

- Compilation of Integrated Water Use Licence Application
- Compilation of Integrated Water and Waste Management Plan
- Determination of Financial Provisions for Mines
- Compilation of Basic Assessment Reports
- Compilation of Scoping Reports
- Compilation of Environmental Impact/Risk Assessment Reports
- Compilation of Environmental Management Programme
- Compilation of Mine Closure Plans
- Compilation of Waste Management Plans and Procedures
- Compilation of Water Quality Reports
- Microsoft Word
- Microsoft Excel
- Microsoft PowerPoint
- Internet
- Email

University of Durban-Westville

This is to certify that

ORNASSIS TSHEPO SHAKWANE

was this day at a congregation of the University admitted to the

degree of

Honoris Baccalaureus Scientiae

having complied with the requirements of the Act, Statute and regulations

Vice-Chancellor

Registrar

Westville, 3 AUG 1996

HJP DBN.

348

University of Durban-Westville

This is to certify that

ORNASSIS TSHEPO SHAKWANE

was this day at a congregation of the University admitted to the

degree of

Baccalaureus Scientiae

having complied with the requirements of the Art, Statute and regulations

Vice-Chancellor

Registrar

Westville, 26 MAY 1995

HJP DBN.

Appendix C: Deeds List

WinDeed Database D/O Property

MT, MAGDALA, 9, 0, LIMPOPO

Lexis® WinDeed

Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

SEARCH CRITERIA			
Search Date	2022/02/08 11:09	Farm Number	9
Reference	-	Registration Division	MT
Report Print Date	2022/02/08 11:09	Portion Number	-
Farm Name	-	Remaining Extent	NO
Deeds Office	Limpopo	Search Source	WinDeed Database

PROPERTY INFORMATION			
Property Type	FARM	Diagram Deed Number	DB279/34
Farm Name	MAGDALA	Local Authority	MUSINA LOCAL MUNICIPALITY
Farm Number	9	Province	LIMPOPO
Registration Division	MT	Remaining Extent	NO
Portion Number	0	Extent	923.7098H
Previous Description	-	LPI Code	T0MT00000000000900000

OWNER INFORMATION (1)			
MAREMANI NATURE RESERVE PTY LTD			Owner 1 of 1
Company Type	TRANSFER	Document	T149522/2006PTA
Registration Number	200600011707	Microfilm / Scanned Date	-
Name	MAREMANI NATURE RESERVE PTY LTD	Purchase Price (R)	55 839 561
Multiple Owners	NO	Purchase Date	2006/08/02
Multiple Properties	NO	Registration Date	2006/11/10
Share (%)	-		

ENDORSEMENTS (5)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	CONVERTED FROM PTA	-	-	-

Postal Address	P O BOX 301 LOUIS TRICHARDT 0920		

COMPANY SECRETARY NATURAL PERSONS (1)

VILJOEN, MARIA STEPHANE — 1 of 1 Persons

Initials	MS	Status	RESIGNED
ID/Passport Number	4801210120082	Type	COMPANY SECRETARY (NATURAL PERSON)
Date of Birth	1948/01/21	Appointment Date	2007/05/01
Profession	-	Resignation Date	-
Country of Residence	SOUTH AFRICA	Member Size (%)	-
Residential Address	MISTY HEIGHTS LOUIS TRICHARDT 0920	Member Contribution (R)	-
Postal Address	P O BOX 301 LOUIS TRICHARDT 0920		

BOTH DIRECTOR / OFFICERS

No both director / officers to display

ALTERNATIVE DIRECTORS

No alternative directors to display

OFFICERS

No officers to display

LOCAL MANAGERS

No local managers to display

TRUSTS

No trusts to display

AUDITORS (3)

NEL HAVINGA AND CORBETT — 1 of 3 Auditors

Profession Code	THE SOUTH AFRICAN INSTITUTE OF CHARTERED ACCOUNTANTS	Postal address	P O BOX 301 LOUIS TRICHARDT 0920
Profession Number	901687A	Status	CURRENT
Registration entry date	-	Profession	AUDITOR
Expiry date	-	Start date	-
Reference number	-	End date	-
Fine letter	-	CM31 completed	-

Business address	98 MUNNIK STREET LOUIS TRICHARDT 0920	CM31 received	-
PRICEWATERHOUSE COOPERS			2 of 3 Auditors
Profession Code	THE SOUTH AFRICAN INSTITUTE OF CHARTERED ACCOUNTANTS	Postal address	P O BOX 4275 POLOKWANE 0700
Profession Number	9185253	Status	RESIGN
Registration entry date	-	Profession	AUDITOR
Expiry date	-	Start date	-
Reference number	-	End date	2007/05/01
Fine letter	-	CM31 completed	-
Business address	68 HANS VAN RENSBURG STREET POLOKWANE 0699	CM31 received	-
VENTER VILJOEN & MALAN			3 of 3 Auditors
Profession Code	THE SOUTH AFRICAN INSTITUTE OF CHARTERED ACCOUNTANTS	Postal address	P O BOX 301 LOUIS TRICHARDT 0920
Profession Number	901687	Status	RESIGN
Registration entry date	2007/10/10	Profession	AUDITOR
Expiry date	-	Start date	2007/05/01
Reference number	-	End date	-
Fine letter	-	CM31 completed	2007/10/10
Business address	98 MUNNIK STREET LOUIS TRICHARDT 0920	CM31 received	2007/10/10

CAPITAL INFORMATION (2)

Type	No of Shares	Parri Value	Capital Amount (R)	Capital Premium
AUTHORIZED ORDINARY	1 000	1	-	-
ISSUED ORDINARY	1 000	-	1	-

HISTORY (37)

Effective Date	Change Type
2022/01/12	CO/CC ANNUAL RETURN (COMPANY / CLOSE CORPORATION AR FILING - WEB SERVICES : REF NO. : 5358478953)
2021/01/22	CO/CC ANNUAL RETURN (COMPANY / CLOSE CORPORATION AR FILING - WEB SERVICES : REF NO. : 5339906038)
2020/01/13	CO/CC ANNUAL RETURN (COMPANY / CLOSE CORPORATION AR FILING - WEB SERVICES : REF NO. :

	5221590923)
2019/01/30	CO/CC ANNUAL RETURN (COMPANY / CLOSE CORPORATION AR FILING - WEB SERVICES : REF NO. : 5161305244)
2018/01/26	CO/CC ANNUAL RETURN (COMPANY / CLOSE CORPORATION AR FILING - WEB SERVICES : REF NO. : 5101032136)
2017/07/21	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (CHANGE RECORDCOMPANY NAME = NEL HAVINGA AND CORBETT SERVICESFIRST NAMES = STATUS = RESIGNED)
2017/02/24	CO/CC ANNUAL RETURN (COMPANY / CLOSE CORPORATION AR FILING - WEB SERVICES : REF NO. : 564335972)
2016/01/19	CO/CC ANNUAL RETURN (COMPANY / CLOSE CORPORATION AR FILING - WEB SERVICES : REF NO. : 531772454)
2015/01/12	CO/CC ANNUAL RETURN (COMPANY / CLOSE CORPORATION AR FILING - WEB SERVICES : REF NO. : 523587931)
2014/01/24	CO/CC ANNUAL RETURN (COMPANY / CLOSE CORPORATION AR FILING - WEB SERVICES : REF NO. : 53984300)
2013/11/07	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (CHANGE RECORDCOMPANY NAME = RAGABUSH (PROPRIETARY) LIMITEDFIRST NAMES = STATUS = RESIGNED)
2013/11/07	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (CHANGE RECORDCOMPANY NAME = RAGABUSHFIRST NAMES = STATUS = RESIGNED)
2013/11/07	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (ADD RECORDCOMPANY NAME = NEL HAVINGA AND CORBETT SERVICESFIRST NAMES = STATUS = ACTIVE)
2013/08/15	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (CHANGE RECORDCOMPANY NAME = RAGABUSHFIRST NAMES = STATUS = ACTIVE)
2012/08/20	POSTAL ADDRESS CHANGE (P O BOX 301LOUIS TRICHARDT0920)
2012/08/20	REGISTERED ADDRESS CHANGE (98 MUNNIK STREETLOUIS TRICHARDT0920)
2012/06/21	AUDITOR/ACC OFFICER CHANGE (CHANGE RECORDNAME : = PRICEWATERHOUSE COOPERSSTATUS : = RESIGN)
2012/06/21	AUDITOR/ACC OFFICER CHANGE

	(CHANGE RECORDNAME : = VENTER VILJOEN & MALANSTATUS : = RESIGN)
2012/06/21	AUDITOR/ACC OFFICER CHANGE (ADD RECORDNAME : = NEL HAVINGA AND CORBETTSTATUS : = CURRENT)
2010/11/22	RE-INSTATE APPLICATION (ANNUAL RETURN NON COMPLIANCE - CANCELLATION OF DEREGISTRATION)
2010/10/19	AR IN DEREGISTRATION (DEREGISTRATION FOR ANNUAL RETURN NON COMPLIANCE. REGISTRATION MONTH = 1 - AR NON COMPLIANCE DATE = 01/03/2009 - 6 MONTHS AFTER = 01/11/2009.)
2008/09/01	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (VILJOENSTATUS : RESIGN)
2008/09/01	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (SURNAME=RAGABUSH (PROPRIETARY) LIMITEDFULL FORENAMES=NATIONALITY=SOUTH AFRICARSA RESIDENT=DATE OF APPOINTMENT=1 SEPTEMBER 2008PROFESSION=DESIGNATION=SECRETARY (COMPANIES AND CC"S)RESIDENTIAL ADDRESSBUSINESS ADDRESS98 MUNNIK STREET98 MUNNIK STREETLOUIS TRICHARDTPOSTAL ADDRESSP.O. BOX 301LOUIS TRICHARDT0920NATURE OF CHANGE=APPOINTMENTSTATUS :ACTIVE)
2007/10/31	REGISTERED ADDRESS CHANGE (98 MUNNIK STREETLOUIS TRICHARDT0920)
2007/10/31	POSTAL ADDRESS CHANGE (P O BOX 301LOUIS TRICHARDT0920)
2007/10/10	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (SURNAME=SKOVFULL FORENAMES=ANDERSID NO=7311120000000STATUS :ACTIVENATURE OF CHANGE=CHANGE OF 6, 7 & 8)
2007/10/10	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (SURNAME=SKOVFULL FORENAMES=LEIFID NO=3802280000000STATUS :ACTIVENATURE OF CHANGE=CHANGE OF 6, 7 & 8)
2007/10/10	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (SURNAME=SKOVFULL FORENAMES=METTE FABRICIUSID NO=6211010000000STATUS :ACTIVENATURE OF CHANGE=NO CHANGE)
2007/07/10	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (SURNAME=SKOVFULL FORENAMES=ANDERSID NO=7311120000000STATUS :ACTIVENATURE OF CHANGE=NO CHANGE)
2007/07/10	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (SURNAME=SKOVFULL FORENAMES=LEIFID NO=3802280000000STATUS :ACTIVENATURE OF CHANGE=NO CHANGE)
2007/07/10	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (SURNAME=SKOVFULL FORENAMES=METTE FABRICIUSID NO=6211010000000STATUS

	:ACTIVENATURE OF CHANGE=NEW APPOINTMENT)
2007/05/30	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (SURNAME=ROVISING KOCHFULL FORENAMES=SYSID NO=5305190000000STATUS :RESIGNEDNATURE OF CHANGE=RESIGNED)
2007/05/01	AUDITOR/ACC OFFICER CHANGE (P O BOX 301LOUIS TRICHARDT0920STATUS : ADDRESS CHANGE)
2007/05/01	AUDITOR/ACC OFFICER CHANGE (NO INFORMATION TO DISPLAY)
2007/05/01	DIRECTOR/MEMBER/SECRETARY/TRUST/BOTH DIRECTOR AND OFFICER (SURNAME=VILJOENFULL FORENAMES=MARIA STEPHANEID NO=4801210120082BIRTH DATE=21 JANUARY 1948NATIONALITY=SOUTH AFRICARSA RESIDENT=1DATE OF APPOINTMENT=1 MAY 2007PROFESSION=DESIGNATION=COMPANY SECRETARY (NATURAL PERSON)RESIDENTIAL ADDRESSMISTY HEIGHTSLOUIS TRICHARDT0920BUSINESS ADDRESS98 MUNNIK STREETLOUIS TRICHARDT0920POSTAL ADDRESSP O BOX 301LOUIS TRICHARDT0920NATURE OF CHANGE=APPOINTMENTSTATUS :ACTIVE)
2006/09/04	NAME CHANGE (LIMPOPO NATURE RESERVE)
2006/09/04	NATURE OF BUSINESS CHANGE (SIC CODE) (11)

WinDeed Database D/O Property - List

MT, 8, LIMPOPO

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SEARCH CRITERIA			
Search Date	2022/02/03 15:34	Farm Number	8
Reference	-	Registration Division	MT
Report Print Date	2022/02/03 15:34	Portion Number	-
Farm Name	-	Remaining Extent	NO
Deeds Office	Limpopo	Search Source	WinDeed Database

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	-	-
3	STORE MARLYS FRANCES	T71611/1991PTA	1991/10/28	335 000
4	MAREMANI NATURE RESERVE PTY LTD	T149522/2006PTA	2006/11/10	55 839 561
5	MERWE HENDRIK ERRAD VAN DER	T109144/2002PTA	2002/09/06	60 000
6	LAUTE VIVERE DEVELOPMENT CC	T90484/2014PTA	2014/11/13	1 200 000
8	GERNER ROSELLA	T89661/2006PTA	2006/07/21	280 000
9	GERNER ROSELLA	T89661/2006PTA	2006/07/21	280 000
10	MAREMANI NATURE RESERVE PTY LTD	T149522/2006PTA	2006/11/10	55 839 561
11	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
12	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
13	MUDZUNGA MMBULUNGENI JULIA	T94527/2012PTA	2012/12/11	1 650 000
14	MAREMANI NATURE RESERVE PTY LTD	T149522/2006PTA	2006/11/10	55 839 561
15	CARPATHIAN FARM PTY LTD	T21471/2016PTA	2016/03/29	2 736 285
16	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
19	LIMPOPO GOUE SAND CC	T72009/2015PTA	2015/08/18	-

PORTION LIST				
Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
20	NIMMERSAULT TRUST	T9348/2019	2019/10/08	17 500 000

WinDeed Database D/O Property

MT, DOVER, 65, 0, LIMPOPO

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Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

SEARCH CRITERIA			
Search Date	2022/02/08 11:02	Farm Number	65
Reference	-	Registration Division	MT
Report Print Date	2022/02/10 10:19	Portion Number	-
Farm Name	-	Remaining Extent	NO
Deeds Office	Limpopo	Search Source	WinDeed Database

PROPERTY INFORMATION			
Property Type	FARM	Diagram Deed Number	T76715/2000
Farm Name	DOVER	Local Authority	NORTHERN DC
Farm Number	65	Province	LIMPOPO
Registration Division	MT	Remaining Extent	NO
Portion Number	0	Extent	1097.3025H
Previous Description	-	LPI Code	T0MT00000000006500000

OWNER INFORMATION (1)			
MAREMANI NATURE RESERVE PTY LTD			Owner 1 of 1
Company Type	TRANSFER	Document	T149522/2006PTA
Registration Number	200600011707	Microfilm / Scanned Date	-
Name	MAREMANI NATURE RESERVE PTY LTD	Purchase Price (R)	55 839 561
Multiple Owners	NO	Purchase Date	2006/08/02
Multiple Properties	NO	Registration Date	2006/11/10
Share (%)	-		

ENDORSEMENTS (3)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	CONVERTED FROM PTA	-	-	-
2	CONSOLIDATE FROM	MT , 44 , 0	-	-

ENDORSEMENTS (3)				
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3	CONSOLIDATE FROM	MT , 62 , 1	-	-

HISTORIC DOCUMENTS (5)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	B92351/1997PTA	LANDBANK	Unknown	2000 0672 2873
2	B99832/1996PTA	LAND BANK	Unknown	2000 0672 2869
3	B6308/1997PTA	EERSTE NASIONALE BANK	Unknown	2000 0672 2877
4	T76716/2000PTA	AAGE V JENSEN CHARITY FOUNDATION	18 000 000	2000 0748 5016
5	T76715/2000PTA	WOLVAARDT JOHANNES FREDERICK	CCT	2000 0672 2858

Appendix D: Department of Forestry, Fisheries and the Environment Screening Report

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

EIA Reference number:

Project name: Magdala Prospecting Project

Project title: Magdala Prospecting Project

Date screening report generated: 01/02/2022 16:05:50

Applicant: National Treasure Minerals (Pty) Ltd

Compiler: Geovicon Environmental (Pty) Ltd

Compiler signature:

.....

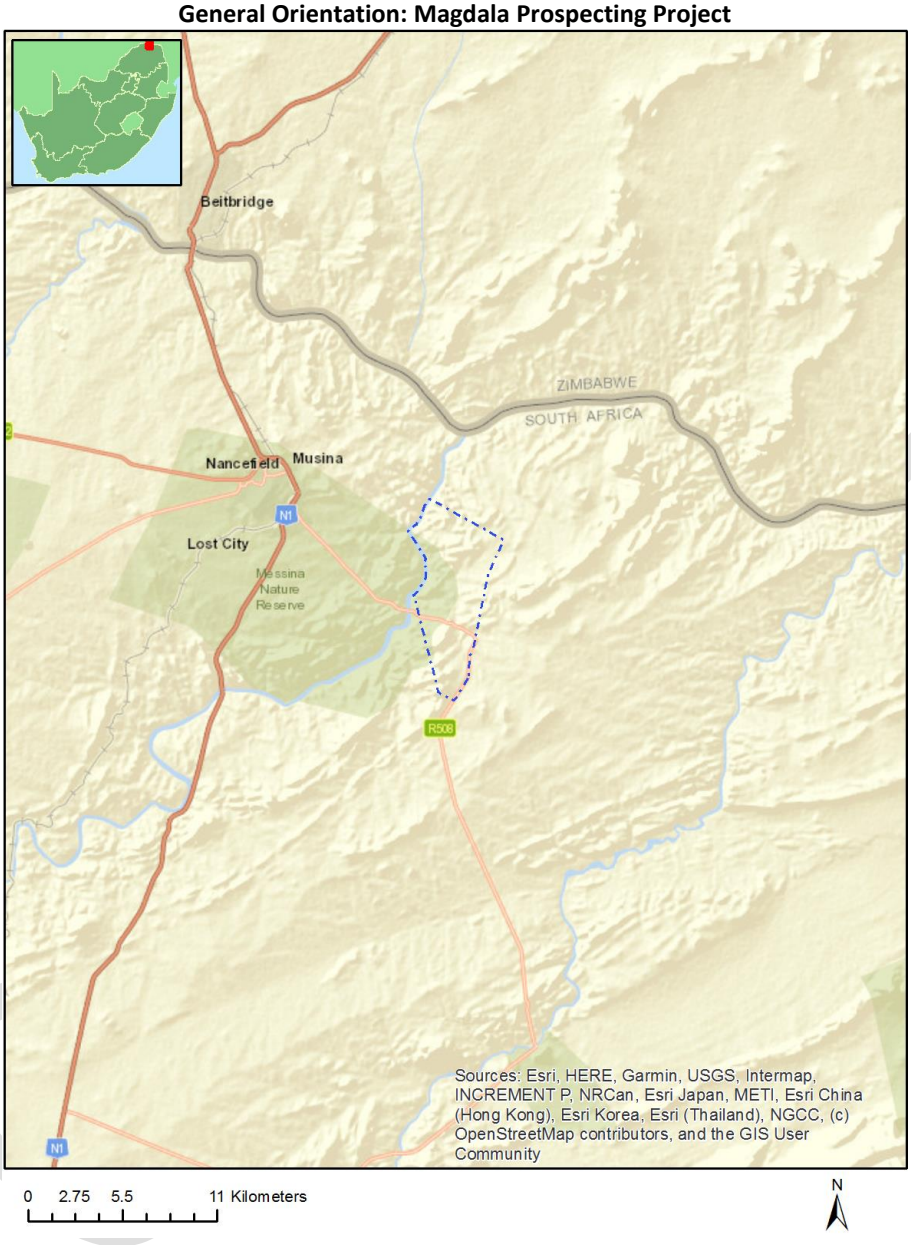
Application Category: Mining|Prospecting rights

Table of Contents

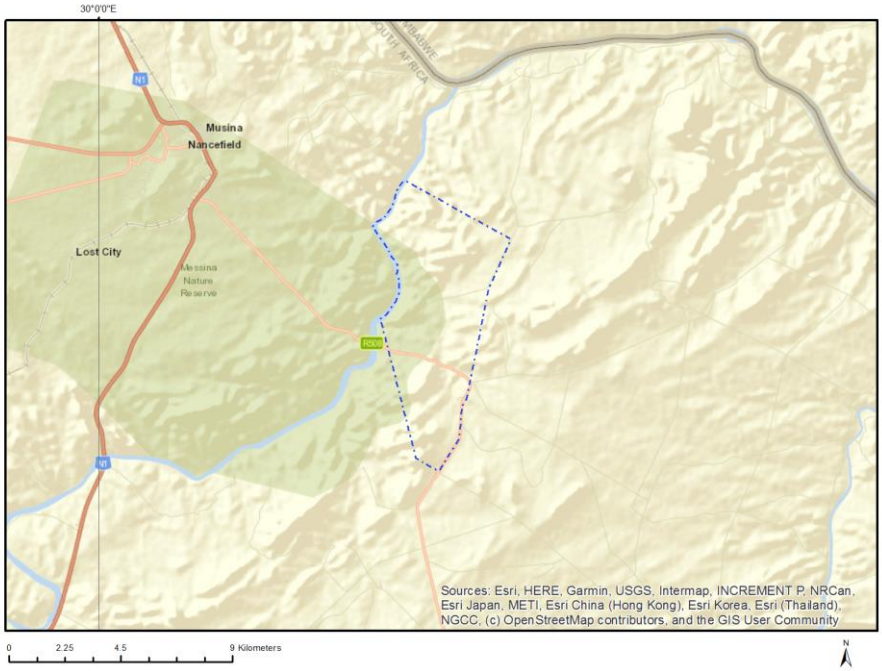
Proposed Project Location

Orientation map 1: General location

General Orientation: Magdala Prospecting Project



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	VEENEN	48	0	22°25'40.29S	30°5'38.63E	Farm
2	SINGELELE	6	0	22°21'42.34S	30°4'42.25E	Farm
3	OORSPRONG	62	0	22°26'15.55S	30°8'35.97E	Farm
4	BOSCHRAND	10	0	22°22'28.55S	30°9'55.44E	Farm
5	RANDJESFONTEIN	43	0	22°24'17.87S	30°9'15.8E	Farm
6	ANTONVILLA	7	0	22°19'15.48S	30°5'34.93E	Farm
7	MAGDALA	9	0	22°23'12.37S	30°7'27.33E	Farm
8	DOVER	65	0	22°24'44.76S	30°7'2.03E	Farm
9	BERKENRODE	45	0	22°22'42.33S	30°4'28.78E	Farm
10	VRYHEID	8	0	22°20'13.97S	30°8'27.4E	Farm
11	RANDJESFONTEIN	43	1	22°24'30.52S	30°8'30.39E	Farm Portion
12	VRYHEID	8	3	22°20'53.57S	30°8'5.62E	Farm Portion
13	RANDJESFONTEIN	43	0	22°24'13.35S	30°9'32.03E	Farm Portion
14	VRYHEID	8	4	22°21'46.47S	30°7'28.85E	Farm Portion
15	SINGELELE	6	0	22°21'40.5S	30°4'34.56E	Farm Portion
16	MAGDALA	9	0	22°23'12.37S	30°7'27.33E	Farm Portion
17	BERKENRODE	45	0	22°22'42.33S	30°4'28.78E	Farm Portion
18	BOSCHRAND	10	0	22°22'28.55S	30°9'55.44E	Farm Portion
19	DOVER	65	0	22°24'44.76S	30°7'2.03E	Farm Portion
20	VEENEN	48	0	22°25'16.72S	30°6'10.13E	Farm Portion
21	OORSPRONG	62	0	22°26'15.55S	30°8'35.97E	Farm Portion
22	ANTONVILLA	7	1	22°19'29.5S	30°5'29.66E	Farm Portion

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

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	14/12/16/3/3/1/1232	Solar PV	Approved	17.5

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

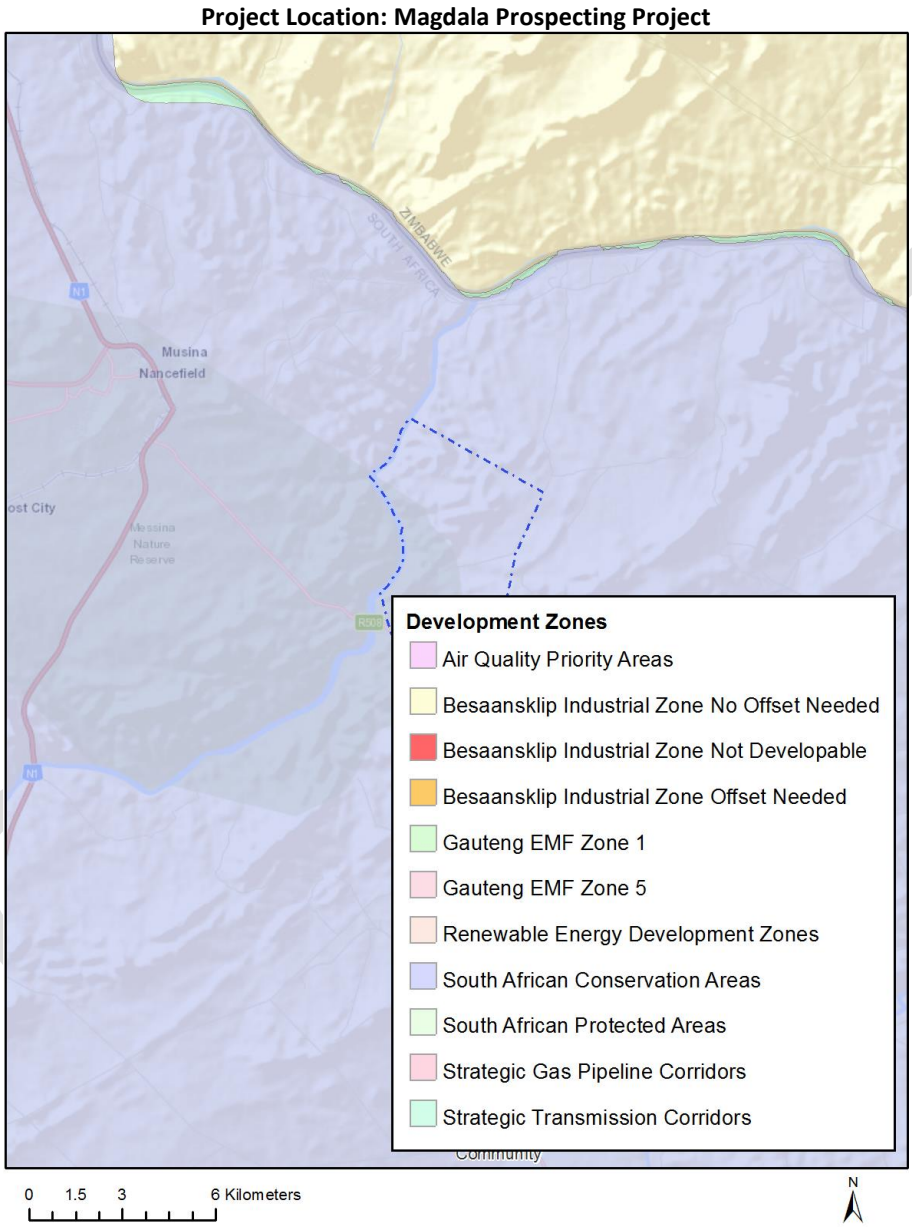
The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

Incentive, restriction or prohibition	Implication
Strategic Transmission Corridor-International corridor	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_EGI.pdf
South African Protecte	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/SAPAD_OR_2021_Q3_Metadata.pdf

[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.

d Areas	
South African Conservation Areas	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/SACAD_OR_2021_Q3_Metadata.pdf

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



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.

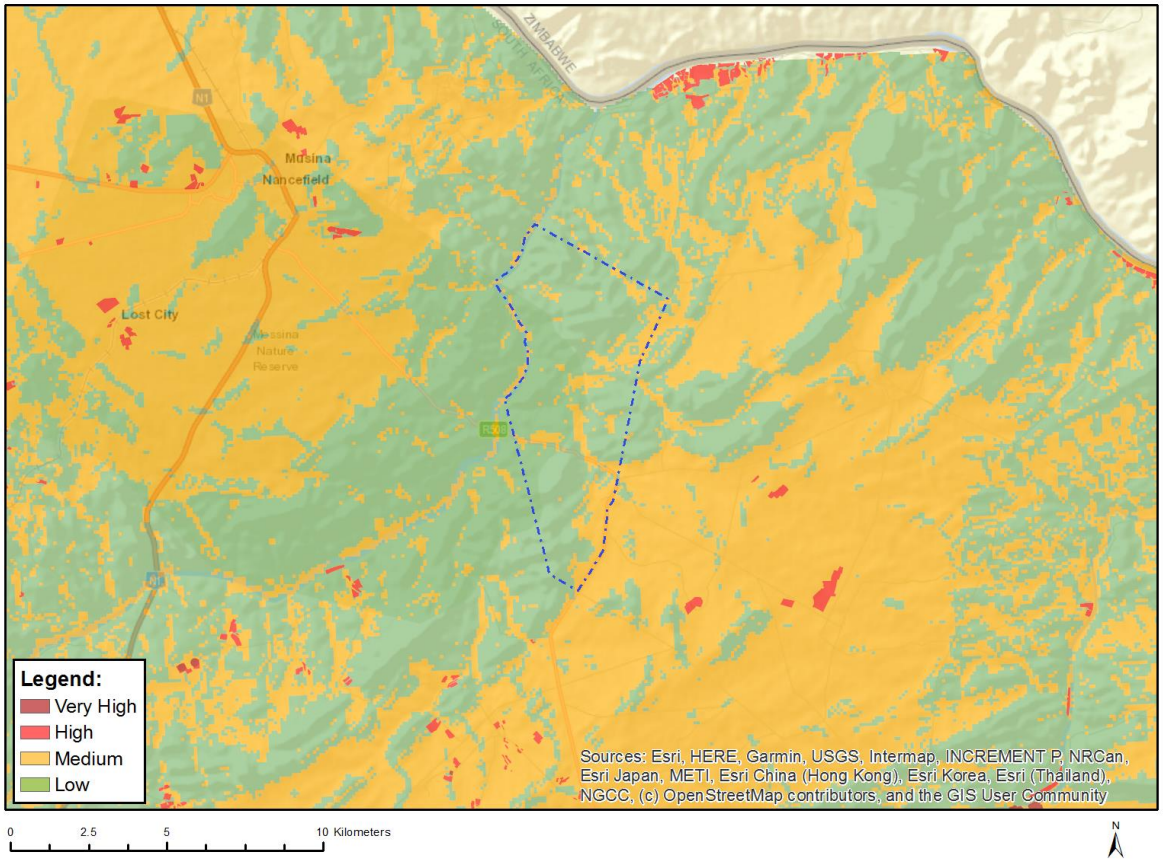
No	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_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 Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol.pdf
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

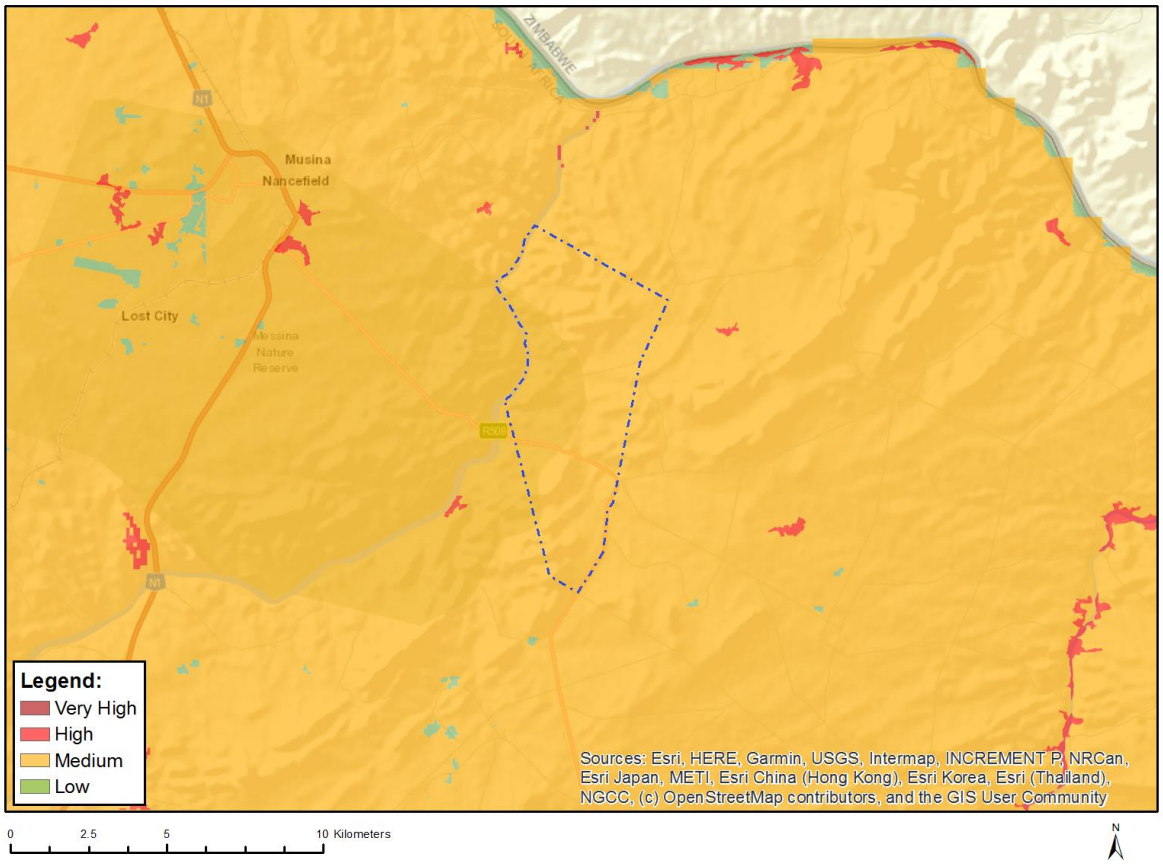


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
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

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



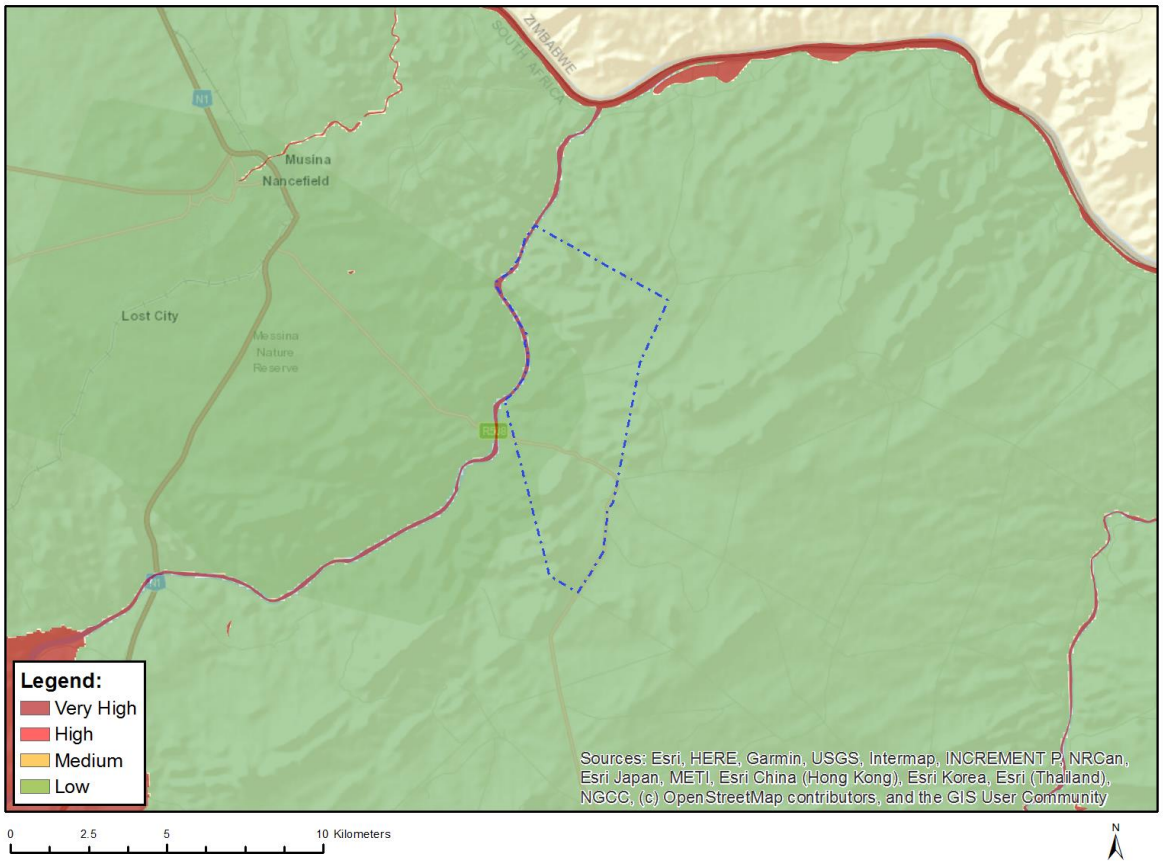
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their 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)
Medium	Aves-Terathopius ecaudatus
Medium	Mammalia-Acinonyx jubatus
Medium	Mammalia-Dasymys robertsii
Medium	Mammalia-Lycaon pictus
Medium	Sensitive species 1

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

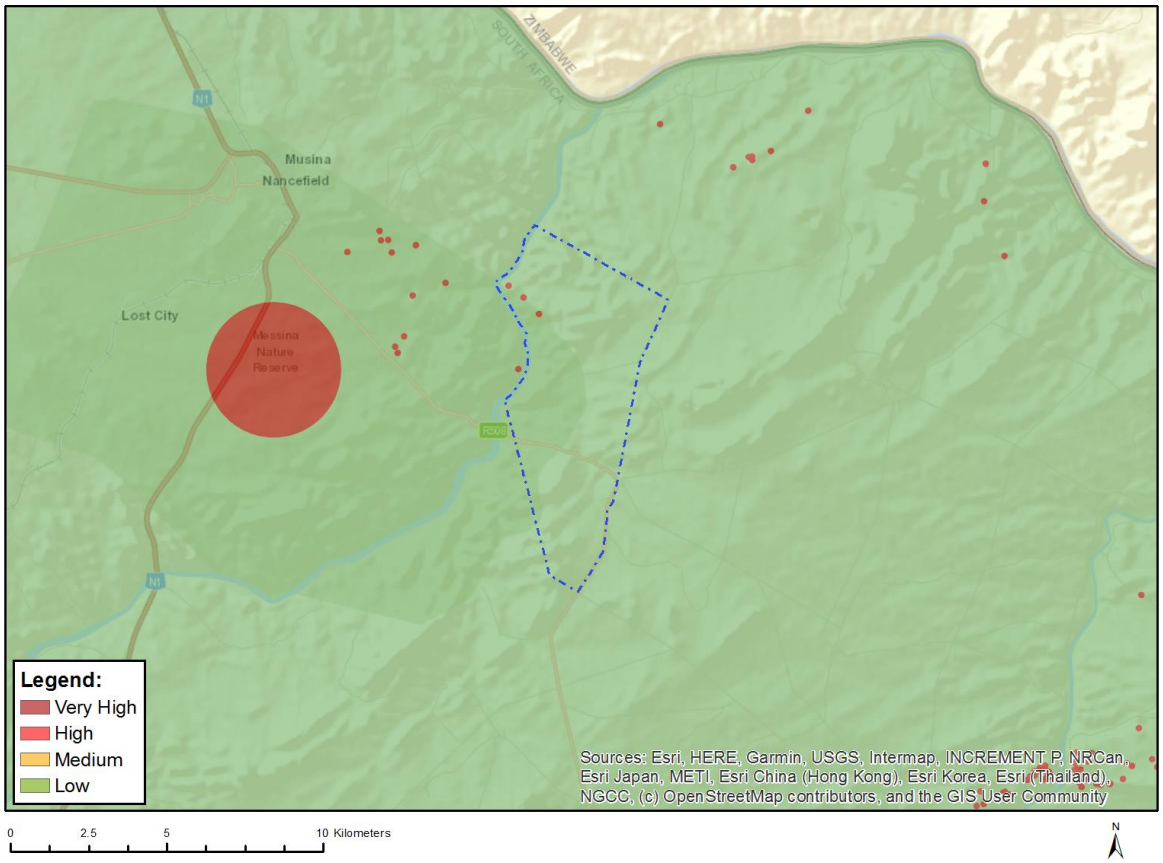


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	Wetlands and Estuaries

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

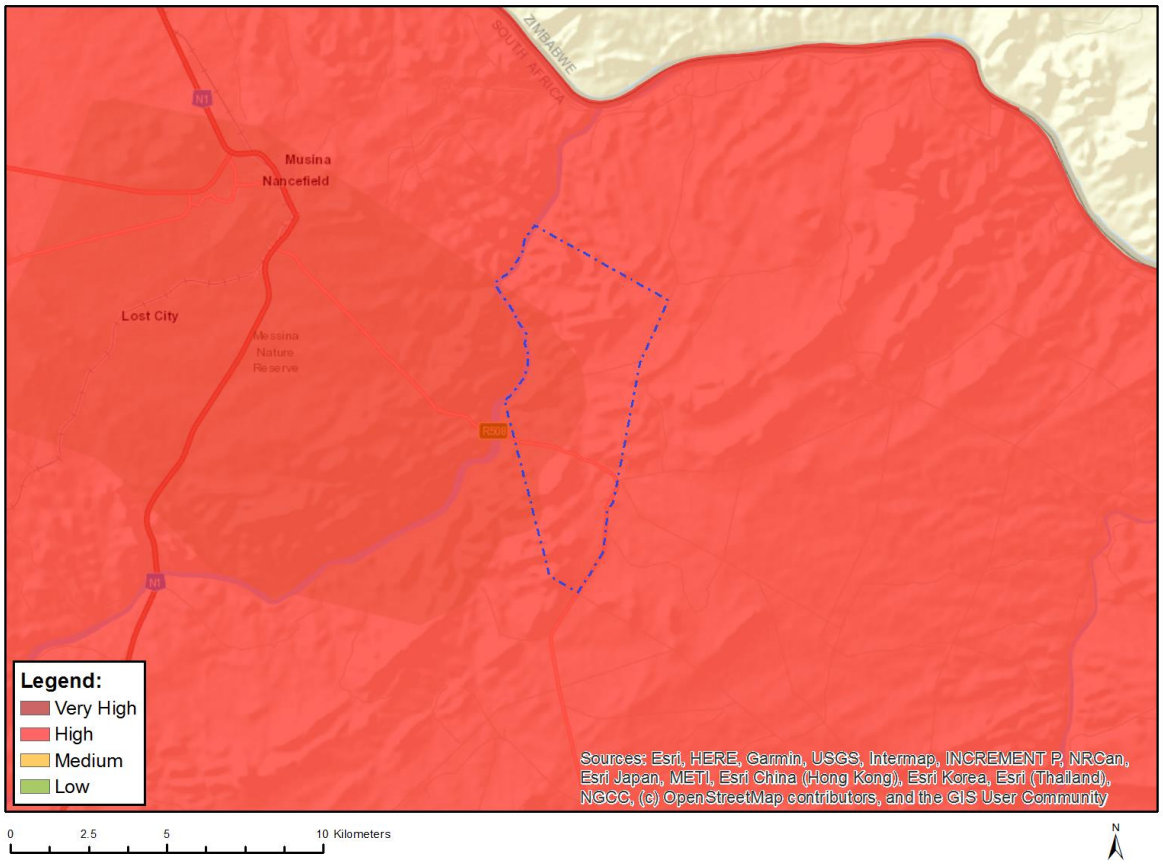


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	Within 100m of an Ungraded Heritage site

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

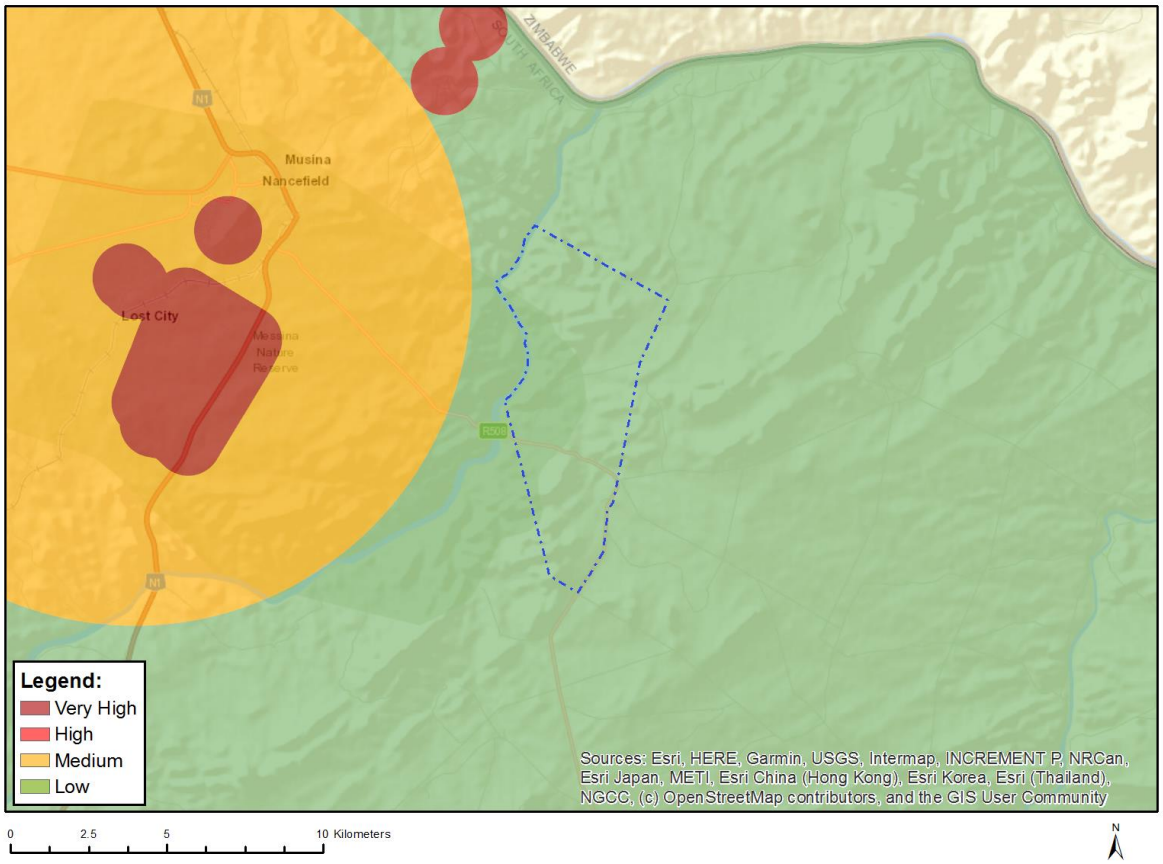


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Dangerous and restricted airspace as demarcated
Medium	Between 8 and 15 km of other civil aviation aerodrome

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

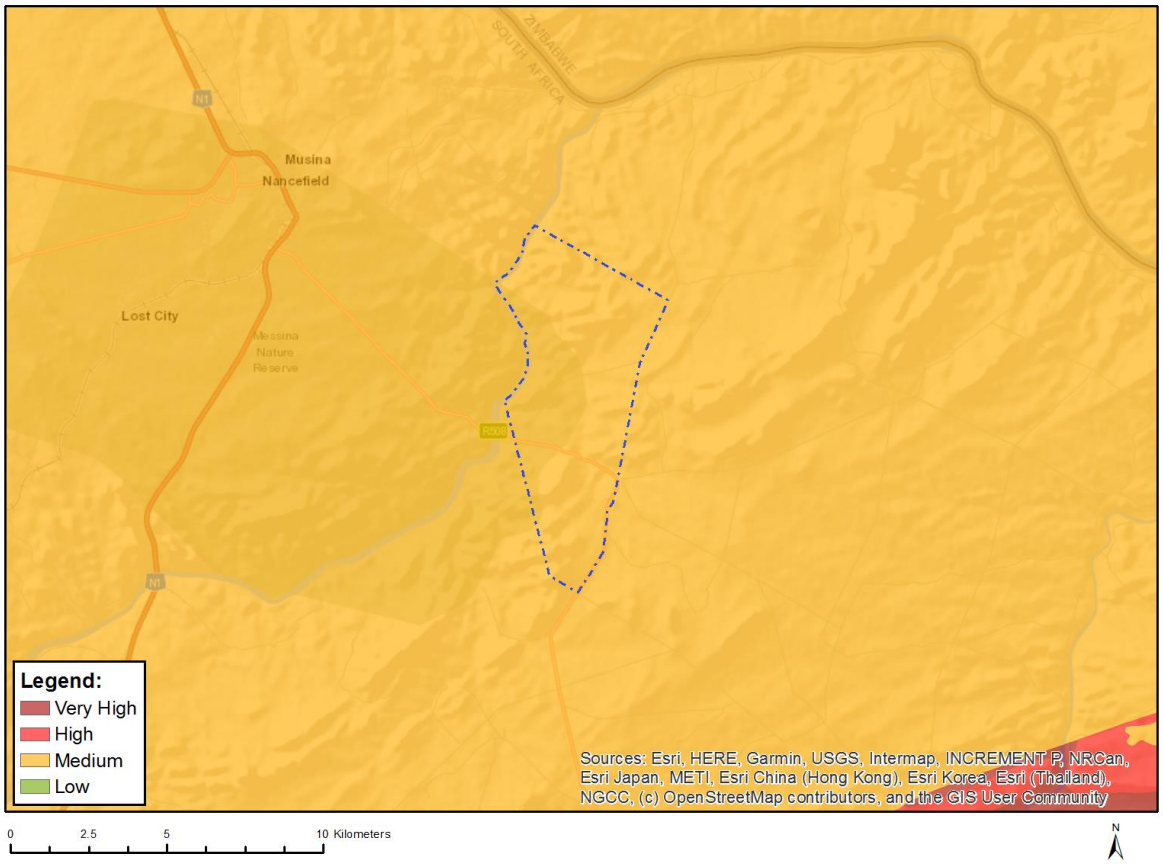


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

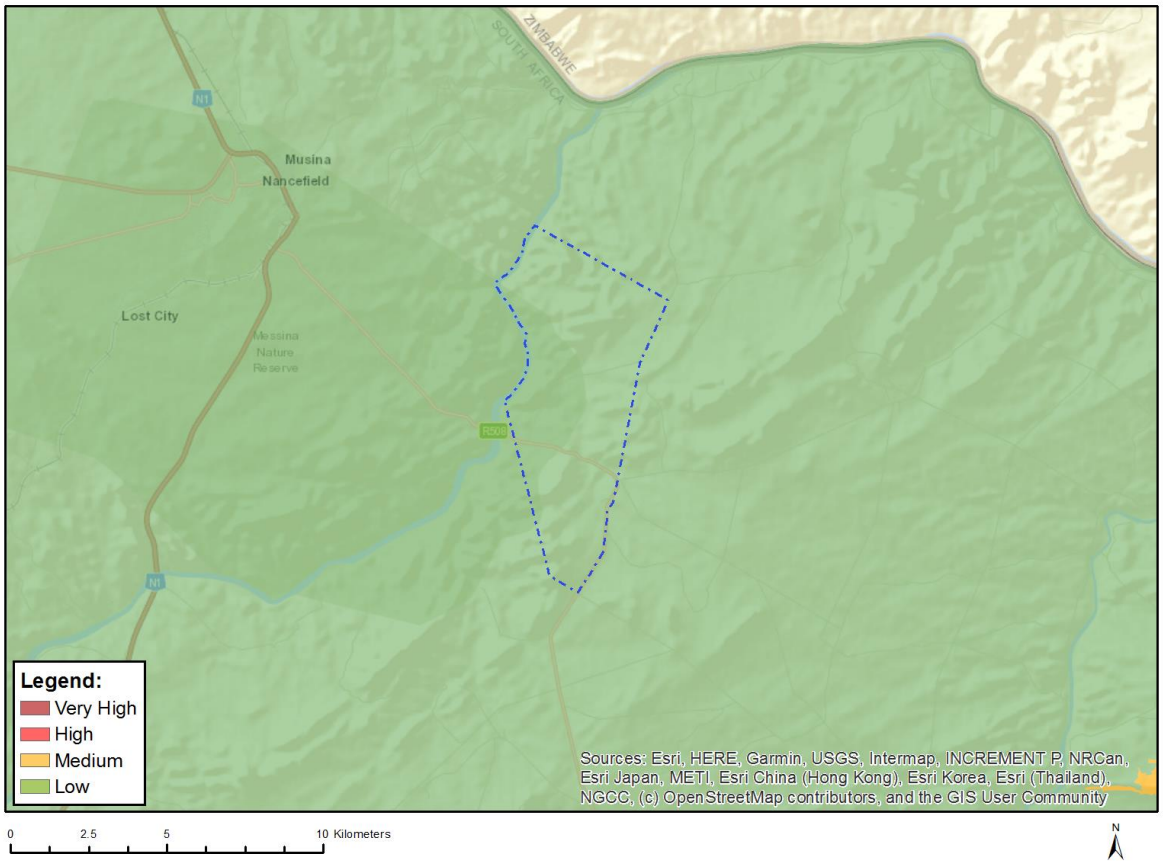


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

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

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



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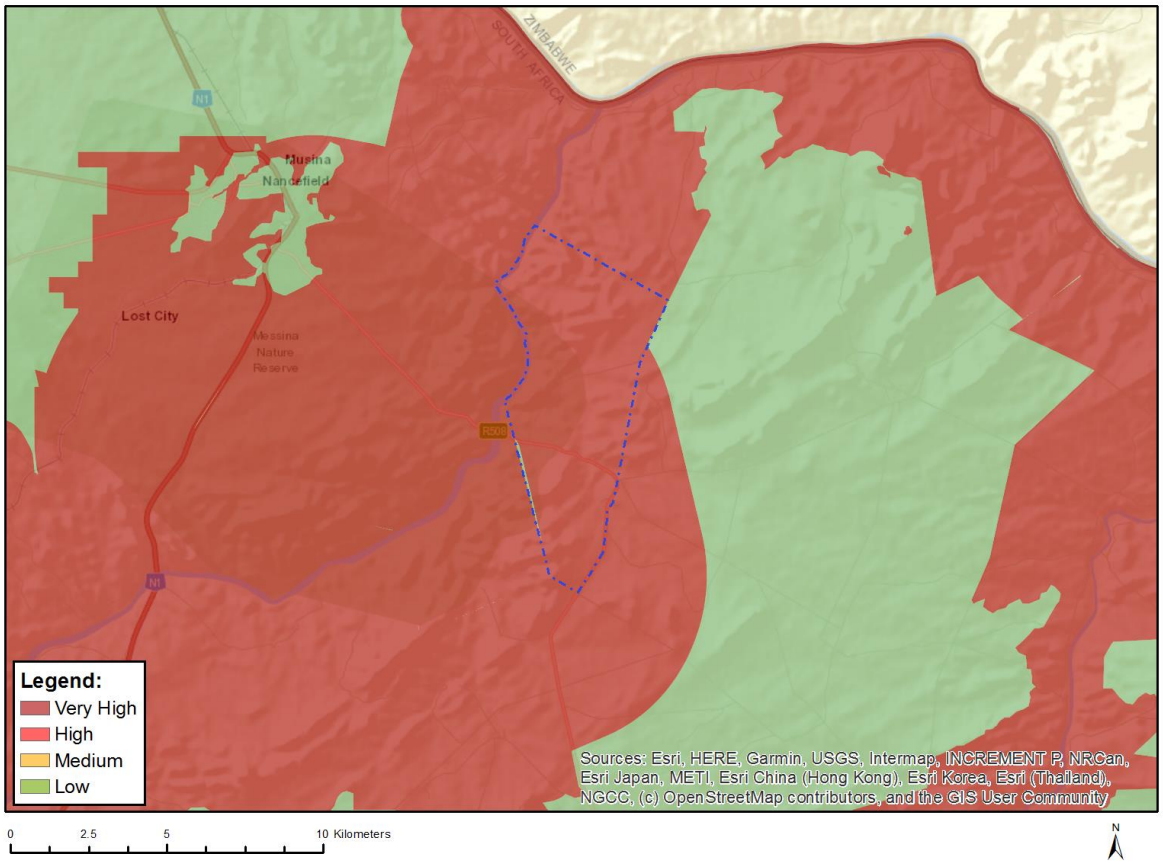
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

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	Musina Nature Reserve
Very High	Protected Areas Expansion Strategy