



**DRAFT BASIC ASSESSMENT & ENVIRONMENTAL MANAGEMENT PROGRAMME
REPORT**

PREPARED BY: JOAN CONSULTING (PTY) LTD

PREPARED FOR: AFLI EXPLORATION 3 (PTY) LTD

REF NO: KZN30/5/1/1/2/11352PR

DATE :MAY 2023

Cell: 073 912 0800

Tel: 011 791 5032

Fax: 086 235 5142

Email: Lufuno@joanprojects.co.za

Address: No 9 Lourie Road, Randparkriff, Randburg, Gauteng

Postal Address: P O Box 4147, Honeydew, 2040

Company registration No: 2011/142803/07





mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

<u>Details of applicant</u>	
<u>Name of applicant:</u>	<u>Afli Exploration 3 (Pty) Ltd</u>
<u>Tel no:</u>	<u>063 586 9109</u>
<u>Fax no:</u>	<u>N/A</u>
<u>Postal address:</u>	<u>1st Floor, Paramount Place, 105 Main Road, Green Point, Cape Town</u>
<u>Physical address:</u>	<u>1st Floor, Paramount Place, 105 Main Road, Green Point, Cape Town</u>
<u>File reference number samrad:</u>	<u>KZN30/5/1/1/2/11352PR</u>

Important Notice

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

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

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

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

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

Objective of the Basic Assessment Process

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

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (b) identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) describe the need and desirability of the proposed alternatives,
- (d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage , and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects to determine:
 - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - (ii) the degree to which these impacts—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be managed, avoided or mitigated;
- (e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
 - (i) identify and motivate a preferred site, activity and technology alternative;
 - (ii) identify suitable measures to manage, avoid or mitigate identified impacts; an
 - (iii) identify residual risks that need to be managed and monitored.

Contents

Important Notice.....2

Objective of the Basic Assessment Process.....3

PART A11

Scope of Assessment and Basic Assessment Report11

1. Contact Person and correspondence address11

 (i). Details of the EAP11

 (ii). Details of the applicant12

 (iii). Expertise of the EAP12

 Summary of the qualifications and experience of the EAP12

2. Location of the overall Activity13

3. locality map14

.....14

4. Description of the scope of the proposed overall activity15

(This conceptual map may change depending on desktop review)15

(Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site) and this conceptual map may change depending on desktop review.15

AFLI Exploration 3 (Pty) Ltd is applying for a prospecting right with the competent authority, the Department of Mineral Resources and Energy (DMRE) KwaZulu-Natal region. The prospecting right is set to explore the following mineral reserves, Lithium, Feldspar, Tin, Tantalum, Zinc, and Dimension stones.....15

The following activities will be undertaken on site including associated infrastructure as part of the site establishment.15

- Diesel power source vehicles and machineries will be used for the proposed activities.15
- There are currently existing roads that give access to the proposed site. In areas where it's problematic or with no access at all, temporary roads will be established (through trucks moving through the bush, not bush clearing).....15
- It is mandatory under the health and safety act that ablution facilities are made available where people will be undertaking any activities. Chemical toilets will be erected on site for the sanitation purposes.....15

- Temporary contractor’s yard will be erected on site and will entail site offices, ablution facilities as well as parking areas. No workers will stay on site.15
- Storage and handling of hydrocarbons which is limited to fuel (diesel) and a minimum of less than 30m² will be stored on site powering the machineries.....15
- Water for prospecting purposes will be brought to site. Portable water for contractors will be provided and will be stored on site in a tanker of 12 000 litres capacity.15

It must be noted that the site plan is subjected to change depending on the findings of the desktop study, geophysical and geochemical surveys to be undertaken as part of the prospecting activities. Project maps are also attached as appendix 2 of this report.15

5. Listed and specified activities.....	17
6. Description of the activities to be undertaken.....	18
6.1. Description of planned non-invasive activities	18
6.1.1. Airborne geophysical survey	18
6.1.2. Geological field Mapping	19
6.1.3. Soil Geochemical survey.....	19
6.1.4. Soil Geophysical survey.....	19
6.2. Description of planned invasive activities: Initial drilling	19
6.2.1. Reconnaissance Drilling	19
6.3. Infill drilling.....	20
6.4. Pre-/feasibility studies	20
6.5. Bankable Feasibility Study.....	20
7. Policy and Legislative Context	23
8. Need and desirability of the proposed activities.....	26
9. Motivation for the overall preferred site, activities, and technology alternative.	26
10. Full description of the process followed to reach the proposed preferred alternatives within the site. 27	
10.1. Details of the development footprint alternatives considered.....	27
10.1.1. The property on which or location where it is proposed to undertake the activity.	27
10.1.2. The type of activity to be undertaken	27
10.1.3. The design or layout of the activity.	28
10.1.4. The technology to be used in the activity.....	28
10.1.5. The Operational Aspects of the Activity.	28
10.1.6. The option of not implementing the activity.....	28

11.	Details of the Public Participation Process Followed	28
11.1.	Objectives of public participation Process.....	28
11.2.	Tasks undertaken for the Public Participation Process	29
11.2.1.	Identification of key Interested and Affected Parties:	29
11.2.2.	Placement of site notices	29
11.2.3.	Newspaper adverts	30
11.2.4.	Availability Draft Basic Assessment Report and Background information Document (BID) 30	
11.2.5.	Public Meeting	30
11.2.6.	Summary of issues raised by I & Aps	30
12.	The Environmental attributes associated with the alternatives.....	34
12.1.	Baseline Environment	34
12.1.1.	Climate, Temperature and Rainfall.....	34
13.	Topography	34
14.	Current Air Quality Status	35
15.	Vegetation.....	35
15.1.	Biome	35
15.2.	Broad vegetation classification and Habitat Type	36
16.	Geology	38
	The application area covers rocks belonging to the Mzombe Terrane and rocks from the Natal and Karoo Supergroups.....	38
17.1.	Natal Group	38
16.2.	Karoo Supergroup.....	38
17.	Surface water and tributaries.....	39
18.	Heritage	40
18.1.	Archaeology.....	40
18.2.	Burial grounds and Graves	41
18.3.	Public Monuments and Memorials	41
18.4.	Buildings and Structures	42
18.5.	Impact Statement.....	42
19.	Socio Economic Conditions.....	43
19.1.	Population Distribution and Demographics	43

19.2.	Population size.....	43
19.3.	Age and gender profile	45
19.4.	Racial Distribution.....	47
20.	Description of the current land uses.....	49
20.1.	Description of specific environmental features and infrastructure on the site.	49
20.2.	Environmental and current land use map.....	51
21.	Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks.....	52
22.	The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.	54
23.	The possible mitigation measures that could be applied and the level of risk.....	56
24.	Motivation where no alternative sites were considered.....	94
25.	Statement motivating the alternative development location within the overall site.....	94
	(Provide a statement motivating the final site layout that is proposed.....	94
26.	Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.....	94
27.	Assessment of each identified potentially significant impact and risk	95
28.	Summary of specialist reports.....	97
29.	Environmental impact statement	101
29.1.	Summary of the key findings of the environmental impact assessment;.....	101
29.2.	Final Site Map	101
31.	Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr; Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.	101
32.	Aspects for inclusion as conditions of Authorisation.....	101
33.	Description of any assumptions, uncertainties and gaps in knowledge	102
34.	Reasoned opinion as to whether the proposed activity should or should not be authorised.	102
34.1.	Reasons why the activity should be authorized or not	102
34.2.	Conditions that must be included in the authorisation.....	102
34.3.	Period for which the Environmental Authorisation is required.....	102

35.	Undertaking	103
36.	Financial Provision	103
36.1.	State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation	103
36.2.	Explain how the aforesaid amount was derived.	103
36.3.	Confirm that this amount can be provided for from operating expenditure	103
37.	Specific Information required by the competent Authority	103
37.1.	Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:	103
37.1.1.	Impact on the socio-economic conditions of any directly affected person.	103
38.	Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.	104
	PART B	105
	ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT	105
1.	Draft environmental management programme	105
1.1.	Details of the EAP	105
1.2.	Description of the Aspects of the Activity.....	105
2.	Composite Map	106
3.	Description of Impact management objectives including management statements.....	107
3.1.	Determination of closure objectives. (Ensure that the closure objectives are informed by the type of environment described.....	107
3.2.	Volumes and rate of water use required for the operation	107
3.3.	Has a water use licence has been applied for?.....	107
4.	Impacts to be mitigated in their respective phases	108
5.	Impact Management Outcomes	134
6.	Impact Management Actions.....	134
7.	Financial Provision	134
7.1.	Determination of the amount of Financial Provision.	134
7.2.	Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.....	134
7.3.	Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.....	134

7.4. Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.	135
7.5. Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives	136
7.6. Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.	137
7.7. Confirm that the financial provision will be provided as determined.....	143
8. Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including.	143

List of tables

Table 1: EAP Details.....	11
Table 2:applicant details	12
Table 3: Summary of the EAP's qualification and experience.	12
Table 4: Description of the properties.	13
Table 5:NEMA triggered activities.....	17
Table 6: Activities to be undertaken at different phases of the proposed activity.....	21
Table 7: Applicable legislation to this Application.....	23
Table 8: Summary of issues raised by I & Aps.....	31
Table 9 Population Distribution per Local Municipality within the Ugu:	44
Table 10:population distribution per local municipality within the Ugu district	44
Table 11:socio-economic indicators	47
Table 12: Methodology used in Determining and Ranking the Nature, Significance, Consequences, Extent, Duration and Probability of Potential Environmental Impacts and Risks	52
Table 13: Criteria for Rating of Classified Impacts	54
Table 14: Positive and Negative Impacts of the Project	54
Table 15: The possible mitigation measures that could be applied and the level of risk:	57
Table 16: Summary of potential impact risks	95
Table 17: Summary of specialist reports	97
Table 18: Mitigation measures for Construction, Operational and Decommissioning phase of the project.....	108
Table 19:rehabilitation measures	135
Table 20: Financial Provision for Rehabilitation for year 1	137
Table 21: Responsible person for the project	144
Table 22: mechanism for monitoring compliance.....	146

List of figures

Figure 1:locality map of the proposed prospecting right application.....14

Figure 2: Conceptual site plan for the proposed project16

Figure 3: Site Notice was placed on R612 road within the proposed site30

Figure 4: Site notice placed on 15 Hazelwood Dr, Umzinto, uGu district municipality.....30

Figure 5: Topography map of the proposed area.35

Figure 6: Vegetation Cover of the proposed site.37

Figure 7: Geology Map of the proposed site39

Figure 8: Surface water map and tributaries for the proposed project40

Figure 9: Map represent the location of Umdoni Local Municipality43

Figure 10:Population distribution per age & gender.....46

Figure 11:Population distribution per age and gender.....46

Figure 12 : population composition per race group47

Figure 13: Farming fields and infrastructure on site were observed.50

Figure 14: Hiking trails were discovered during site assessment.50

Figure 15: Umzinto River was discovered on site.50

Figure 16: An overview of vegetation and sugar cane harvest50

Figure 17: Environmental Land use map for the proposed Site51

Figure18: composite map of the proposed site..... 106

PART A

Scope of Assessment and Basic Assessment Report

1. Contact Person and correspondence address

(i). Details of the EAP

Table 1: EAP Details

<u>Consultant Name</u>	<u>Joan Consulting (Pty) Ltd</u>
<u>Report compiled by:</u>	<u>Neluheni Phumudzo</u> <u>071 436 616</u> Phumudzo@joanprojects.co.za
<u>Report reviewed by:</u>	<u>Mulalo Tshilimandila</u> <u>079 823 2446</u> mulalo@joanprojects.co.za
<u>Report approved by:</u>	<u>Lufuno Mutshathama</u> <u>073 912 0800</u> lufuno@Joanprojects.co.za
<u>Postal address:</u>	<u>P O Box 4147, Honeydew, 2040</u>
<u>Physical address:</u>	<u>09 Loerie Road, Randpark ridge, Randburg,</u> <u>Johannesburg</u>
<u>Telephone:</u>	<u>011 791 5032</u>
<u>Fax:</u>	<u>086 235 5142</u>

(ii). Details of the applicant

Table 2:applicant details

ITEM	DETAILS
<u>Applicant Name</u>	Afli Exploration 3 (Pty) Ltd
<u>Contact Person</u>	Ian Timothy Harebottle
<u>Cell No:</u>	063 586 9109
<u>E-mail address</u>	ian@sa-lithium.com
<u>Residential address</u>	1st Floor, Paramount Place, 105 Main Road, Green Point, Cape Town
<u>Postal Address</u>	1st Floor, Paramount Place, 105 Main Road, Green Point, Cape Town

(iii). Expertise of the EAP

Summary of the qualifications and experience of the EAP

Table 3: Summary of the EAP's qualification and experience.

Name of the EAP	Experience
Phumudzo Reinett Neluheni (intern)	Phumudzo Reinett Neluheni is an Environmental Assessment Practitioner and Terrestrial Ecologist in training at Joan Consulting (Pty) Ltd. She holds a Bachelor of Science degree in Environmental Science from University of Johannesburg. Phumudzo also has experience in environmental training and awareness, she obtained when working at the Gauteng Department of Agriculture and Rural Development (GDARD) as Environmental Educator.

Name of the EAP	Experience
Lufuno Mutshathama	<p>The EAP (Lufuno Mutshathama) holds a Bachelor of Environmental Science from the University of Venda. She is a certificated natural scientist with the South African Council of Natural Scientific Professionals (SACNASP Reg: 114437). She is also registered with the Environmental Assessment Practitioner Association of South Africa (EAPASA Reg.2019/1789).</p> <p>Lufuno Mutshathama has over 14 years of experience in the field of Environmental Management, having worked largely in South Africa's mining sector. She worked 3 years as an environmental officer at the Department of Mineral Resources, 2 years as a group Environmental Manager in the mining sector and just over 9 years in environmental consulting as Founder and Managing Director of Joan Consulting. Her field of expertise includes the compilation of Environmental Impact Assessments and EMPr, environmental auditing and stakeholder engagement.</p>

2. **Location of the overall Activity.**

The project site is located in the KwaZulu Natal Province in South Africa. It is situated at located approximately 64km South-West of Durban and approximately 50km North of Port Shepstone in the KwaZulu natal province of South Africa, within uGu District (Port Shepstone) and Umdoni Local Municipality.

Table 4: Description of the properties.

Application area (Ha)	The extent of the prospecting area is approximately 4 309 ha.
Magisterial district:	Port Shepstone
Local Municipality	Umdoni Local Municipality
District	uGu District
Distance and direction from nearest town	The site is located approximately 64km South-West of Durban and approximately 50km North of Port Shepstone
Farm names:	21-digit Surveyor General Code
Equeefa 17559	NOET00000001755900005
Equeefa 17559	NOET00000001755900008
Equeefa 17559	NOET00000001755900009

Equeefa 17559	NOET00000001755900011
Equeefa 17559	NOET00000001755900012
Equeefa 17559	NOET00000001755900024
Equeefa 17559	NOET00000001755900025
Equeefa 17559	NOET00000001755900031
Equeefa 17559	NOET00000001755900034
Equeefa 17559	NOET00000001755900036
farm Equeefa 2162	NOET00000000216200001
Remaining extent of farm Umzinto river dam 15572	NOET00000001557200000
Remaining extent of farm Crookes 17407	NOET00000001740700000
Portion 5 of farm Umzinto sugar co 1403	NOET00000000140300005

3. locality map

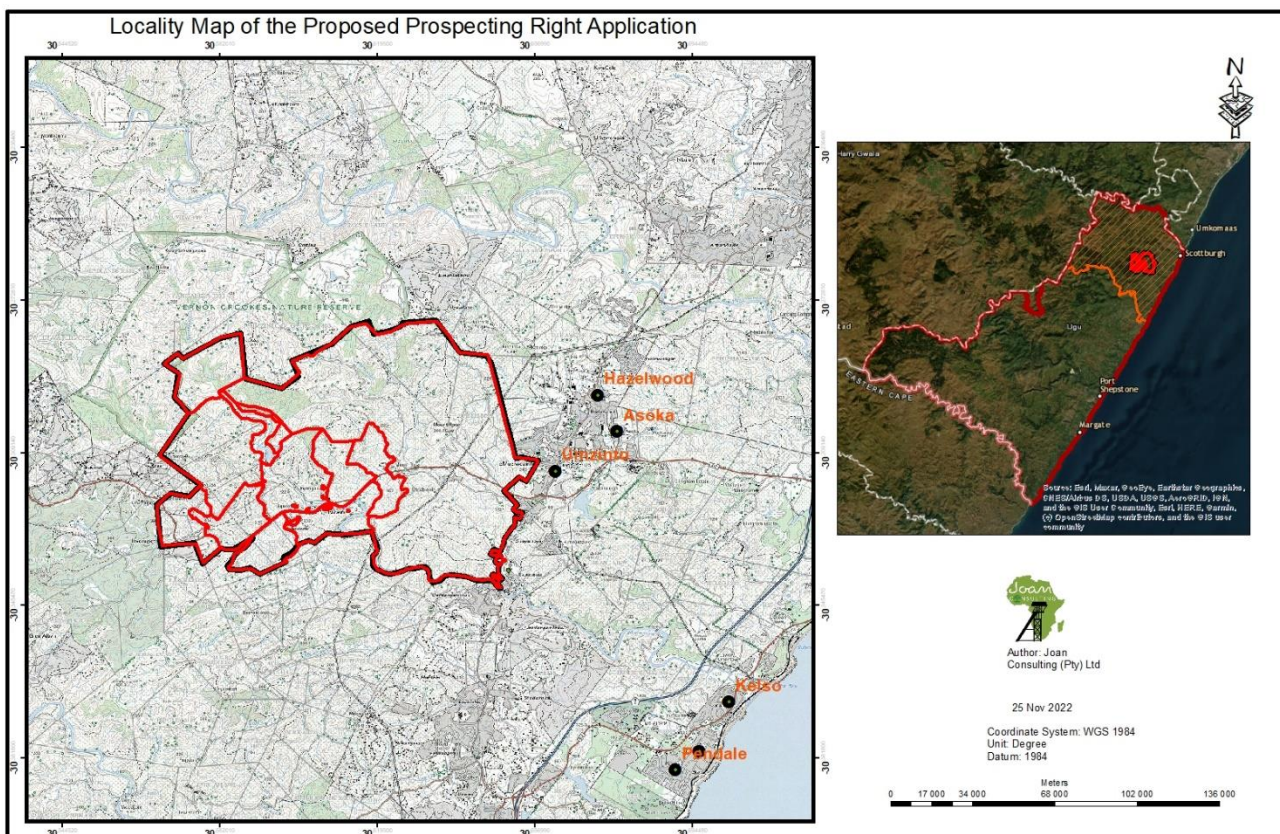


Figure 1: locality map of the proposed prospecting right application

4. Description of the scope of the proposed overall activity

(This conceptual map may change depending on desktop review)

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

AFLI Exploration 3 (Pty) Ltd is applying for a prospecting right with the competent authority, the Department of Mineral Resources and Energy (DMRE) KwaZulu-Natal region. The prospecting right is set to explore the following mineral reserves, Lithium, Feldspar, Tin, Tantalum, Zinc, and Dimension stones. The area has not previously been mined; geophysical studies indicate the potential presence of the minerals, and an Environmental Authorisation (EA) is needed for the exploration process. The prospecting right application is conducted in terms of the Environmental Impact Assessment Regulations, 2014 (as amended) promulgated in terms of the National Environmental Management Act (Act No. 107 of 1998). Refer to table 6 for proposed activities and associated legislature.

The following activities will be undertaken on site including associated infrastructure as part of the site establishment.

- Diesel power source vehicles and machineries will be used for the proposed activities.
- There are currently existing roads that give access to the proposed site. In areas where it's problematic or with no access at all, temporary roads will be established (through trucks moving through the bush, not bush clearing).
- It is mandatory under the health and safety act that ablution facilities are made available where people will be undertaking any activities. Chemical toilets will be erected on site for the sanitation purposes.
- Temporary contractor's yard will be erected on site and will entail site offices, ablution facilities as well as parking areas. No workers will stay on site.
- Storage and handling of hydrocarbons which is limited to fuel (diesel) and a minimum of less than 30m² will be stored on site powering the machineries.
- Water for prospecting purposes will be brought to site. Portable water for contractors will be provided and will be stored on site in a tanker of 12 000 litres capacity.

It must be noted that the site plan is subjected to change depending on the findings of the desktop study, geophysical and geochemical surveys to be undertaken as part of the prospecting activities. Project maps are also attached as appendix 2 of this report.

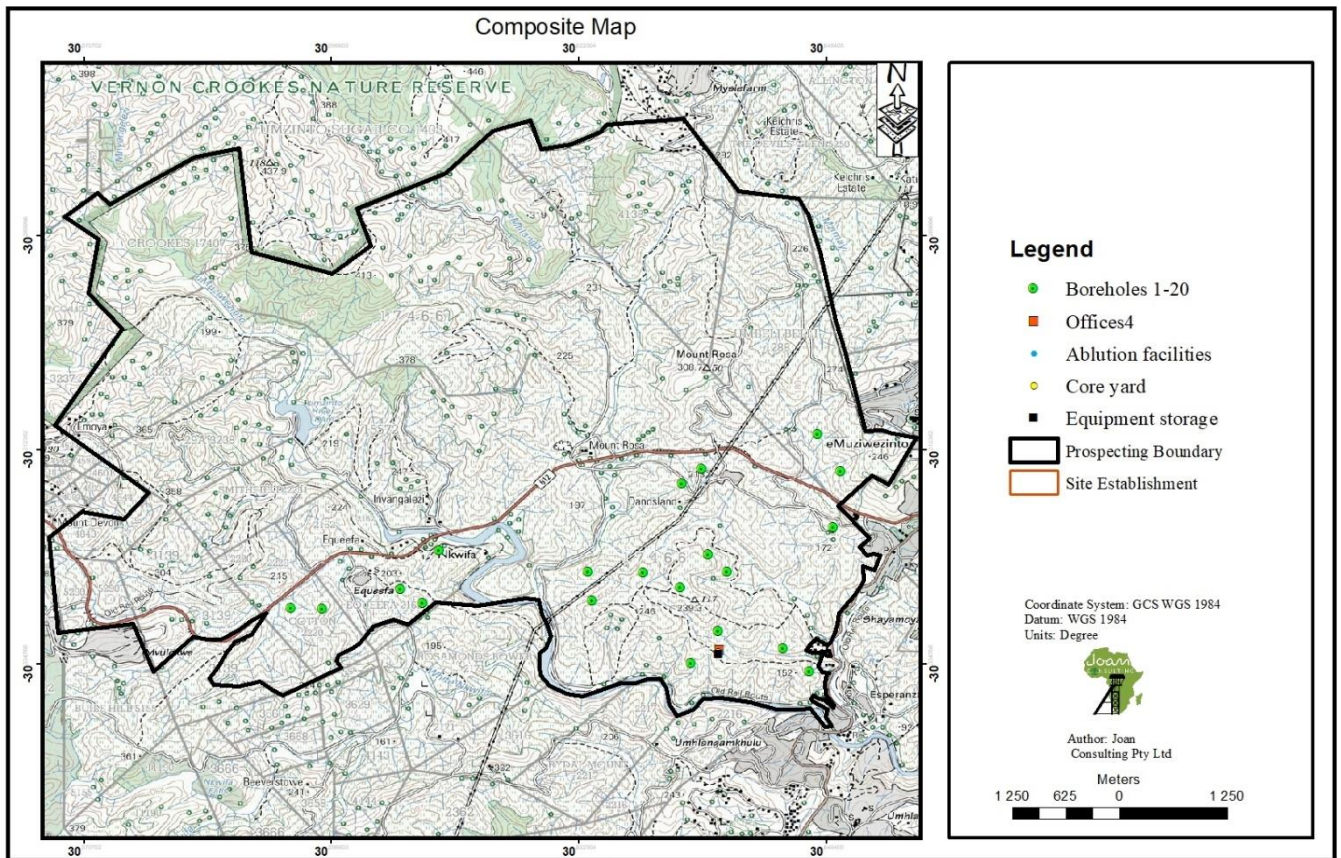


Figure 2: Conceptual site plan for the proposed project

5. Listed and specified activities

Table 5:NEMA triggered activities.

NAME OF ACTIVITY E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc. E.g. For mining - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)	Aerial extent of the Activity Ha or m²		LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)
Establishment of Drill Site (Drilling):20 boreholes	2000 m ²	0.2ha	X	Activity 20- GNR 327 of 2017
Site Establishment <ul style="list-style-type: none"> • Workshop • Storage Yard • Ablution • Office 	2000 m ²	0.2ha	X	Activity 20- GNR 327 of 2017
Access road (Existing)	–	–	–	N/A
Water Sump	16 m ² x 20 holes	0.032ha	X	N/A
Total Vegetation removed	4320 m ²	0.432ha	X	Activity 20- GNR 327 of 2017

6. Description of the activities to be undertaken

Afli exploration 3 (Pty) Ltd is applying for a prospecting right, triggering the basic assessment process of the EIA regulations. The mineral of interests includes dimension stone (general), feldspar, lithium ore, tantalum/niobium ore& zinc ore. The prospecting method that will be used is drilling, using the drill rig and no bulk sampling will be undertaken. A total of 20 boreholes will be drilled to recover core log from the underground. About Twenty (20) boreholes with depths of about 150m each will be drilled along a number of traverse lines to establish the stratigraphy of the Lithium, feldspar, Tin, tantalum, dimension stone and zinc bearing seam. Each drill (10m x10m) site will be about 100m² each, meaning that 20 boreholes multiply by 100m². Every drill site will comprise of a borehole, drill rig and a sump. Recovered cores will be taken from each borehole to test for the targeted minerals at the laboratory.

Beside the drilling of holes which is the invasive method, there are also other prospecting activities to be undertaken which are non-invasive, thus methods that do not have physical contact with the environment. Non-invasive methods will be used in phase 1 and invasive methods in phase 2 and 3 as explained below, if there is positive outcome in phase 1 then invasive activities will be undertaken.

Afli exploration 3 (Pty) Ltd intends to undertake prospecting activities for a variety of minerals by means of the following non-invasive invasive and Infill Drilling/ Pre-Feasibility and bankable feasibility study prospecting methods:

Phase 1

6.1. Description of planned non-invasive activities: Desktop studies.

Desktop studies and geological interpretation of all available data including any historic prospecting data, geochemical data, and any airborne geophysical data or remote sensing data. Available reports and publications pertinent to the geology of the area will also be reviewed.

6.1.1. Airborne geophysical survey

This survey will comprise airborne and ground magnetics in order to determine areas with high anomalies and presence of geological structures. This study is aimed at high-resolution delineation of Lithium, feldspars, Tin, tantalum, dimension stones and zinc horizons in the area, which are the exploration targets.

6.1.2. Geological field Mapping

To be conducted in areas identified by the desktop study. Geological mapping with the aid of aerial and satellite imagery will be undertaken in order to confirm the presence of Lithium, feldspars, Tin, tantalum, dimension stones and zinc bearing layers. Any outcrops will be noted, and this mapping programme will be conducted simultaneously with the soil geochemical and geophysical survey.

6.1.3. Soil Geochemical survey

Soil samples will be taken for laboratory analysis, quantity of the samples will depend on the exploration geologists. Soil samples will be taken across traverse lines over the project area, quantity/number of the soil samples taken will depend on the size of the area. Samples will be collected and assayed for Lithium, feldspars, Tin, tantalum, dimension stones and zinc. The results of the soil geochemical survey will be integrated with the airborne geophysics to select sites for reconnaissance drilling.

6.1.4. Soil Geophysical survey.

An airborne /ground geophysical survey is planned to cover the project area in order to determine the areas with high anomalies and to interpret the presence of any geological structures. The survey will be used together with the geochemical study, remote sensing and mapping to identify targets for initial drilling.

Phase 2

6.2. Description of planned invasive activities: Initial drilling

(These activities result in land disturbances e.g., **sampling, drilling, bulk sampling**, etc)

This prospecting or drilling will comprise of about Twenty (20) boreholes up to 150m deep in a drill site that is 150m² to test the targets identified through mapping, geophysical and geochemical studies. An inferred resource may be calculated at this stage should the drilling results prove promising.

6.2.1. Reconnaissance Drilling

Twenty (20) boreholes with depths of about 150m each will be drilled along a number of traverse lines to establish the stratigraphy of the Lithium, feldspar, Tin, tantalum, dimension stone and zinc bearing seam. This drilling will be evaluated through borehole logging and assaying. Should the results prove encouraging, further drilling may be undertaken during Phase 2. Borehole logging, assaying, interpretation and report writing. Core will be logged geologically in detail, and assayed for Lithium, feldspars, Tin, tantalum, dimension stones and zinc, across selected horizons. Computer assisted geological and mineralisation modelling and evaluation will be carried out, and a report will be compiled recommending whether the programme should be terminated or continued.

Phase 3

6.3. Infill drilling.

Should initial drilling show encouraging intersections, infill drilling of twenty (20) more boreholes will be drilled to bring the resource up to an indicated category. Resource modelling, and mineralogical studies may be undertaken at this stage, and these results may be incorporated into a pre-feasibility study.

6.4. Pre-/feasibility studies

(Activities in this section includes but are not limited to initial, geological modelling, resource determination, possible future funding models, etc)

A report will be compiled based on the results of the infill drilling and resource modelling. This report may serve as a pre-feasibility study and would outline in more detail and recommend programme to take the project to a bankable feasibility stage, should this be envisaged.

6.5. Bankable Feasibility Study.

After the description of the general exploration process, they compile the results of other feasibility results and combine the information that is required for the permits, environmental impacts, and mine closure plans. This will be used as a full analysis to present the project to the Bank or investors for funding.

The table below incorporates the information required in respect of Regulations 7(1)(f), 7(1)(h) and 7(1)(i):

Table 6: Activities to be undertaken at different phases of the proposed activity.

Phase	Activity (What are the activities that are planned to achieve optimal prospecting)	Skill(s) required (Refers to the competent personnel that will be employed to achieve the required results)	Timeframe (In months) for the activity)	Outcome (What is the expected deliverable, e.g., Geological report, analytical results, feasibility study, etc)	Timeframe for outcome (Deadline for the expected outcome to be delivered)	What technical expert will sign off on the outcome? (e.g., geologist, mining engineer, surveyor, economist, etc)
(1) Non-invasive prospecting	Reconnaissance site Visits	Exploration Geologist	3 months	<ul style="list-style-type: none"> • Checking any Geological structures in the area, lithologies etc. • Planning the exploration program 	3 Months	Exploration Geologist
	Geological Mapping	Exploration Geologist	3 Months	Detailed Confirmation of Desktop study information an	4 Months	Exploration Geologist

				d Reconnaissance study		
	Geochemical surveys/ soil sampling	Exploration Geologist/ Geochemist	4-6 Months	• Lab results	12 Months	Exploration geologist/ Geochemist
	Geophysical Survey	Geophysics	6 Months	• Geophysical Report	12 Months	Exploration geologist/ Geophysics
(2) Invasive prospecting	Reconnaissance Drilling	Exploration Geologist	6-12 Months	Initial mineral resource estimation report	24 Months	Exploration Geologist
	Diamond core drilling	Exploration Geologist	24 Months	Borehole core drilling and analysis	36 Months	Exploration Geologist
(3)	Infill Drilling	Exploration geologist	36-48 Months	Mineral resources estimations report	48 Months	Exploration Geologist
	Pre-Feasibility study	Exploration geologist/ Mine economist	48-60 Months	Prefeasibility reports. Resource statements, maps, plans (Competent person report)	60 Months	Exploration geologist/ Mine economist

7. Policy and Legislative Context

Table 7: Applicable legislation to this Application

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT?
Minerals and Petroleum Resources Development Act (No 28 of 2002).	Prospecting Right Application	Regulations in terms of Section 107 (1) of the Act were published in Government Notice No, R 526 on the 23rd of April 2004. The regulations provide details of the procedures to be followed in applying for or renewing mining and prospecting rights and permits and for the closure of mining operations as provided and described in the Mineral and Petroleum Resources Development Act (M&PRDA). The applicant lodged a Prospecting right as per the legislation.
National Environmental Management Act, 1998 [Act 107 Of 1998], as Amended	Environmental Authorisation Application and BAR	The prospecting or exploration activities requires a Basic Assessment to be Conducted in terms of the NEMA Regulations of 2014 as amended in April 2017. The NEMA regulations identify DMRE as the Competent Authority and details out the Basic Assessment process to be followed. The Environmental Authorisation application has been lodged and the Basic Assessment report requirement is fulfilled by this report.
National Environmental Management: Air Quality Act (Act No 39 of 2004)	Prospecting Right Application	No permitting or licensing is required for this legislation; however, the Dust Control Regulations describe the measures for control and monitoring of dust. These regulations will be adhered to during the operation.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT?
Environmental Impact Assessment (EIA) Regulations, 2014	Environmental Authorisation Application and BAR	This regulation gives guidelines in terms of methodology to be followed in terms of the requirement by NEMA and the content of the report thereof. This report forms part of the Basic Assessment of the EIA being undertaken, and the EA application has been lodged.
National Environmental Management: Biodiversity Act 2004 (ACT NO. 10 of 2004)	Vegetation clearance	BGIS LUDS has been consulted when determining the baseline environmental conditions for the areas impacted by proposed surface activities.
National Environmental Management: Waste Act, 2008 (Act No.59 of 2008)	Prospecting Right Application	The principles of the NEM: WA will be applied to all aspects of the activities covered by this application. This will take in account all measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development.
National Water Act, 1998 (Act No. 36 of 1998)	Prospecting Right Application	The principles of the NWA will be applied to all physical activities implemented as part of ongoing drilling. The purpose of the National Water Act of 1998 (Act no.36 of 1998) is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in a manner that promotes equitability, efficiency and sustainability for present and future generations. The activities will comply with the provisions of the act during the operational.
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	Prospecting Right Application	<p>All activities covered by this application will avoid any identified heritage resource to prevent the destruction or unsympathetic alteration of heritage resources that have either Formal or General Protection.</p> <p>A permit may be required should a cultural/heritage sites be identified on site be required to be disturbed or destroyed as a result of the proposed development.</p>

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT?
Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)	Prospecting Right Application	Land use selected is compatible to the local spatial land use as the land already have an existing mining right
The Mine Health and Safety Act, 1996 (No 26 of 1996)	Prospecting Right Application	<p>The Mine Health and Safety Act, 1996 (No 26 of 1996) provides for the protection of health and safety of employees and other persons at mines and serves-</p> <ul style="list-style-type: none"> • To promote a culture of health and safety. • To provide for the enforcement of health and safety measurements. • To provide for appropriate systems for employee, employer and state participating to provide effective monitoring systems and inspections, investigations, and inquiries to improve health and safety. • To promote training and human resource of development. • To regulate employers' and employees' duties to identify hazards and eliminate, control, and minimise the risk to health and safety. • To entrench the right to refuse to work in dangerous conditions
South African National Biodiversity Institute (SANBI) Biodiversity GIS (bgis.sanbi.org)	Baseline environmental description	Used during desktop research to identify sensitive environments within the right area.
National Road Traffic Act (Act No 93 of 1996)	Prospecting Right Application	<ul style="list-style-type: none"> • An abnormal load/vehicle permit may be required for the drill rig to be taken to the site. • These include route clearances and permits will be required for vehicles carrying abnormally heavy or abnormally dimensioned loads.

8. Need and desirability of the proposed activities.

The suggested prospecting activities allow for surveying of the geographical site in order to discover actual or prospective mineral deposits. Prospecting will determine whether the following minerals are present or absent at the designated site: lithium, feldspar, tin, tantalum, dimension stones, and zinc. The project may provide benefits for long-term job stability.

If the results of prospecting activities and the feasibility study are favourable, the ALFI Exploration 3 (Pty) Ltd project may be converted (through the proper procedures and applications) into a mining right project, which will then positively contribute to the socio-economic development of the country by creating jobs while encouraging the growth of nearby communities and local business expansion.

Lithium (Li), a light, soft silver-white metal, is found in three different types of mineral formations: brine (saline groundwater), pegmatites, and sediments. Due to the fact that most deposits contained lithia concentrations are low, only a small number of them can be economically mined.

as a result of an over reliance on fossil fuels for energy supply, The Earth is going through climate change, which is producing global warming. This shift is being brought on by the effects of human activity on the planet. The transition away from fossil fuels and toward renewable energy sources has begun to be planned and implemented globally.

To meet the challenge of climate change, energy transition will necessitate a shift away from fossil fuel power generation and toward renewable energy installations, as well as the use of lithium batteries. Throughout the world, internal combustion engine (ICE) vehicles are being phased out in favour of battery-powered electric vehicles. The necessity to move from fossil fuels to renewable energy sources will increase demand for lithium in today's technological culture.

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

The preferred site was chosen based on its geology and the potential of minerals of interest. Since the preliminary drill hole areas are based on the expected mineral resources located within that area, no alternative site locations were evaluated; however, alternative sites may be determined once the desktop studies and geophysical surveys have been accomplished and the precise position and number of target drill sites are confirmed.

With the exception of the drill hole location on the proposed area, none of the preliminary drill hole areas are close to any sensitive environmental features, hence limiting any potential adverse

environmental effects. The environmental impact will be reduced by limiting the footprint of activities and using disturbed areas whenever practical. The preliminary drill hole areas are also far from any community or residence, which limits any potential negative social impacts.

An environmental authorisation will allow Afli exploration 3 (Pty) Ltd to survey or investigate the site and identify an actual or probable mineral deposit. Data gathered from prospecting activities will be required for modelling, determining the viability of the resource, and planning the mine.

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

Details of the development footprint alternatives considered.

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

10.1. Details of the development footprint alternatives considered.

The location of the activity, the type of the activity, the design or layout plan and operational aspects of the activity were all determined by the type of the mineral, availability, and positioning.

10.1.1. The property on which or location where it is proposed to undertake the activity.

The application area is being guided by the presence of higher potential underlying dimension stone (general), feldspar, lithium ore, tantalum/niobium ore & zinc ore as well as the geology of the area, thus not any location or property is suitable for the proposed activity. The proposed property is situated approximately 64km South-West of Durban and approximately 50km North of Port Shepstone.

10.1.2. The type of activity to be undertaken.

The type of activity is determined by the proponent who in this regard wants to undertake prospecting activity, and therefore cannot assess alternative activity. The prospecting activity will be undertaken through the drilling (for core extraction). These methods provide feasible and cost-effective measures of obtaining ore samples from underground, which will then be analysed for the presence, quantity, and grade of underlying dimension stone (general), feldspar, lithium ore, tantalum/niobium ore & zinc ore. Prior to undertaking drilling activities, non-invasive methods of prospecting such as geophysical mapping and desktop study will be undertaken.

The bulk sampling alternative or additional method of prospecting was assessed and was found to be not cost effective and not very environmentally friendly and that if avoided, the desired results will still be obtained.

10.1.3. The design or layout of the activity.

The proposed prospecting activities are intended to provide an accurate representation of the minerals present at the chosen site. The site's layout is conceptual, allowing for changes in the location of drill holes as prospecting methods are used.

10.1.4. The technology to be used in the activity.

The preferred prospecting method (drilling) is a proven method for this type of minerals. This prospecting method is also considered to have a low environmental impact if managed correctly, as a result, no technological alternatives were considered.

10.1.5. The Operational Aspects of the Activity.

The operational aspect of the activity alternative was assessed, but no alternatives for the road, mineral and location of boreholes were considered because there will be no new road construction and the minerals and location of the boreholes are dependent on the geological map's guidance.

10.1.6. The option of not implementing the activity.

The option of not pursuing exploration activities on the project site was analysed and it entails that the site remains in its existing state which is "previously found before it was disturbed". This means there will not be any impacts on the biophysical environmental and there will also not be any improvement to the livelihoods of people. Also, choosing this option would prevent the socio-economic growth potential from being assessed because it would be unable to quantify the potential economic backreef.

11. Details of the Public Participation Process Followed

11.1. Objectives of public participation Process

- ❖ Provide I&APs with sufficient and correct information to assist them to raise comments and make recommendations which are included in the Environmental Impact assessment process.
- ❖ Provides I&APs with the opportunity of suggesting ways of reducing or mitigating negative impacts of an activity and for enhancing positive impacts.
- ❖ Providing I&APs with sufficient and accessible information to assist them to Contribute local/indigenous knowledge to the process.
- ❖ Advise I&APs of the outcome of the environmental authorisation (i.e. DMRE decision), and the appeals process and procedure

11.2. Tasks undertaken for the Public Participation Process

This section of the report provides an overview of the tasks undertaken for the Public Participation Process (PPP). The PPP is conducted in terms of Chapter 6 of NEMA and included the following:

- ❖ Identification of key Interested and Affected Parties (affected and adjacent landowners) and other stakeholders (organs of state and other parties)
- ❖ Placement of site notices on farms, municipal area and other accessible public areas
- ❖ Formal notification of the application to key Interested and Affected Parties
- ❖ Consultation and correspondence with I&AP's and Stakeholders and the addressing of their comments.
- ❖ Newspaper adverts.

11.2.1. Identification of key Interested and Affected Parties:

Public Participation is the involvement of all parties who are either potentially interested and/or affected by the proposed development. The principal objective of public participation is to inform and enrich decision-making. This includes landowners, adjacent landowners, organ of states and any interested and affected parties.

11.2.2. Placement of site notices

Site notices were placed in IsiZulu and English within the community of proposed project site on various visible locations such as roads and municipality. Pictures were taken as a proof (See Appendix 3C).



Figure 3: Site Notice was placed on R612 road within the proposed site



Figure 4: Site notice placed on 15 Hazelwood Dr, Umzinto, uGu district municipality

11.2.3. Newspaper adverts

The project application was published in English and Isizulu and marketed in the local newspaper. uGu eyethu was announced on the 10th of May 2023 in the Isizulu language, while the South Coast was advertised on the 11th of May 2023 in the English language (See Appendix 3B).

11.2.4. Availability Draft Basic Assessment Report and Background information Document (BID)

A draft Basic Assessment Report and BID which summarize the application process as well the impacts associated with the proposed project will be sent to all registered interested and affected parties for review, the report will also be available for those who will not be able to access it due to unknown reason upon request. The review period of the draft Basic Assessment Report will be for a period of 30 days from 16 May 2023 to 14 June 2023 (See Appendix 3A).

11.2.5. Public Meeting

A public participation meeting will be held with the all the community members, interested and affected parties and stakeholders.

11.2.6. Summary of issues raised by I & Aps

Comments received and are attached as appendix 3I.

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

Table 8: Summary of issues raised by I & Aps

Interested and Affected Parties		Date	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Comments Received			
<u>AFFECTED PARTIES</u>					
Landowner/s	X				
Lawful occupier/s of the land					
Landowners or lawful occupiers on adjacent properties	X				
Municipal councillor	X				
Municipality	X				\

Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					
Communities					
Dept. Land Affairs					
Traditional Leaders					
Dept. Environmental Affairs					
Other Competent Authorities affected					
<u>OTHER AFFECTED PARTIES</u>					

<u>INTERESTED PARTIES</u>				

12. The Environmental attributes associated with the alternatives.

(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical, and biological aspects)

12.1. Baseline Environment

This section is intended to provide environmental information which is interlinked with the proposed site. It will identify all environmental aspects within the site that will need special consideration during all the phases of the projects with the intent to minimize impacts.

12.1.1. Climate, Temperature and Rainfall

Umzinto normally receives about 814mm of rain per year, with most rainfall occurring mainly during mid-summer. The chart below (lower left) shows the average rainfall values for Umzinto per month. It receives the lowest rainfall (11mm) in June and the highest (109mm) in January. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Umzinto range from 22°C in July to 27.4°C in February. The region is the coldest during July when the mercury drops to 9.1°C on average during the night.

13. Topography

The KwaZulu-Natal province is well-known and characterised by its undulating topography. Umdoni local municipality being a coastal strip, the topography generally falls towards the coast and is segmented by many water courses (streams/rivers) resulting in numerous hills and valleys as well as very flat areas along the coast. The agricultural pattern within the area is primarily due to the undulating topography, which prescribes the available land parcels out of the valley lines and along other major structuring elements.

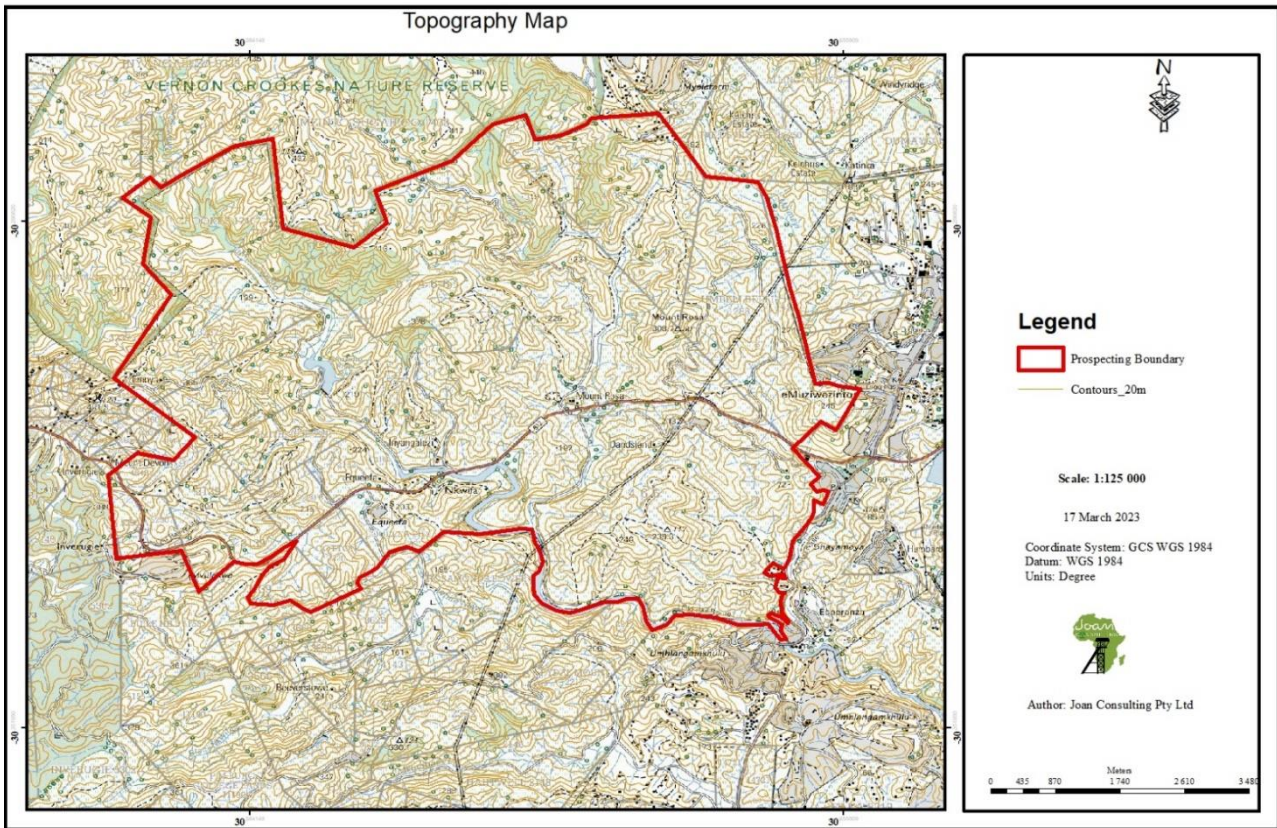


Figure 5: Topography map of the proposed area.

14. Current Air Quality Status

No ambient air quality monitoring has been conducted in the Umdoni LM. In addition, no air quality assessments have been done beside that for the Wild Coast N2 Toll Road. Despite the lack of information, the absence of significant sources of air pollution implies that air quality in the local municipality is relatively good, except when sugar cane is burnt and in close proximity to sources.

Emissions from industrial activity to the north and the south into the Umdoni LM are unlikely to affect ambient air quality in the local municipality despite the prevailing winds from the northeast and southwest. The prevailing north-easterly winds will disperse pollutants from Sappi Saiccor towards the Umdoni LM, but the effect will be minimal and only occasional in the north-eastern parts of the Umdoni LM

15. Vegetation

15.1. Biome

Rutherford and Westfall (1994) described the project area as falling within the Grassland biome. The grassland biome is the second largest biome in South Africa, covering 28.4% of the country or more than 360 000 km². The grassland biome is found in summer rainfall areas, from sea level to above 2000 m. The Grassland Biome is very rich in plants, with nearly 3800 plant species recorded. Because fires

are frequent, there are very few woody plants like trees (mainly in river courses and on rocky slopes). C4 grasses dominate throughout the biome, except at the highest altitudes where C3 grasses become prominent.

In the past, grasslands were home to large herds of animals like the Black Wildebeest, Blesbok and Eland. Today these animals mainly survive in nature reserves and on game farms. Grasslands are rich in birds, many of which eat seeds, e.g. Black Korhaan, Blue Crane and Helmeted Guinea fowl. Nearly half of the original Grassland Biome has been ploughed up to plant maize, sunflowers, sorghum and wheat. Grassland also supports livestock farming, including cattle and sheep. Most of Gauteng and the Mpumalanga highveld are found in the Grassland Biome. Much of this region has been developed for mining, industry and urban development.

The Grassland Biome is considered to have an extremely high biodiversity, second only to the Fynbos Biome. Rare plants are often found in the grasslands, especially in the escarpment area. These rare species are often endangered, comprising mainly endemic geophytes or dicotyledonous herbaceous plants. Very few grasses are rare or endangered. The scenic splendour of the escarpment region attracts many tourists

15.2. Broad vegetation classification and Habitat Type

EKZNW list three vegetation types as existing in the Umdoni Municipality namely South Coast grassland, South Coast Bushland and KwaZulu-Natal Coastal Forests.

Mucina and Rutherford (2006) recognise the South Coast Grassland and South Coast Bushland as one vegetation type, CB3 The KwaZulu-Natal Coastal Belt Grassland is distributed in KwaZulu-Natal Province: Long and in places broad coastal strip along the KwaZulu-Natal coast, from near Mtunzini in the north, via Durban to Margate and just short of Port Edward in the south.

Altitude ranges from about 20–450 m. It highly dissects undulating coastal plains which presumably used to be covered to a great extent with various types of subtropical coastal forest. Some primary grassland dominated by *Themeda triandra* still occurs in hilly, high-rainfall areas where pressure from natural fire and grazing regimes prevailed. At present the KwaZulu-Natal Coastal Belt is affected by an intricate mosaic of very extensive sugarcane fields, timber plantations and coastal holiday resorts, with interspersed secondary *Aristida* grasslands, thickets and patches of coastal Thornveld.

This vegetation type is considered Endangered with a conservation target of 25%. Only very small part statutorily conserved in Ngoye, Mbumbazi and Vernon Crookes Nature Reserves. About 50% transformed for cultivation, by urban sprawl and for roadbuilding.

The Forest component can be more refined into Indian Ocean Coastal Belt Forest, Dune Forest, Coastal Lowlands Forest, and Swamp Forest. An additional category, namely Coastal Scarp Forest occurs in the Vernon Crookes Nature Reserve and needs to be noted here from the perspective of potential ecological corridors. this further refinement may be relevant when considering management implications but is mentioned here as it could have implications related to the conservation status of these components.

This includes some forest on the Ifafa River, and on the Ellingham Estate, and large amounts of the forest on Finningley Estate and Renishaw Estate and adjoining properties. Forest better approaching Scarp Forest probably also occurs in other parts of the ULM. There is also definite occurrence of Swamp Forest, a type recognized by Mucina & Rutherford and assessed as Endangered, within the Umdoni local municipality. This is present on the Ellingham Estate but almost certainly occurs elsewhere in the municipality.

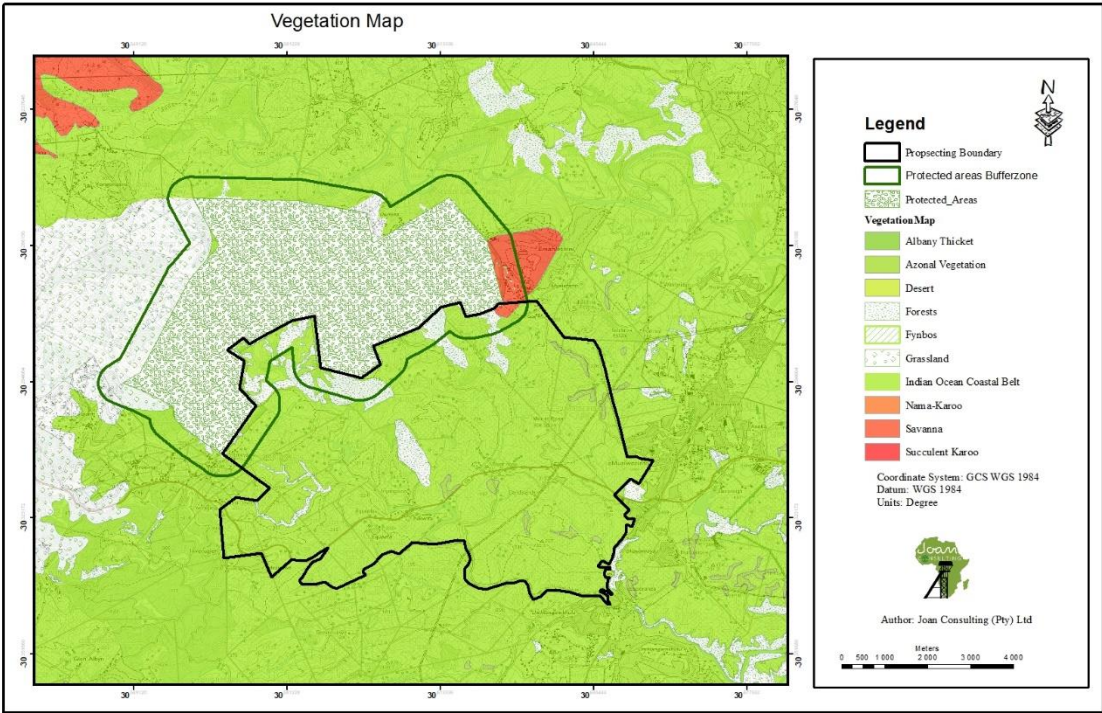


Figure 6: Vegetation Cover of the proposed site.

16. Geology

Description why the Geological formation substantiates the minerals to be prospected for.

(Provide a justification as to why the geological formation supports the possibility that the minerals applied for could be found therein).

The application area covers rocks belonging to the Mzumbwe Terrane and rocks from the Natal and Karoo Supergroups.

Mzumbwe Terrane A complex association of pre-tectonic layered, medium to coarse grained grey gneissic tonalites, quartz diorites, trondhjemite and granodiorites that have undergone polyphase deformation, metamorphism and anatexis.

The suite also includes several syntectonic intrusive suites listed below:

- Mahlongwa Suite. - Porphyritic granite sheets
- Humberdale Granite - Biotite granite
- Mzimlilo Suite - Biotite granite
- Mkomazi Suite Garnet-biotite augen gneiss
- Equeefa Suite Metabasite

17.1. Natal Group

The Natal Group consists of two formations, each representing a tectonic cycle - a lower Durban Formation and an upper Mariannhill Formation. The former is subdivided into the Ulundi, Eshowe, Kranskloof, Situndu, Melmoth, and Dassenhoek Members, and the latter into the Tulini, Newspaper, and Westville Members. The sedimentary rocks comprising these units are greyish red, and consist of conglomerates, sandstones, siltstones, and shale.

16.2. Karoo Supergroup

The Karoo Supergroup is stratigraphically divided into five main groups, namely, Dwyka, Ecca, Beaufort, Stormberg, and Drakensberg groups, respectively. The stratigraphy of the main Karoo Basin is complex, and this complexity is related to its mode of origin and varied depositional environments such as deep-marine mudstone, shallow marine turbidite, and submarine fan deposit.

Attach a geological map that justifies the description why there is a possibility that the minerals applied for could occur on the land concerned.

Geological Map is attached as figure 6 below.

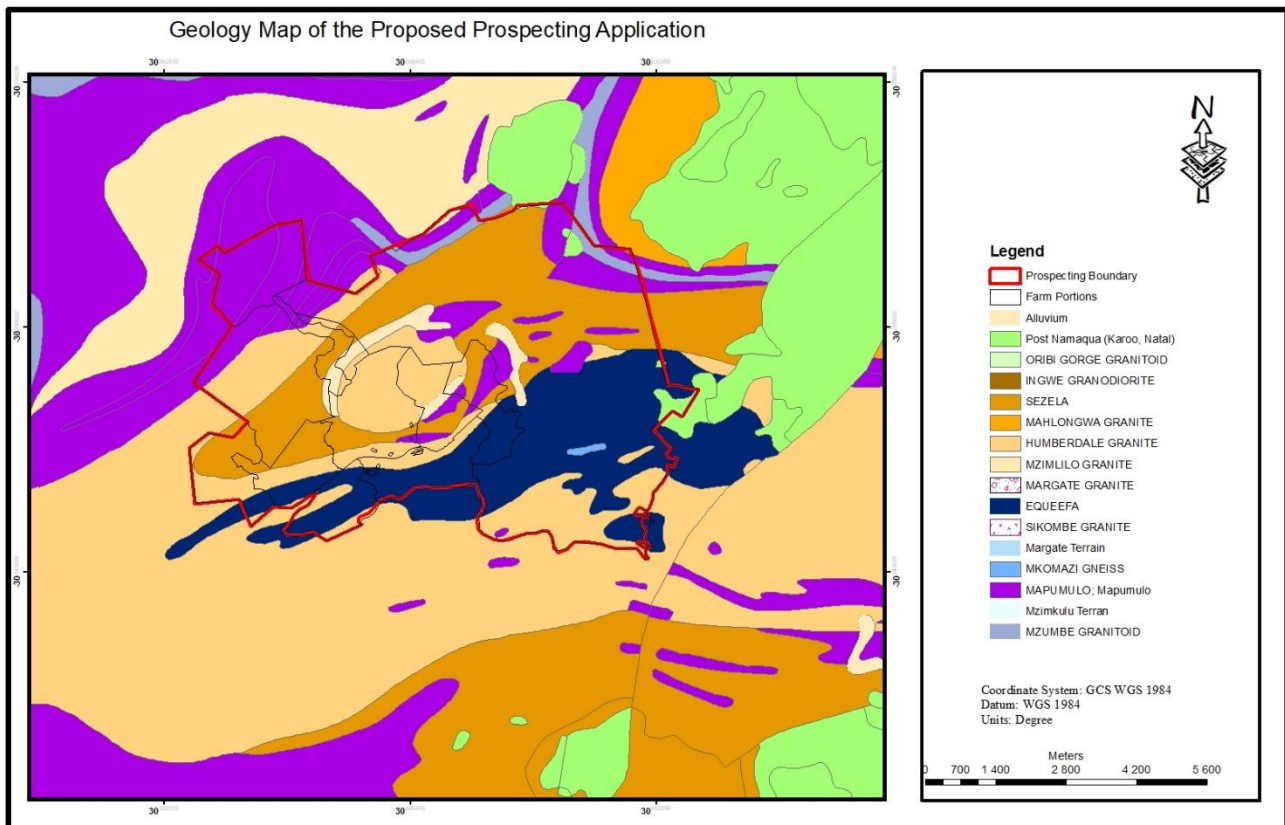


Figure 7: Geology Map of the proposed site

17. Surface water and tributaries

The aspect of the natural environment of the Umdoni local municipality area is dealt with according to the catchments of the various rivers and streams that drain the area. Either there are seven large surface water systems that occur within the area in part or as a whole with the former being the predominant situation. In addition to these there are a number of smaller systems that are fully contained within the municipality.

There are approximately 5 major rivers that traverse the municipality namely Amahlongwa, Ifafa, Mpambanyoni, Mtwalume and Umzinto rivers. The municipality also consists of numerous dams and wetlands. There are 225 wetlands covering 210.6 ha (0.9) of the municipality (sanbi). The Municipality recognizes the important role wetlands play in delivering ecosystem services such as water filtration and purification, and flood attenuation.

Whilst the municipality contains a number of rivers with significant runoff, no major impoundments exist in the region and their impact on the flow regimes is thus limited, but in certain instances, such as with the Mtwalume, there are many impoundments. Although these are relatively small, their accumulative impact on the flow regime will have the same as that of a larger impoundment. However, the influence of the dams on the Mzinto, Mkumbane and Sezela rivers (and the resultant water consumption from them) is indeed significant.

Surface water ecosystems in temperate zones such as the Umdoni local municipality where there are distinct variations in seasonal rainfall and runoff, are driven by fluctuations in flow volumes. The ecosystem health is dependent on the system receiving flood pulses in season and where there are impoundments these absorb these pulses and cause delays. The greater the size of the impoundments and/or the greater the number of impoundments in a system, the greater the delay will be in the seasonal flood pulse being sent through the system. This will impact on the ability of aquatic organisms to maintain their life cycles which in turn could have a negative impact on the health of the systems.

The Umzinto supply system, which receives its water from the Umzinto WTP (water treatment plant), includes the areas of Freeland Park, Hazelwood, Kelso Junction, Pennington, Umzinto and Park Rynie. Mtwalume supply system receives water from the Mtwalume WTP and includes the areas of Elysium, Ifafa, Mtwalume and Sezela. Afforestation and irrigation are widespread in the region, with commercial sugar farming being the dominant feature within the municipality.

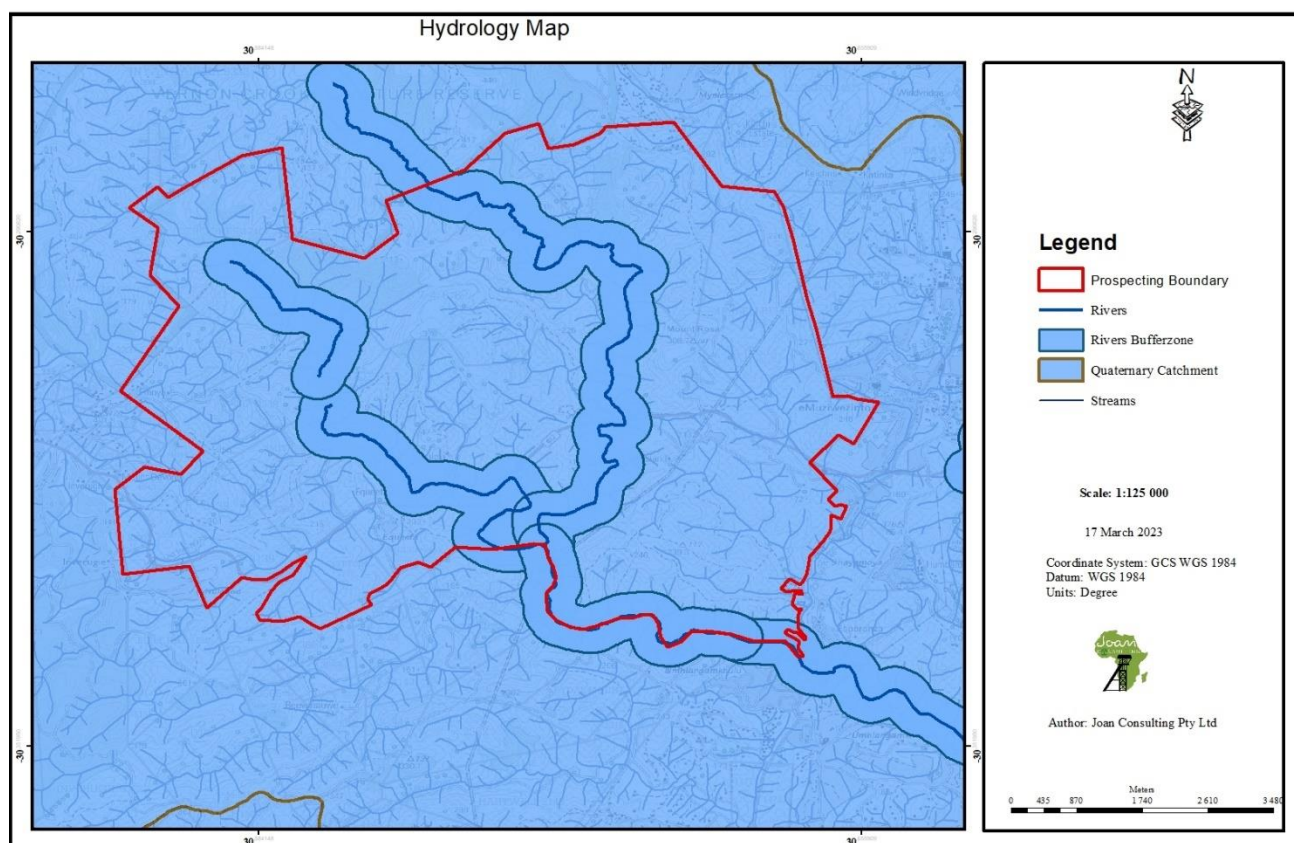


Figure 8: Surface water map and tributaries for the proposed project

18. Heritage

18.1. Archaeology

The Prospecting Right Application site was assessed for archaeological remains. The study confirmed that the KwaZulu-Natal coastal belt is heavily transformed by sugar cane, timber plantations and coastal resorts with interspersed secondary *Aristida* grasslands, thickets and patches of coastal Thornveld (Anderson 2018). The study did not identify any significant archaeological remains during the survey. Road cut sections and eroded sections were assessed for potential archaeological remains accidentally exposed erosion. Based on the field study results and field observations, the receiving environment for the Prospecting Right Application site is low to medium potential to yield previously unidentified archaeological sites. Literature review also revealed that no Stone Age and LIA sites are shown on a map contained in a historical atlas of this area. This, however, should rather be seen as a lack of research in the area and not as an indication that such features do not occur.

18.2. Burial grounds and Graves

The field survey observed that local people in Ugu area bury their deceased relatives within homesteads. In essence every homestead has at least one grave or more. At the time of the survey, graves occurring within homesteads were not documented because we need to obtain permission to assess and document the graves. The study team concluded that graves mainly occur in built up residential areas. In addition, some unmarked graves may occur within cane fields, these are for people who were removed to make way for the cane fields during the colonial and apartheid eras. Given the sensitivity of graves located within homesteads, we recommend that a walk down survey be conducted should the applicant proceed to apply for mining rights. For the purpose of prospecting, local communities will be requested to declare family graves that may not be marked or occur in isolated places. This will be done during public consultation meetings. A professional archaeologist must be retained to document and map isolated graves and burial grounds that known by local communities. This process can be done with the help of informants from the local community.

It should be noted that burial grounds and gravesites are accorded the highest social significance threshold (see Appendix 3). They have both historical and social significance and are considered sacred. Wherever they exist or not, they may not be tampered with or interfered with without a permit from Amafa aKwaZulu Natal and Research Institute. The possibility of encountering human remains during subsurface earth moving works anywhere on the landscape is ever present. The probability of encountering previously unidentified burial sites is medium to high within the proposed prospecting site, however, should such sites be identified during prospecting, they are still protected by applicable legislations, and they should be protected.

18.3. Public Monuments and Memorials

The study recorded one historical monument (. The site is on the edge of the proposed Prospecting Right Application site on the GPS coordinates 30°17'30.93"S and 30°35'20.33"E. The Historical landmark is on the Amafa aKwaZulu Natal and Research Institute register and is protected in terms of Section 27 of the NHRA. No prospecting activities are allowed within the 100m buffer zone in terms of SAHRA Regulations of 2020. In addition, any prospecting activities in the vicinity of the site must not be done without consulting the Traditional Authority in order to understand and to delineate the site.

18.4. Buildings and Structures

The study recorded several buildings and structures that are likely to be older than 60 years. The buildings were not assessed on the basis that they are occupied and automatically protected from exploration activities in terms of DMRE Regulation. In terms of Section 34 of the NHRA these buildings are not supposed to be altered or demolished without a permit from Amafa aKwaZulu Natal and Research Institute. These buildings can be avoided by providing a 100m buffer zone from any historical building. The proposed 20 boreholes are sparsely located, and it is not likely that any of the prospecting boreholes will fall directly on a building. As such the Prospecting Right Application may be approved without any further investigation and mitigation.

18.5. Impact Statement

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position. The primary impacts are likely to occur during clearance and drilling of boreholes, indirect impacts may occur during movement of prospecting equipment. Any additional excavation for foundations of temporary structures as well as fence line posts will result in the relocation or destruction of all existing surface heritage material (if any are present).

Similarly, the clearing of access roads will impact material that lies buried in the topsoil. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to prospecting. It is important to note that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is very low within the proposed prospecting site. Further, archaeological sites and unmarked graves may be buried beneath the surface or concealed by dense vegetation and may only be exposed during surface clearance. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of the proposed prospecting by means of mitigation measures (see appended Chance Find Procedure). It is the

considered opinion of the author that the chances of recovering significant archaeological materials are low to medium within the Prospecting Right Application site given the destructive nature of cane production. It is estimated that approximately 75% of the Prospecting Right Application is under sugar cane plantation. As such significant archaeological remains might have been destroyed over the past years of cane production and associated infrastructure developments.

19. Socio Economic Conditions

19.1. Population Distribution and Demographics

The Umdoni Local Municipality which covers approximately 994 km², which represents about 21% of the total area of the Ugu District Municipality and is a Category B municipality located within the Ugu District in the KwaZulu-Natal Province. It is the smallest of four municipalities in the district, accounting for just under a quarter of its geographical area. It is made up of 10 wards, most of which are rural areas. The municipality can be divided into three major land uses, being commercial agriculture, traditional authority areas and coastal urban nodes. The coastline stretches approximately 40km. The town of Scottburgh is approximately 50km from the city of Durban and 65km from Port Shepstone.

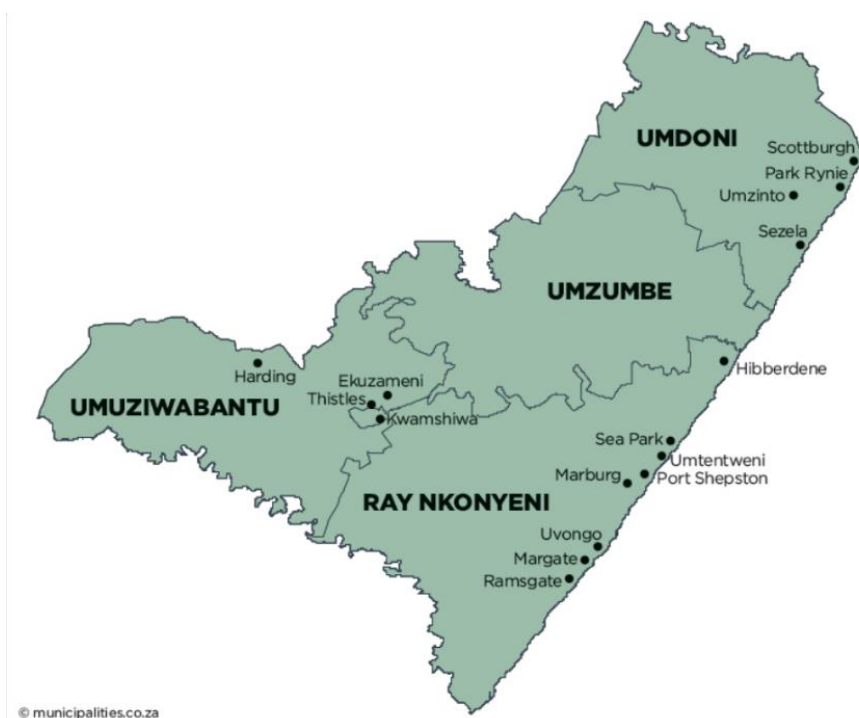


Figure 9: Map represent the location of Umdoni Local Municipality

19.2. Population size

As revealed by the Table below, approximately 11.0 million people resided in KwaZulu-Natal in 2016, of which only about 7% resided in the Ugu District Municipality. The table further reveals that the Umdoni Local Municipality has a population of less than 144 551 people in 2016 and had seen a large increase in annual growth between 2011 and 2016 with a growth rate of 16.6%, when compared to

the growth rates on a national, provincial and district level. This is to be attributed to the re-demarcation of Municipal boundaries in 2016 and the disestablishment of Vulamehlo Local Municipality where Umdoni Municipality inherited the 6 and a half wards from Vulamehlo which brings the total population of the recently demarcated Umdoni Municipality to 144 550 people.

Table 9 Population Distribution per Local Municipality within the Ugu:

Judicial Area	2001 Population	2011 Population	2016 Community survey	Annual Average Growth rate (2011-2016)
South Africa	44 819 778	51 770 560	55 653 651	1.5%
KwaZulu-Natal	9 584 129	10 267 300	11 065 240	1.5%
Ugu DM	704 030	722 484	753 336	0.8%
Umdoni LM	62 375	78 875	144 550	16,6%

When considering the population distribution amongst the four local municipalities within the Ugu District Municipality, it is clear that Ray Nkonyeni Local Municipality is home to more than a third of the population (31%), which is understandable as this local municipality is the economic hub of the Ugu district and includes various vibrant coastal towns regional centres such as Port Shepstone, Hibberdene, Ramsgate, Margate and Port Edward. The Umzumbe Local Municipality contributes 25% to the total population of the Ugu District, followed by Umdoni with a 19% population share. The smallest local municipality in terms of population share within the district is Umziwabantu with (14%). It is however interesting to note that the Umdoni Local Municipality has the second highest population density within the district with approximately 145.4 people per square kilometre.

The table below compares the population distribution and densities for the various local municipalities within the Ugu District.

Table 10: population distribution per local municipality within the Ugu district

Local Municipality	Area (km ²)	Percentage area split	2016 Population	Percentage Population split	Density (pop/km ²)
--------------------	-------------------------	-----------------------	-----------------	-----------------------------	--------------------------------

Umdoni LM	994	21%	144 550	19%	145.4
Umzumbe LM	1221	25%	151 676	20%	124.2
Umuziwabantu LM	1089	23%	108 575	14%	99.7
Ray Nkonyeni LM	1487	31%	348 533	46%	234.3
Ugu District	4791	100%	753336	100%	603.6

19.3. Age and gender profile

It can be noted that Umdoni Local Municipality is a youth dominated Municipality with a substantial number of people being within the youth bracket. With an increasing number of people between the ages 0-4. This means a rising need for Department of Health to help in terms of Clinics, Immunizations, Department of Education needs to assist the municipality with early childhood enrolments into Schools as well as the provision of books and establishment of efficient and effective Early Childhood Centres.

It can also be noted that the age cohort 15-35 has experienced a growth since the 1996 Census; this group represents the driving force behind the economically active population or total labour force in the Umdoni Municipality. This is where all sector Departments are needed to play a role in the creation of job opportunities in order to decrease the dependency ratio. Umdoni Municipality has inherited predominantly Rural wards from the disestablishment of Vulamehlo Municipality and this calls for the Department of Rural Development to get on board with regards to programmes that will alleviate the strain on the municipality with regards to job creation and development of our rural wards. Rural development can aid the rural communities in areas such as hinterland tourism, agricultural development and sustainable farming that will increase jobs and ensure food security for rural communities. Refers on figure 5 below.

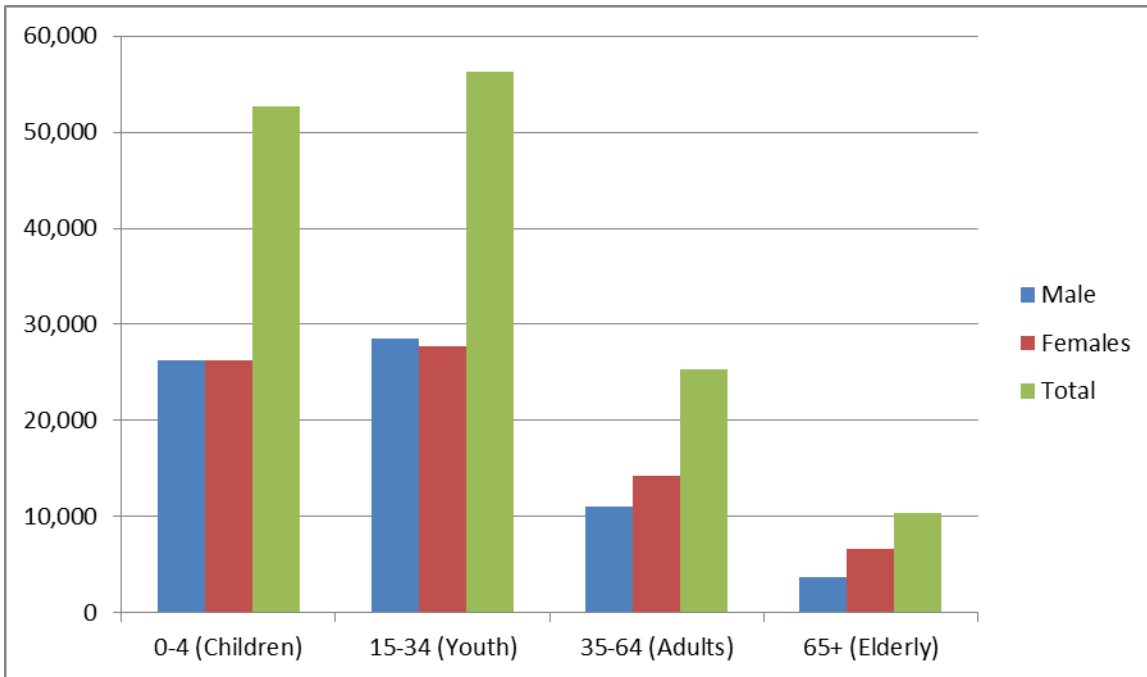


Figure 10: Population distribution per age & gender.

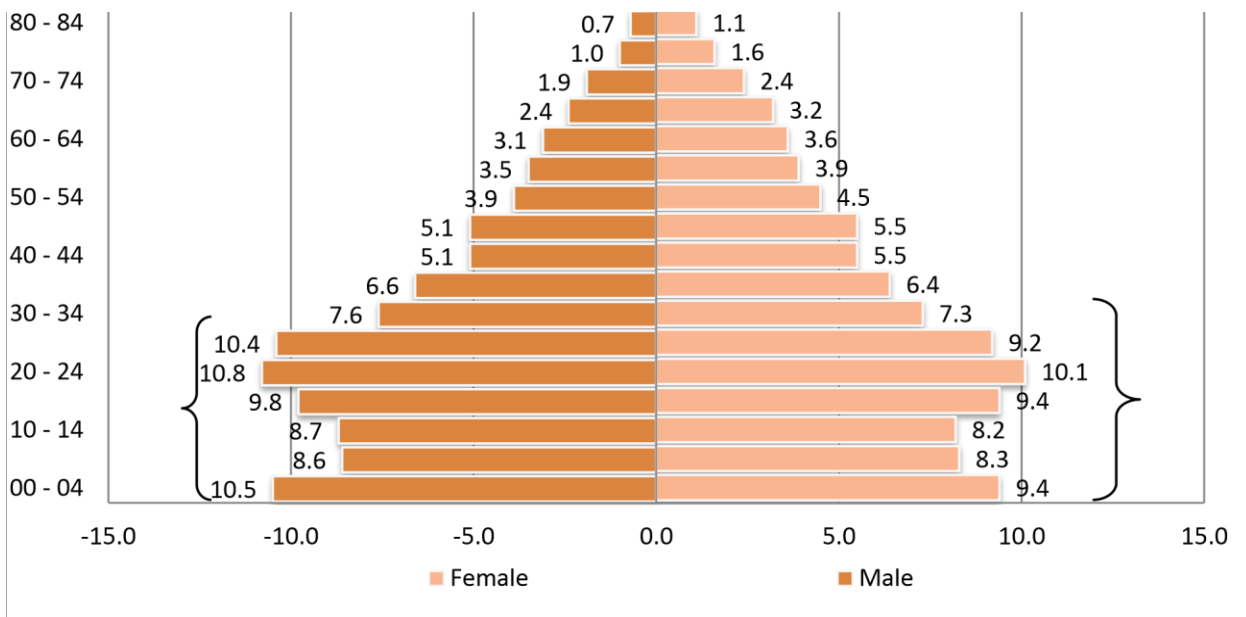


Figure 11: Population distribution per age and gender

19.4. Racial Distribution

The diagram below indicates that the general population of Umdoni has increased since 2001 by 2.35 and indicates the growth rate per race, it can be noted that there has been a substantial decrease in White, Coloured, and Indian persons that reside in Umdoni from 1996 to 2001 by 10.22%, 5.61% and 1.4% and the African population increasing by 28% from 1996 to 2001. However, findings from the 2011 Statistics South Africa census show that there has been a slight increase in the white, Coloured population from 2001 to 2011 by 12.5%, 26.9% and the Indian population still decreasing by 14.8%. However, the absolute figures for these race groups still fall way short of the African group, which comprises well over 84% of the total Umdoni Municipality Population.

Table 11:socio-economic indicators

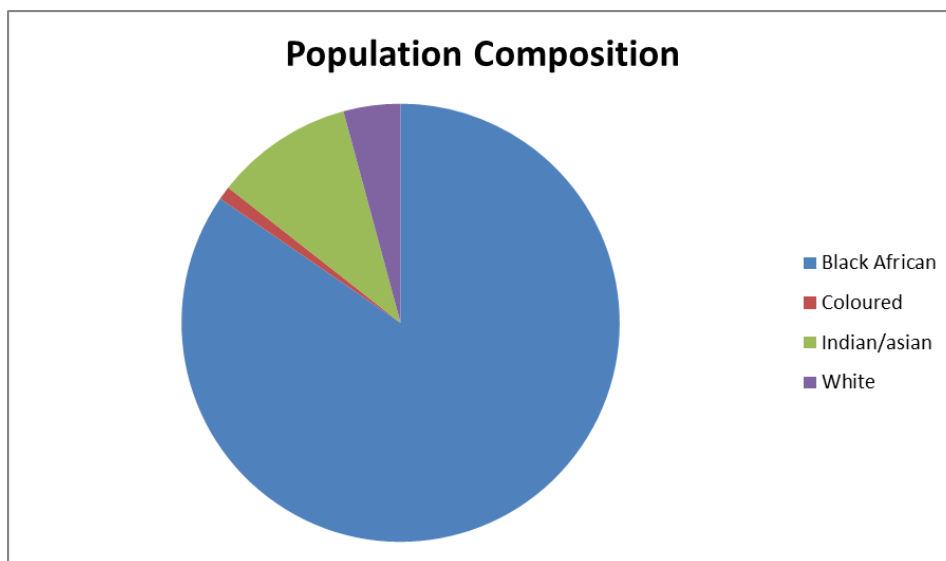


Figure 12 : population composition per race group

Socio-Economic Indicators	1996	2001	2011	Source
	Households and Services			
Average Household Size	4,3	3,7	3,2	stats SA & Dem.Board
Access to Piped Water	32%	37,3%	40,6%	Stats' & Dema. Board
Access to Electricity	31%	66,3%	76,3%	stats SA, Dem. Board
Access to Sanitation	5%	8%	34,2%	stats SA Dem. Board

Tenure Status (% owned)	-	60%	57,3%	stats SA		
	Education Status					
Literacy Rate	-	-	-	Dept. of Education.		
No Schooling	5175	7342	4142	stats SA		
Primary	5964	6868	9370	stats SA		
Teacher: Learner Ratio						
Secondary	9453	11091	29511	Stats SA		
matric	5514	7521	15801	StasSA		
Matric Pass Rate				Dept. Of Edu.		
Completed Higher Education	1794	2942	3748	Stats SA		
	Employment Status					
Unemployment Rate(official)	4784	9810	8337	Stats SA		
Unemployment Rate(Youth)	26%	52%	43.3%	Stats SA, Dem.Board		
Main Occupation Sector	Elementary	Elementary	Elementary	Stats SA		
	Income Status					
Indigent Households (below R800)	11337	11521	11032	stats SA		
Social Grants Recipients	-	31999 (Year 2008)	(Year 2009)	32685 (Year 2009)	(Year	SASSA
Gini Coefficient	0.52	0.60	0.65	Dept. Treasury	of	

The demographic and socio-economic trends within Umdoni municipality indicate a number of changes that need to be considered when looking at longer term interventions. (Umdoni Municipality Draft IDP Review, 2020/2021).

20. Description of the current land uses.

Numerous land uses were observed in the project area, and these include farming, grazing of livestock, roads, residential purpose throughout the project. The key agricultural activities taking place in the project area include sugar cane. There was a high level of mono-specificity of plant species within the project area which includes sugar cane. The project's boundaries coincide with the natural reserve (Vernon Nature Reserve).

20.1. Description of specific environmental features and infrastructure on the site.

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

- Farming fields and infrastructure
- Vegetation (Sugar Cane)
- Hiking Trails
- River (Umzinto)
- Vernon Crookes Nature Reserve



Figure 13: Farming fields and infrastructure on site were observed.



Figure 14: Hiking trails were discovered during site assessment.



Figure 15: Umzinto River was discovered on site.



Figure 16: An overview of vegetation and sugar cane harvest

20.2. Environmental and current land use map

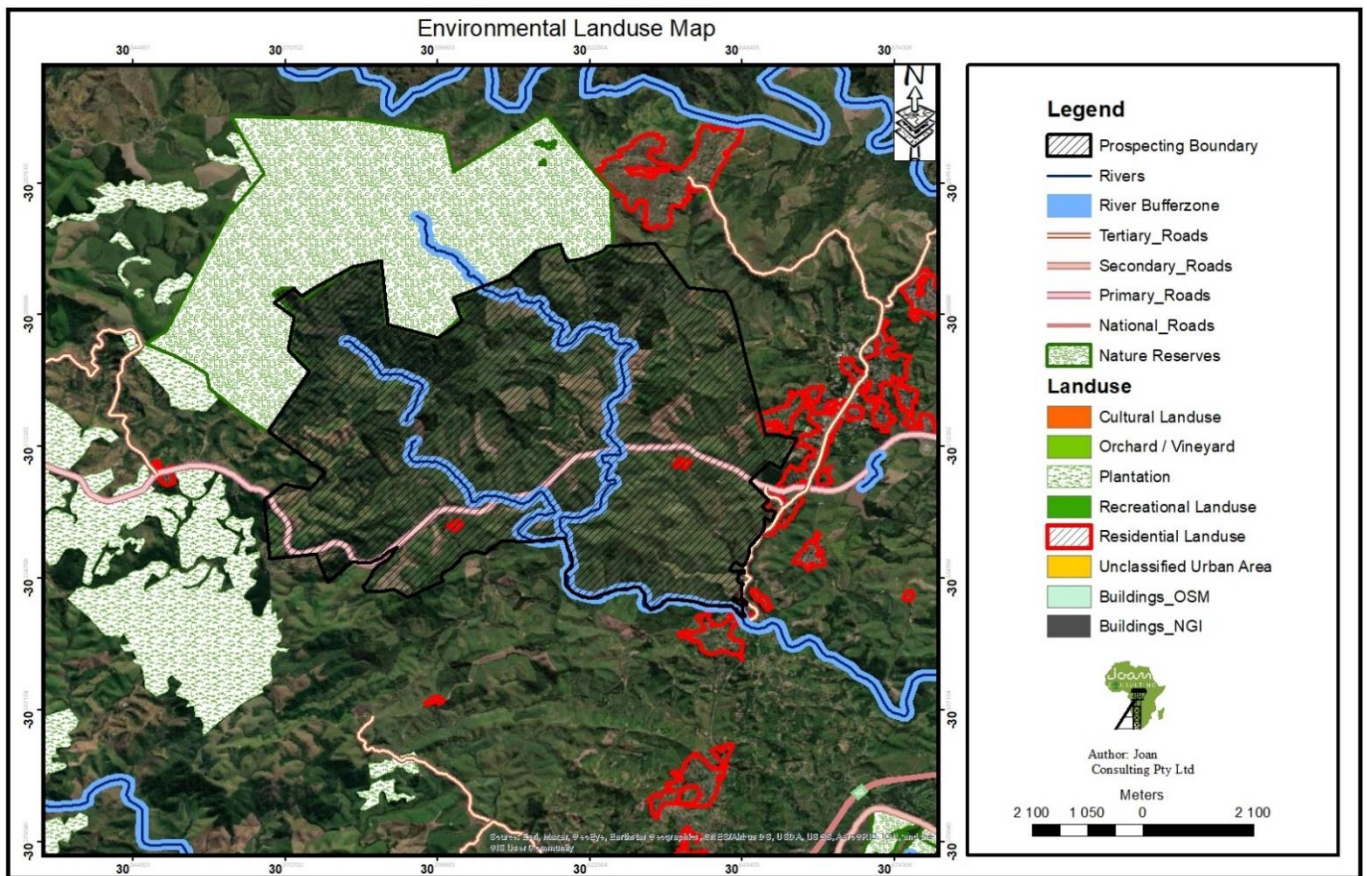


Figure 17: Environmental Land use map for the proposed Site

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

This section provides the detailed methodology used for the assessment of the significance of potential environmental impacts in the study. This methodology allows for the identified potential impacts to be analysed in a systematic manner, with significance rating (from insignificant to very high) assigned to each potential impact. The significance of an impact is defined as a combination of the consequence of the impact occurring and the probability that the impact will occur. The criteria used to determine impact consequence include extent, intensity and duration of the impact and are presented below.

Table 12: Methodology used in Determining and Ranking the Nature, Significance, Consequences, Extent, Duration and Probability of Potential Environmental Impacts and Risks

Nature of the impact (N)		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
Magnitude(M)		
Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).

Extent (E)		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
Duration (D)		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.
Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.
Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
Probability of occurrence (P)		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

Once the impact criteria have been ranked for each impact, the significance of the impacts will be calculated using the following formula:

$$\text{Significance Points (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) \times \text{Probability}$$

The significance of the ecological impact is therefore calculated by multiplying the severity rating with the probability rating. The maximum value that can be reached through this impact evaluation process is 100 SP (points). The significance for each impact is rated as High (SP≥60), Medium (SP = 31-60) and Low (SP<30) significance as shown in the below.

Table 13: Criteria for Rating of Classified Impacts

Significance of predicted NEGATIVE impacts		
Low	0-30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31-60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61-100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of predicted POSITIVE impacts		
Low	0-30	Where the impact will have a relatively small positive effect on the environment.
Medium	31-60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61-100	Where the positive impact will improve the environment relative to baseline conditions.

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

Table 14: Positive and Negative Impacts of the Project

Positive Impacts from the proposed activity	Negative Impacts from the proposed activity
Discovery of new resources: This project will assist in expanding information of available resources within the area.	Noise: through the movement of vehicles and operation of machineries.
Local Market Boost: Contractors on site will rely on local market for materials, beverages, and food	Removal of vegetation: for the purpose of the exploration activities
Good environmental management: All potential impacts that will be	Habitat destruction by removing the vegetation

<p>generated from the development of the project will be managed through the implementation of the EMP</p>	
	<p>Change in land capability: exploration activities will not have so much impact on the land capability; however, this impact cannot be ruled out completely.</p>
	<p>Generation of Dust from drilling, trenching and use of the dusty access road</p>
	<p>Groundwater Contamination from industrial liquids leakage from the exploration equipment and vehicles.</p>
	<p>Waste generation-solid waste such as litter will be generated and may be deposited in and around the site if not properly managed.</p>

23. The possible mitigation measures that could be applied and the level of risk.

Table 15: The possible mitigation measures that could be applied and the level of risk:

Impacts and Mitigation measures relating to the proposed project during Planning Phase														
Activity	Impact	Aspect	Nature	Magnitude	Extent	Duration	Probability	Significance before mitigation	Mitigation measures	Magnitude	Extent	Duration	Probability	Significance after mitigation
Application process	Project Delays caused by Potential friction with I&APs and Landowners	Planning	-	4	1	1	5	30	<ul style="list-style-type: none"> ❖ Engage with affected Landowners Prior Commencement of the project. ❖ Undertake effective public participation Process 	4	1	1	2	12
Application process	Disputes and disagreements between landowners and the applicant	Planning and Social aspect	-	6	1	1	4	32	<ul style="list-style-type: none"> ❖ The applicant's legal team must draft a land user agreement which must be agreed upon by the landowners and the applicant, and it must include all site-specific condition such as. ❖ Operational hours ❖ Access to the farm ❖ And others added by the landowner 	6	1	1	2	16

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
CONSTRUCTION PHASE														
Vegetation	Clearing of vegetation and movement of vehicles for site establishment	Removal of Vegetation	- (ve)	6	2	4	5	60	<ul style="list-style-type: none"> ❖ Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas. (Operation footprint) ❖ No disturbance or removal of protected plant species in terms of the Nation Forest Act unless a license to do so is has been granted and removal is undertaken by a specialist ❖ Prohibit the collection of plant material for medicinal purposes and fire wood ❖ Where possible, place infrastructures in places that are already disturbed or degraded to avoid further removal of vegetation and increasing the footprint of the activity. 	2	1	2	5	25

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
Vegetation	Clearing of vegetation and movement of vehicles for site establishment	Destruction of protected plant species	- (ve)	4	1	4	5	45	<ul style="list-style-type: none"> ❖ Supervision by an ecologist to ensure success of the rescue operation ❖ Place drilling holes away from any red listed and/or protected plant species ❖ Use already available farm roads to avoid trampling red listed plant species ❖ 1 KM buffer zone from Vernon Crookes nature reserve to any prospecting activities 	4	1	4	3	27
Vegetation	Clearing of vegetation and movement of vehicles for site establishment	Disturbance to animals on site	- (ve)	6	2	3	4	44	<ul style="list-style-type: none"> ❖ Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees. ❖ Dogs or other pets are not allowed to the worksite as they are threats to the natural wild animal. ❖ A low-speed limit of 30km/h must be enforced on site to reduce wild animal-vehicle collisions. 	6	2	3	2	22

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									<ul style="list-style-type: none"> ❖ No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site. ❖ Severe contractual fines must be imposed and immediate dismissal on any contract employee who is found attempting to snare or otherwise harms remaining faunal species. ❖ Hunting weapons are prohibited on site. ❖ Contract employees must be educated about the value of wild animals and the importance of their conservation. ❖ The ECO must conduct regular site inspections of removing any snares or traps that have been erected. ❖ Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage. 					

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
Vegetation	Clearing of vegetation and movement of vehicles for site establishment	Increased soil erosion, increase in silt loads and sedimentation	- (ve)	4	2	4	5	50	<ul style="list-style-type: none"> ❖ Following prospecting, rehabilitation of disturbed areas is required. ❖ Avoid areas with sensitive soils, steep slopes during rain or windy season. ❖ Ensure that roads are not paved but well maintained (as gravel) to reduce the speed of water by promoting infiltration 	2	4	4	3	30
Vegetation	Clearing of vegetation and movement of vehicles for site establishment	Establishment and spread of declared weeds	- (ve)	6	1	4	5	55	<ul style="list-style-type: none"> ❖ The best mitigation measure for alien and invasive species is the early detection and eradication of these species which will be ensured with the use of a monitoring programme. ❖ An alien invasive management programme should be developed and implemented in order to control alien invasive species 	6	1	4	3	33
Noise Air Quality	Clearing of vegetation and movement	Dust and Noise Generation on game	- (ve)	8	3	2	4	52	<ul style="list-style-type: none"> ❖ Drill rig and Cars must be services regularly to reduce noise levels. ❖ Work during the day time only to minimise disruption of neighbours and animal life. 	6	1	2	2	18

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	of vehicles for site establishment	Lodges and quest house:							<p>Operational hours should be kept between 08H00- 17H00 in summer and 08H00- 16H00 in winter.</p> <ul style="list-style-type: none"> ❖ Use equipment or machinery that complies with the manufacture's specifications for acceptable noise level ❖ Speed limit must be kept 30km/h and below. ❖ Best access route that will not generate dust and noise to Game Lodges, Lodges & Guest Houses should be discussed with the landowner prior any construction activities may commence on site. ❖ 50km/h driving speed and etc should be limited; ❖ No wild animal may under any circumstance be hunted, snared, captured, injured or killed 					
Socio-Economic	Clearing of vegetation and	Negatively impacting Settlement	- (ve)	8	2	2	5	60	<ul style="list-style-type: none"> ❖ The applicant must consult with the affected parties on which times are favourable for 	4	1	1	3	18

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	movement of vehicles for site establishment	and residential on their livelihoods							them before undertaking activities which could negatively impact on their livelihoods ❖ The applicant must ensure that there is an insurance policy in place readily available to compensate for any loss on the farm caused by the proposed activities;					
Soil	Clearing of vegetation and movement of vehicles for site establishment	Soil contamination by oil spills from vehicles and machinery	- (ve)	6	2	2	3	30	<ul style="list-style-type: none"> ❖ Any equipment that is leaking must be temporarily decommissioned and removed from the site, to a surface which is impermeable and has a waste water collection system. ❖ Spill kits will be provided for onsite spill cleaning. Clean any oil spillages on site within 24 hours ❖ Make all staff aware of the need to prevent spills, leaks and disposal of contaminated water onto the ground and ensure that they are adequately trained to take corrective action should an accidental spill occur. ❖ Provide drip trays for all parked vehicles. 	2	1	2	2	10

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									❖ Dispose contaminated soils at a permitted site at any registered hazardous waste disposal site;					
Soil	Clearing of vegetation and movement of vehicles for site establishment	Habitat destruction by vegetation removal	- (ve)	6	2	4	5	60	<ul style="list-style-type: none"> ❖ Areas to be cleared must be clearly marked in the field to eliminate unnecessary clearing. Vegetation clearing should be restricted within the demarcated areas (operation footprint) ❖ A field survey must be undertaken before reclamation activities commence on site to demarcate the ecologically sensitive area near the stream and ensure that disruption is caused in the sensitive area. ❖ No listed and/or protected plant species are to be destroyed. The assistance of an ecologist is required to identify such species on site. ❖ Use already available farm roads and trails to avoid trampling red listed plant species. 	4	2	2	3	24

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									<ul style="list-style-type: none"> ❖ Do not disturb nests, breeding sites of animals. ❖ Do not attempt to kill or capture snakes unless directly threatening the safety of employees. ❖ Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage. ❖ Keep to the speed limit of 40 km/h on all roads running through and accessing the site to avoid driving over any fauna 					
		Soil erosion as the results of exposed surface	-(ve)	6	3	4	3	39	<ul style="list-style-type: none"> ❖ Sensitive landscapes must be marked as NO-GO areas. ❖ Immediately rehabilitate areas that have been stripped of vegetation by rehabilitating. ❖ Restrict impacts to prospecting activities footprint. 	4	2	2	2	16

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									<ul style="list-style-type: none"> ❖ Have temporal erosion control measures to protect the disturbed soils and topsoil until adequate vegetation has been established. ❖ Topsoil should be retained and replaced where possible as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem functioning. Topsoil stockpiles should be covered/protected to prevent erosion by wind and/or water 					
Noise	Clearing of vegetation and movement of vehicles for site establishment	<ul style="list-style-type: none"> Disruption of the neighbouring landowners Noise will be generated from 	-(ve)	2	2	1	5	25	<ul style="list-style-type: none"> ❖ Work during the daytime only to minimise disruption of neighbours and animal life. ❖ Service equipment, machineries, and vehicles regularly to minimise noise. Where necessary, if possible, install silencers on equipment/machinery. ❖ Provide ear plugs to the employees and ensure they wear them for the protection of their ears. 	2	1	1	5	20

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
		the operation of drilling Rig and vehicles							❖ Use equipment or machinery that complies with the manufacture's specifications for acceptable noise level					
Soil and Groundwater	Clearing of vegetation and movement of vehicles for site establishment	Ground & surface water contamination and soil contamination from hydrocarbon spillages from machinery or vehicles.	- (ve)	6	3	3	3	36	<ul style="list-style-type: none"> ❖ Vehicles must be restricted to travel on the designated roadways at the recommended times to avoid contamination. ❖ Topsoil should be retained and replaced where possible, this will help reduce soil contamination as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem functioning. Topsoil stockpiles should be covered/protected to prevent erosion by wind and/or water. ❖ Place drip trays under parked vehicles and machinery to avoid soil contamination by hydrocarbon leakage. 	4	2	2	2	16

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									❖ Dispose contaminated soils at a permitted site to any registered hazardous waste disposal site;					
Vegetation (Weeds)	Clearing of vegetation and movement of vehicles for site establishment	The proposed activities may introduce or encourage establishment of alien vegetation in the area	- (ve)	6	2	2	3	30	<ul style="list-style-type: none"> ❖ Implement early detection and eradication of the alien invasive species through a monitoring programme. ❖ An alien invasive management programme must be implemented in order to control alien invasive species. All alien invasive tree & weed species growing in the areas disturbed by prospecting activities must be removed from the cleared area, and continuous monitoring must be conducted for three consecutive years after closure of each site. 	4	1	2	2	14
Land Capability	Clearing of vegetation and movement	Land degradation and land use	- (ve)	8	2	3	3	39	<ul style="list-style-type: none"> ❖ Place infrastructures in places that are already disturbed or degraded to avoid increasing the footprint of the activity. 	4	1	2	3	21

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	of vehicles for site establishment	change due to potential topsoil/fertile soil loss							<ul style="list-style-type: none"> ❖ Landowners must be consulted on where the different infrastructures can be placed. ❖ Avoid as far as possible areas of important farmland activities, by selecting areas with a low veld condition and diversity. ❖ Topsoil and sub soil must be kept separately throughout drilling activities and rehabilitation. ❖ Carry out concurrent rehabilitation throughout the life of the project to encourage quick recovery of the project area. ❖ Where soil nutrients and/or fertility has been lost, the soil must be fertilised to recover cultivation capacity 					
Fauna	Clearing of vegetation and movement of vehicles	<ul style="list-style-type: none"> • Loss of faunal diversity may occur 	-(ve)	6	2	2	4	32	<ul style="list-style-type: none"> ❖ Work during daytime to minimise the disruption animal life. ❖ Do not disturb nests, breeding sites of young animals unnecessarily. 	4	1	2	2	14

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
	for site establishment	because of faunal dispersion. • Disturbance of the area biodiversity ecosystem by operational vehicles							<ul style="list-style-type: none"> ❖ Do not attempt to kill or capture snakes unless directly threatening the safety of employees. ❖ Vehicles must be restricted to travel on the designated roadways to minimize the ecological footprint of the proposed development. ❖ Keep to the speed limit of 40 km/h on all roads running through and accessing the site to avoid driving over any fauna 					
Safety and security	Clearing of vegetation and movement of vehicles for site	• Personnel injuries from safety hazards on site.	- (ve)	6	2	2	4	40	<ul style="list-style-type: none"> ❖ Ensure that workers and any persons accessing the site wear the correct PPE at all times. ❖ Compile a health and safety risk assessment of the site to identify all safety related hazards and risks. 	2	1	1	2	08

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	establishment	<ul style="list-style-type: none"> • Accidents resulted from moving vehicles; • Exposure to snakes and other wild animals on site. 							❖ Educate all employees working on site, in the form of inductions/training or toolbox talks of the health and safety risks on site					
Safety and Security	Clearing of vegetation and movement of vehicles for site establishment	Working on site can pose safety hazards to land owners and people living in the	- (ve)	6	2	2	3	30	<ul style="list-style-type: none"> ❖ Notify the local forum of the Prospecting team to before accessing the site. ❖ People accessing the site must be known before accessing the site though sending the pictures of themselves. ❖ Registration numbers of the vehicles (Make of the vehicles) on site must be known before accessing site. 	4	2	2	2	16

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		farms causing <ul style="list-style-type: none"> • Fear of lives • Increased Criminal activities. 							❖ All contractors appointed by the applicant must ensure that farm gates remain locked at times when entering and exiting the farms.					
Social	Clearing of vegetation and movement of vehicles for site establishment	Impacts on livelihoods and loss of income	- (ve)	8	2	2	5	60	<ul style="list-style-type: none"> ❖ The applicant must consult with the affected parties on which times are favourable for them before undertaking the activities which could negatively impact their livelihood ❖ The applicant must ensure that there is an insurance policy in place readily available to compensate for any loss on 	4	1	1	3	18

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
									the farm caused by the proposed activities;					
Heritage Resources	Site establishment: ablution and temporal admin facilities	Impact on Heritage Resources	- (ve)	6	1	2	3	27	<ul style="list-style-type: none"> ❖ Should artefacts or archaeological items or sites be observed, activity on the area must cease immediately, area marked off and a specialist consulted prior to any further activity ❖ Keep a 50m distance from graves if encountered. 	4	1	1	1	6
Cultural heritage	Clearing of vegetation and movement of vehicles for site establishment	Disturbance of graves	- (ve)	6	5	4	4	60	<ul style="list-style-type: none"> ❖ Maintain 25m buffer zones for all burial sites ❖ Burial sites must be mapped ❖ Consult Landowners and farm workers to identify burial sites before prospecting 	6	2	4	3	4
OPERATIONAL PHASE – DRILLING														

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Vegetation removal	- (ve)	6	1	2	5	45	<ul style="list-style-type: none"> ❖ Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas. (Operation footprint) ❖ Sensitive or endangered plant species must be marked avoided. ❖ Prohibit the collection of plant material for medicinal purposes and fire wood ❖ Where possible, place infrastructures in places that are already disturbed or degraded to avoid further removal of vegetation and increasing the footprint of the activity. ❖ 	4	1	1	5	30
Vegetation	Borehole drilling, construction of water sump and	Removal of the natural vegetation	- (ve)	4	1	4	5	45	<ul style="list-style-type: none"> ❖ Due to the sensitivity of the area, it is advised that areas designated for vegetation clearing should be identified and visibly marked off and also approved as part of final drilling map 	4	1	4	3	27

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	movement of vehicles								<ul style="list-style-type: none"> ❖ Avoid drilling on the falls area as it provides habitat for Vultures as well as Blue Cranes. ❖ Use already available farm roads and avoid creating new ones ❖ Vegetation clearing areas should be kept to a minimum and restricted to the proposed drilling sites. ❖ Exposed areas should be rehabilitated with indigenous plants to the project area as soon as construction is finished. ❖ 1 KM buffer zone from Vernon Crookes nature reserve to any prospecting activities 					
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Disturbance to animals on site	- (ve)	6	2	3	4	44	<ul style="list-style-type: none"> ❖ Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees. ❖ Dogs or other pets are not allowed to the worksite as they are threats to the natural wild animal 	6	2	3	2	22

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									<ul style="list-style-type: none"> ❖ A low speed of 30km/h limit must be enforced on site to reduce wild animal-vehicle collisions ❖ No animals must be intentionally killed or destroyed and poaching and hunting should not be permitted on the site. ❖ Severe contractual fines must be imposed and immediate dismissal on any contract employee who is found attempting to snare or otherwise harms remaining faunal species. ❖ Hunting weapons are prohibited on site. ❖ Contract employees must be educated about the value of wild animals and the importance of their conservation. ❖ The ECO must conduct regular site inspections of removing any snares or traps that have been erected. ❖ Employees and contractors should be made aware of the presence of, and rules 					

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									regarding, flora and fauna through suitable induction training and on-site signage.					
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Increased soil erosion, increase in silt loads and sedimentation	- (ve)	4	2	4	5	50	<ul style="list-style-type: none"> ❖ Following prospecting, rehabilitation of disturbed areas is required ❖ Avoid areas with sensitive soils, steep slopes during rain or windy season. ❖ Ensure that roads are not paved but well maintained (as gravel) to reduce the speed of water by promoting infiltration 	2	4	4	3	30
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Establishment and spread of declared weeds	- (ve)	6	1	4	5	55	<ul style="list-style-type: none"> ❖ The best mitigation measure for alien and invasive species is the early detection and eradication of these species which will be ensured with the use of a monitoring programme. ❖ An alien invasive management programme should be developed and implemented in order to control alien invasive species 	6	1	4	3	33

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Noise	Borehole drilling, construction of water sump and movement of vehicles	Noise will be generated due to the operation of drilling machinery and vehicle as well as people's movement around the site	- (ve)	6	2	1	5	45	<ul style="list-style-type: none"> ❖ All equipment to be adequately maintained and kept in good working order to reduce noise. ❖ Workers and personnel will wear hearing protection (ear plugs) when required. ❖ Use equipment or machinery that complies with the manufacture's specifications acceptable noise levels ❖ All vehicles and activities will only operate during daytime hours ❖ Employees loitering around the site is prohibited. 	2	1	1	5	20
Noise Air Quality	Borehole drilling, construction of water sump and movement of vehicles	Dust and Noise Generation on game Lodges and quest house:	- (ve)	8	3	2	4	52	<ul style="list-style-type: none"> ❖ Drill rig and Cars must be services regularly to reduce noise levels. ❖ Work during the day time only to minimise disruption of neighbours and animal life. Operational hours should be kept between 08H00 - 17H00 in summer and 08H00- 16H00 in winter. 	6	1	2	2	18

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									<ul style="list-style-type: none"> ❖ Use equipment or machinery that complies with the manufacture's specifications for acceptable noise level. ❖ Best access route that will not generate dust and noise to Game Lodges, Lodges & Guest Houses must be discussed with the landowner prior any construction activities may commence on site. 					
Soil	Removal of soil during drilling.	Exposure of soils stripped of vegetation during the construction phase and operational phase (drilling) may lead to soil erosion. This will result in	- (ve)	8	2	2	4	48	<ul style="list-style-type: none"> • Have temporal erosion control measures to protect the disturbed soils and topsoil until adequate vegetation has established • Undertake concurrent rehabilitation to restrict the exposure period of soils exposed and vulnerable to erosion • Vehicles should be restricted to travel on the designated roadways at the recommended speed • Topsoil must be stockpiled properly to retain fertility of the soil post closure 	4	1	2	4	28

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		loss of soil nutrients.							<ul style="list-style-type: none"> Topsoil stockpiles must be covered/protected to prevent erosion by wind and/or water 					
Health and safety	Borehole drilling, construction of water sump and movement of vehicles	Increased risk to public and worker safety.	- (ve)	8	1	2	4	44	<ul style="list-style-type: none"> Comply with all the relevant requirements of Mine Health and Safety Act (Act 29 of 1996) 	4	1	2	2	14
Safety and Security	Borehole drilling, construction of water sump and movement of vehicles	Working on site can pose safety hazards to land owners and people living in the farms.	- (ve)	6	2	2	3	30	<ul style="list-style-type: none"> Notify the local forum of the Prospecting team to before accessing the site. People accessing the site must be known before accessing the site though sending the pictures of themselves. Registration numbers of the vehicles (Make of the vehicles) on site must be known before accessing site. 	4	2	2	2	16

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		<ul style="list-style-type: none"> • Fear of farm attacks due to strangers in their area • Increased Criminal activities. 							<ul style="list-style-type: none"> ❖ All contractors appointed by the applicant must ensure that farm gates remain locked at times when entering and exiting the farms. 					
Soil, Land Use and Land Capability	Borehole drilling, construction of water sump and movement of vehicles	Soil contamination from hydrocarbon spills	- (ve)	4	1	1	3	18	<ul style="list-style-type: none"> ❖ Clean all hydrocarbon spills from machinery immediately, and ❖ Dispose contaminated soils at a permitted at any registered hazardous waste disposal site; ❖ Drip trays are to be watertight, and must be emptied regularly and before rain events. ❖ The contents of drip trays are to be treated as hazardous waste. ❖ Only emergency and essential repairs of vehicles and equipment may take place on site at the discretion of the terms and conditions of the land use agreement in 	4	1	1	2	12

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									<p>place, agreed upon the landowner and the applicant.</p> <ul style="list-style-type: none"> ❖ No vehicles may be serviced of site. 					
Soil, Land Use and Land Capability	Borehole drilling, construction of water sump and movement of vehicles	Change in land capability due to topsoil loss,	- (ve)	8	2	3	4	52	<ul style="list-style-type: none"> ❖ Place infrastructures in places that are already disturbed or degraded to avoid increasing the footprint of the activity ❖ Landowners must be consulted on where the different infrastructures can be placed. ❖ Avoid as far as possible areas of important farm land activities, by selecting areas with a low veld condition and diversity ❖ Topsoil and sub soil must be kept separately throughout prospecting activities and rehabilitation ❖ Carry out concurrent rehabilitation throughout the life of the project to encourage quick recovery of the project area 	4	1	2	3	21

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									❖ Where soil nutrients and/or fertility has been lost, the soil should be fertilised to recover cultivation capacity					
Soil, Land Use and Land Capability	Borehole drilling, construction of water sump and movement of vehicles	Soil Compaction	- (ve)	6	1	2	3	27	<ul style="list-style-type: none"> ❖ Avoid creating many access routes and truck tracks; ❖ Keep the speed limit to 30km/h or minimum to reduce the tire contractions on the soil 	4	1	2	2	14
Soil and Groundwater	Borehole drilling, construction of water sump and movement of vehicles	Contamination of soil and underground water by spills from mobile ablution facilities and oil from drill rig	- (ve)	6	2	2	4	40	<ul style="list-style-type: none"> ❖ Vehicles and drill equipment must be regularly serviced and maintained. ❖ Refuelling of vehicles and equipment must be done with care to minimise the chance of spillages; ❖ Dip trays will be placed under parked vehicles and machinery ❖ A spill kit will be available on each site where operation activities are in progress; and 	2	1	1	3	12

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									❖ Any spillages must be cleaned up immediately to prevent further contamination.					
Ground water	Borehole drilling, construction of water sump and movement of vehicles	Material used for backfilling boreholes may leach pollutants that will result in the pollution of the surrounding groundwater	- (ve)	6	2	2	4	40	❖ 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.	2	1	1	3	12
Ground water	Borehole drilling, construction of water sump and	Borehole water level reduction	- (ve)	6	1	1	3	24	❖ Water quality monitoring must be conducted quarterly during the operational phase of drilling activities; ❖ The applicant must monitor and keep records of water levels prior drilling	4	1	1	2	12

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	movement of vehicles								activities commences, and water levels must be monitored monthly					
Ground water	Borehole drilling, construction of water sump and movement of vehicles	Destruction of buildings and infrastructures other structures	- (ve)	6	1	1	4	32	❖ Drilling activities should be located 150m away from any building structure.	6	1	1	2	16
Waste Management	Waste generation and storage	Solid waste such as debris and litter may be generated and deposited into the site. This could potentially attract	- (ve)	8	2	3	5	65	<ul style="list-style-type: none"> ❖ Littering must be prohibited, and all waste generated from the site must be cleared. ❖ A 'no waste dumping' sign must also be placed on site. ❖ Waste generated by workers must be collected and disposed of timeously at the nearest registered landfill. ❖ Store waste in labelled containers, indicating clearly whether the waste is 	4	1	1	3	18

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		nuisance and affect the natural scenery/aesthetic quality of the site.							<p>hazardous or non-hazardous (general waste).</p> <ul style="list-style-type: none"> ❖ Burning of waste material is not be permitted. ❖ Hazardous waste must be cleaned up using absorbent material provided in spill kits on site and must be disposed of accordingly at a hazardous waste landfill. 					
Fire control	Borehole drilling, construction of water sump and movement of vehicles	Increase veld fires potential	- (ve)	4	1	1	2	12	<ul style="list-style-type: none"> ❖ Vegetation around proposed site must be kept short to create a fire management zone. ❖ Open fire is prohibited on the site. ❖ No burning cigarettes or matches may be thrown down within exploration area. ❖ Rubbish or vegetation may under no circumstances be burnt ❖ Training of staff will include awareness regarding the rules of the site 	4	1	1	1	6

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Surface water	Borehole drilling, construction of water sump and movement of vehicles	Surface water Pollution through oil spills	- (ve)	6	1	2	3	27	<ul style="list-style-type: none"> ❖ Vehicles and equipment must be regularly serviced and maintained. ❖ Refuelling of vehicles and equipment will be done with care to minimise the chance of spillages; ❖ Drip trays must be placed under parked vehicles and machinery 	4	1	1	2	12
Surface water	Borehole drilling, construction of water sump and movement of vehicles	Increased sedimentation, surface runoff and Soil Erosion	- (ve)	4	1	2	2	14	<ul style="list-style-type: none"> ❖ Limit the development footprint to reduce high-sediment runoff; ❖ Avoid clearing the site during the rainy seasons ❖ Rehabilitate the area by re-using stockpiled soil within as short a period of time. 	4	1	1	2	12
Heritage Resources	Borehole drilling, construction of water sump and	Discovery of graves and other heritage resources	- (ve)	6	1	2	3	27	<ul style="list-style-type: none"> ❖ Should artefacts or archaeological items be observed, activity on the specific site should cease immediately, the area marked off and a specialist consulted prior to any further activity 	4	1	1	1	6

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	movement of vehicles								❖ Keep 50m distance from graves and demarcate them as no-go areas.					
Air Quality	Borehole drilling, construction of water sump and movement of vehicles	During operation, activities may result in dust generation and the release of particulates into the area. Potential dust generation activities may include drilling, movement of vehicles and topsoil clearing	- (ve)	6	3	2	5	55	<ul style="list-style-type: none"> ❖ Best access route that will not generate dust and noise to Game Lodges, Lodges & Guest Houses should be discussed with the landowner prior any construction activities may commence on site ❖ Limit the number of vehicles driving on and offsite ❖ Topsoil stockpiles or soil heaps must be watered to reduce dust emission or place protective nets over the stockpile ❖ Keep to the speed limit of 40 km/h on all roads running through and accessing the site ❖ Minimize the extent of cleared vegetation and exposed soil. Where possible, place protective nets over exposed soil. 	2	2	2	2	12

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Fauna	Borehole drilling, construction of water sump and movement of vehicles	<ul style="list-style-type: none"> • Depletion of wild animals • Hunting and Killing of wild Animals 	- (ve)	10	3	2	4	60	<ul style="list-style-type: none"> ❖ The rehabilitation of the disturbed areas must be conducted such that the rehabilitated areas will encourage the migration of animals back into the rehabilitated areas. ❖ Poaching of wild animals and livestock is prohibited. 	4	3	2	3	27
Fauna	Borehole drilling, construction of water sump and movement of vehicles	Migration of animal life due to disturbance	- (ve)	8	3	2	4	52	<ul style="list-style-type: none"> ❖ Sites will be operated according to the approved prospecting works programme ❖ As much as possible sites with degraded environment will be used for the drilling purposes. ❖ Poaching is prohibited at the prospecting site. 	6	3	2	4	45
Visual Impact	Borehole drilling, construction of water sump and	Visual Impact on the farm	- (ve)	6	1	1	5	35	<ul style="list-style-type: none"> ❖ 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. 	6	1	1	3	21

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	movement of vehicles													
Socio-Economic	Clearing of vegetation and movement of vehicles for site establishment	Settlement and residential area. Negatively impacting on their livelihoods	- (ve)	8	2	2	5	60	<ul style="list-style-type: none"> ❖ The applicant must consult with the affected parties on which times are favourable for them before undertaking activities which could negatively impact on their livelihoods ❖ The applicant must ensure that there is an insurance policy in place readily available to compensate for any loss on the farm caused by the proposed activities; 	4	1	1	3	18
Socio-Economic	Borehole drilling, construction of water sump and movement of vehicles	Fear of Farm attacks	- (ve)	6	3	2	4	44	<ul style="list-style-type: none"> ❖ Notify the local farmer's forum and affected forums); ❖ Comply with all the local safety requirements; ❖ All contractors appointed by the applicant must ensure that farm gates remain locked at times when entering and exiting the farms. 	2	1	1	1	04

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Socio-Economic	Borehole drilling, construction of water sump and movement of vehicles	Safety and livelihood impact on the landowners and occupiers.	- (ve)	6	1	1	4	32	<ul style="list-style-type: none"> ❖ Land owners must be informed on the type of machinery and equipment to be used during drilling phase of the project. ❖ Lighting must be conducted in manner that will reduce the impacts on visual aspects at night times 	6	1	1	2	16
Socio-Economic	Borehole drilling, construction of water sump and movement of vehicles	Social, Health & Safety Aspect	- (ve)	6	1	1	4	32	<ul style="list-style-type: none"> ❖ Proper protective equipment must be allocated to all personnel working with high-risk equipment (drill rig) ❖ Tool box talk must be conducted to address the risk associated with the proposed project. ❖ The applicant must ensure that the insurance policy must also cover for any injuries on site. 	4	1	1	2	12
Socio-Economic	Borehole drilling, construction of water	Safety and Security.	+ Ve	6	1	1	5	35	<ul style="list-style-type: none"> ❖ Ensure that safety measures in the EMPR are implemented to prevent the impacts on the property owners. 	6	2	2	5	50

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	ump and movement of vehicles								<ul style="list-style-type: none"> ❖ Negotiations on compensation and accessing the site to be undertaken before the drilling programme can commence. ❖ 					
DECOMMISSIONING AND CLOSURE PHASE														
Rehabilitation	Rehabilitating of the disturbed and contaminated areas	<ul style="list-style-type: none"> • Revegetation of areas where vegetation was disturbed to restore ecosystem function and integrity. • Removal of all 	+	6	1	2	3	27	<ul style="list-style-type: none"> ❖ All areas that have been damaged by prospecting activities and vehicles should be stabilized immediately after activities ceases to prevent and control erosion. Undertake concurrent rehabilitation throughout the operations. ❖ Remove all vehicles, equipment, waste and surplus materials from the site ❖ Clean up and remove any spills and contaminated soil on site. ❖ Ensure that all actions identified in the site closure checklist have been completed and 	8	2	3	5	65

Aspect	Activity	Impact	(N) Nature of an Impact	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance Before Mitigation	Mitigation Measures	(M) Magnitude	(E) Extent	(D) Duration	(P) Probability	Significance After Mitigation
		infrastructures onsite.							that the ECO is satisfied with the state of the site ❖ Ensure that aftercare is provided, and the natural environment recovers and stabilizes after closure.					
Soil, land use and land capabilities	Rehabilitation Activities	Soil and Land contamination from Hydrocarbon's spillages	+(ve)	8	1	4	4	52	<ul style="list-style-type: none"> ❖ Protect vegetation and soil by avoiding hydrocarbon spillages; ❖ Vehicles must make use of existing roads to avoid destruction of vegetation; ❖ Car tracks created by movement of vehicles must be rehabilitated 	8	1	4	4	52
Rehabilitation	Decommissioning Monitoring of rehabilitation activities	Document control	+(ve)	8	1	4	4	52	<ul style="list-style-type: none"> ❖ After every two years the applicant must send a rehabilitation progress report which is inclusive of the financial provisions and the total spending's towards rehabilitation. 	8	1	4	4	52

24. Motivation where no alternative sites were considered.

Please refer to **section 9** above for all alternative related discussion.

25. Statement motivating the alternative development location within the overall site.

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

The preferred location is determined by a desktop analysis of the local geology and a physical survey that has been conducted. Due to the possibility that the location has potential to underlain the reserves of minerals (dimension stone (general), feldspar, lithium ore, tantalum/niobium ore& zinc ore) that need to be prospected on, exploration activities are being carried out to determine the availability of minerals and the viability of mining them in the future.

26. Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity. (Including (i) a description of all environmental issues and risks that are identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

Through desktop study using software's such as Google Maps, ArcGIS and SANBI GIS. Information about the receiving environment was gathered and its surroundings were evaluated and analysed. In addition, the site visit and literature review of similar activities and potential impacts were identified in order to understand how the proposed development might affect all natural and social elements. The generic criteria and systematic approach used to identify, describe and assess impacts as outlined in this report is stated in the above **(table 13 and 15)**, this was done in order to determine the significance of each activity rated.

Interested and affected parties as well as landowners who are affected by the proposed project were consulted and notified to ensure that they exchange any information relating to the environment, if any.

27. Assessment of each identified potentially significant impact and risk

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

Table 16: Summary of potential impact risks

Activity Potential Impacts	Impact	Phase
Noise will be generated from the inception phase during mobilization or site establishment. This could disrupt the community members residing near the site.	Noise generation (-ve)	All phases
The proposed activities may introduce or encourage (through disturbance) the establishment of alien vegetation in the area	Introduction or an establishment of declared weeds and alien invasive species(-ve)	All phases
Loss of faunal diversity may occur because of faunal collisions with operational vehicles and the disturbance of the biodiversity/ ecosystem of the area.	Loss of Faunal Life (-ve)	Construction & operational phase
Habitat loss due to inappropriate vegetation clearing practices and inefficient rehabilitation of disturbed areas.	Habitat disruption and destruction (-ve)	All phases
Exposure of soils stripped of vegetation during the construction phase (drilling) will lead to erosion of such soils. This will result in loss of soil nutrients.	Soil erosion (-ve)	Construction Phase
<ul style="list-style-type: none"> • Personnel injuries from safety hazards on site; • Accidents as a there will be moving vehicles; • Exposure to snakes and other wild animals on site 	Personal safety and hazard exposure (actual and perceived) (-ve)	All phases

Activity Potential Impacts	Impact	Phase
Should topsoil /fertile soil be lost, these activities may further reduce land capability of the area	Change in land use and land capacity (-ve)	Construction and operational phase
Noise will be generated due to the operation of drilling machinery, excavator and trucks movement around the site and people on site	Noise generation(-ve)	All phases
The site is predominantly natural, and the proposed activities will impact upon the aesthetic value of the natural scenery.	Visual pollution (-ve)	Operational phase
Solid waste such as debris and litter can be potentially generated and deposited in and around the site. This could potentially attract nuisance and affect the natural scenery / aesthetic quality of the site.	Waste generation and storage(-ve)	All phases
Dust generation from the exploration activities may affect the natural and social environment.	Visual impact	Operational Phase
Hydrocarbon spillages from the operations (machinery or vehicles) may seep into groundwater and contaminate the groundwater reserves in and around the area.	Soil and Groundwater contamination (-ve)	Operational Phase
During operation, activities may result in dust generation and the release of particulates into the area. Potential dust generation activities may include drilling, movement of vehicles, and topsoil clearing	Dust generation (-ve)	Operational Phase
<ul style="list-style-type: none"> • Revegetation of areas where vegetation was disturbed to restore ecosystem function and integrity. • Removal of all infrastructures onsite. 	Restoration of disturbed areas (+ve)	Decommissioning Phase

28. Summary of specialist reports.

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

Table 17: Summary of specialist reports

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Archaeological and Heritage Assessment	<p>It is recommended that Amafa aKwaZulu Natal and Research Institute endorse the report as having satisfied the requirements of Section 41 (2) of Amafa aKwaZulu Natal and Research Institute Act of 2018 and 38 (8) of the NHRA requirements.</p> <ol style="list-style-type: none"> 1. It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA and Section 41(2) of Amafa aKwaZulu Natal and Research Institute Act of 2018 to approve the Prospecting Right Application on condition that all graves are identified, documented and mapped. 2. The planners for the mine must provide 100m buffer zone from each burial and historical building recorded in this report. 	x	Table 15 & 18

	<ol style="list-style-type: none">3. Documentation of graves located within homesteads must only be done if full permission is granted by the custodian families.4. Landowners and homeowners must be requested to declare graves located in their properties to ensure that all graves that occur in the project area are documented and mapped before prospecting commences.5. A walk down survey to record graves is required once permission is obtained from the residents and property owners.6. From a heritage perspective supported by the findings of this study, the Proposed Prospecting Right Application is supported. However, the Prospecting Right Application should be approved under observation that the proposed prospecting does not extend beyond the area considered in this report/affect the identified heritage sites.7. Should any of the identified historical buildings be on the direct footprint of the proposed mine footprint, a heritage practitioner must be appointed to assess the buildings in detail and apply for demolition permits from Amafa aKwaZulu Natal and Research Institute.8. Mitigation on graves must not be done without the involvement and consent from the custodian families.9. Should chance archaeological materials or human remains be exposed during work to be conducted on any section of		
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	<p>the site, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in the prospecting scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.</p> <p>10. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the Prospecting Right Application. The Heritage authority may approve the Prospecting Right Application as planned with special commendations to implement the recommendations made herein</p>		
<p>Ecological and wetland baseline impact assessment</p>	<ol style="list-style-type: none"> 1. All alien invasive, weeds and potential invasive plants generated by the development will have to be entirely cleared after prospecting; 2. - 1 KM buffer zone from Vernon Crookes nature reserve to any prospecting activities, the said buffer must be maintained; 3. - 100 meters' buffer has also been provided to protect all National Freshwater Ecosystem Priority Area (NFEPA) Status with the project application area 4. - An ongoing monitoring program will be necessary to control and/or eradicate newly emerging invasive; 	<p>x</p>	<p>Table 15 & 18</p>

	<p>5. - Newly cleared soils will have to be revegetated and stabilised as soon as construction has been completed; and;</p> <p>6. - Soils are prone to erosion and need to be stabilised by a permanent grass or suitable indigenous vegetation layer</p>		
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Attach copies of Specialist Reports as appendices

29. Environmental impact statement

29.1. Summary of the key findings of the environmental impact assessment;

29.2. Final Site Map

The site plan has been attached as figure 2

30. Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

Please refer to **table 14** for the positive and negative impacts and risks.

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

The purpose of the identified mitigation measures is to make sure that the impacts are minimized or avoided; in cases where they cannot be avoided, rehabilitation actions are to be performed at closure and as part of the project's closing objectives. All the potential (negative) impacts identified have been evaluated and found to be very high and after applying the mitigation measures, the impacts get even lower.

The EMPr addresses the environmental impacts associated with the project during Construction, Operation, and Decommissioning phase. The objectives of the EMPr are to provide detailed information that will advise the planning and design of the prospecting activities in order to avoid and/or reduce impacts that may be detrimental to the environment.

32. Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

- ❖ The point of interest must be accessed via already-existing access routes, to ensure that other users are not harmed by the development's usage of the access routes, they should be kept in good condition.
- ❖ Ensure that the access roads are well maintained and sprayed with water when required to suppress dust emissions.

- ❖ Areas that have been disturbed must be rehabilitated to a quality that matches or replicates the surrounding area,
- ❖ All generated wastes must be dumped in a licensed landfill, and a disposal certificate must be preserved on site.

33. Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

AFTER SITE ASSESSMENT

34. Reasoned opinion as to whether the proposed activity should or should not be authorised

34.1. Reasons why the activity should be authorized or not.

The applicant is applying for a prospecting right which will be undertaken through drilling of only 20 boreholes which has low impact on the environment. Should the mitigation measures and monitoring programmes proposed in this document be implemented on site, no fatal flaws could be identified that were deemed as severe as to prevent the activity from continuing.

34.2. Conditions that must be included in the authorisation

- ❖ Undertake environmental performance assessments against the EMP to ensure that all EMP measures are implemented properly.
- ❖ It is necessary to keep track of the EMP measures that have been deployed and to assess their effectiveness.
- ❖ Provide financial provision for the rehabilitation of the disturbed areas.
- ❖ Any losses suffered by landowners as a result of the anticipated exploratory activities should be covered by the right holder.
- ❖ The rehabilitation plan should be considered as the first draft that is constantly being updated and all recommendations in the report should be put into practice throughout the course of the operation.
- ❖ The site layout plan and operational design of the proposed exploratory activity should be finalized taking into account all recommendations mentioned in the report.

34.3. Period for which the Environmental Authorisation is required.

According to the prospecting works program, the authorization is required for five years from the date of issuance of the prospecting right.

35. Undertaking

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

An undertaking is provided at the end of this report.

36. Financial Provision

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

The financial provision estimated is R 92 016,02

36.2. Explain how the aforesaid amount was derived.

The aforesaid amount was derived from using the 2023 Master Rates with the determination of the quantum for closure, it must be assumed that the infrastructure had no salvage value (clean closure

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

It is confirmed that this amount can be provided for, from the operating expenditure.

37. Specific Information required by the competent Authority

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

37.1.1. Impact on the socio-economic conditions of any directly affected person.

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

Drilling operation is normally a short to medium term in duration, creating short term job opportunity and potential to improve local economy. The proposed activity will have very minimal socio-

economic impact to the farm owners as only 20 boreholes will be drilled. Groundwater resources pollution potential and extent is low

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

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

Desktop studies have no impact on any national heritage estate because they are non-invasive and do not encroach on the prospecting area. If such heritage resources are found, mitigation actions are suggested in table 15.

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

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

No other matters required in terms of sections 24(4) (a) and (b) of the Act.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. Draft environmental management programme.

1.1. Details of the EAP,

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

It is confirmed that the requirements for the provision of the details and expertise of the EAP are already included in PART A, section 1

1.2. Description of the Aspects of the Activity

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

It is confirmed that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h).

2. Composite Map

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

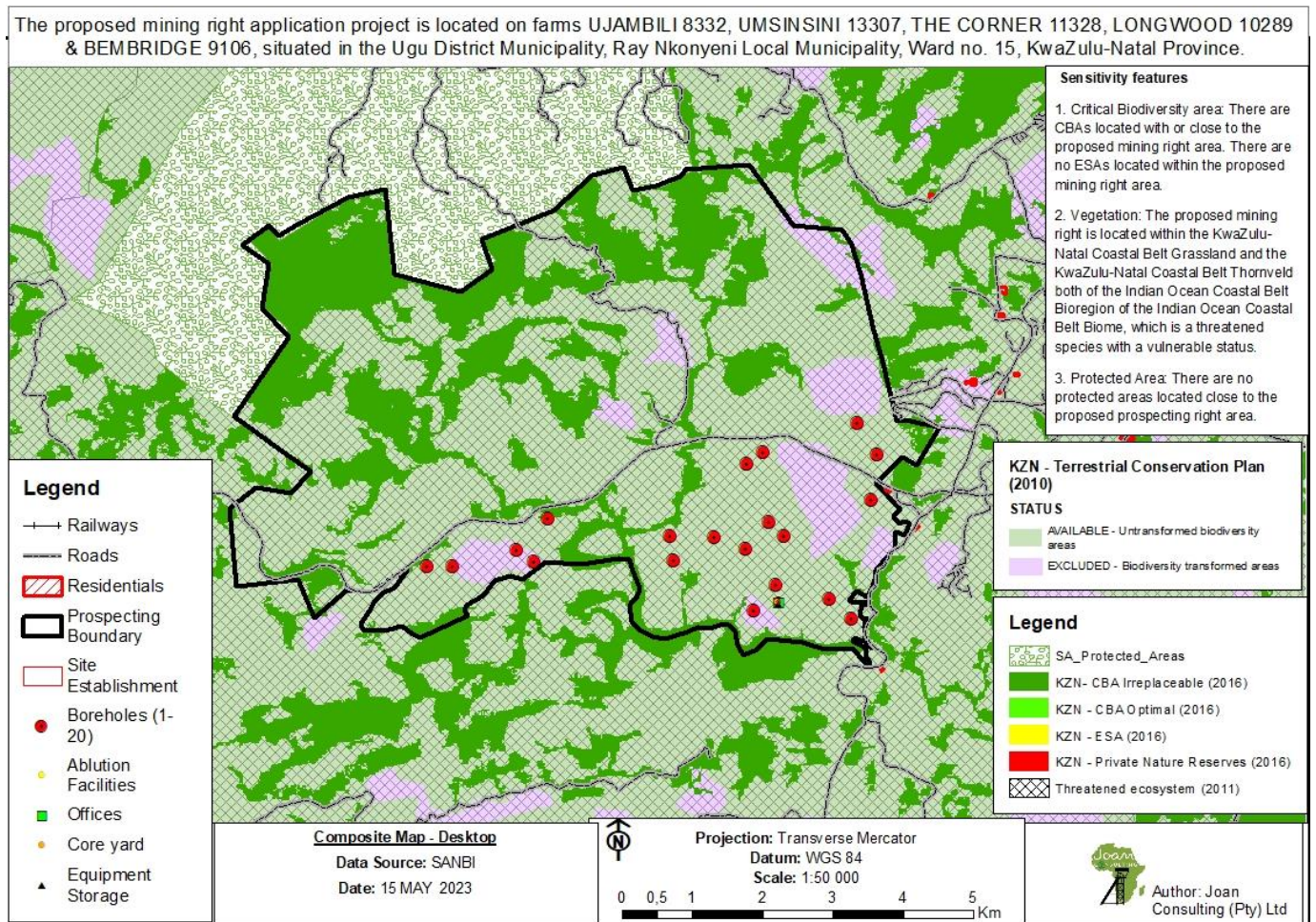


Figure18: composite map of the proposed site.

3. Description of Impact management objectives including management statements

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

- To rehabilitate the disturbed area back to its natural state as practically as possible by restoring disturbed area with indigenous plants.
- Use sufficient drill hole capping and backfilling to eliminate any safety risk connected to sumps and drill holes.
- Ensure that no temporary infrastructure is left on-site and all other items brought in the operation.
- Ensure that the rehabilitated area must not endanger safety of both people and animals.
- Protect drainage lines and watercourses; and
- Assure compliance with local, provincial and national regulatory requirements including completing rehabilitation on the site within a specified period

3.2. Volumes and rate of water use required for the operation.

The Applicant will get water from a registered water supplier and the water will be transported by a tanker. Water will be used for dust suppression, Cooling the rig and other uses onsite.

3.3. Has a water use licence has been applied for?

A Water Use Licence has not been applied for, given that the proposed exploration does not trigger any water uses as per Section 21 of the National Water Act. Water required for dust suppression will be trucked in.

4. Impacts to be mitigated in their respective phases

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

Table 18: Mitigation measures for Construction, Operational and Decommissioning phase of the project

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
CONSTRUCTION PHASE							
Vegetation	Clearing of vegetation and movement of vehicles for site establishment	Vegetation will be removed for site establishment purposes destroying environmental-natural habitat	0.432ha	<ul style="list-style-type: none"> • Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas. (Operation footprint) • No disturbance or removal of protected plant species in terms of the Nation Forest Act unless a Prospecting to do so is has been granted and removal is undertaken by a specialist • Prohibit the collection of plant material for medicinal purposes and fire wood • Where possible, place infrastructures in places that are already disturbed or degraded to avoid further removal of vegetation and increasing the footprint of the activity 	12 - 24 Months	Good Environmental Practice	Prevent and protect and conserve indigenous plants and the lives of fauna

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				<ul style="list-style-type: none"> 1 KM buffer zone from Vernon Crookes nature reserve to any prospecting activities. 			
Vegetation	Clearing of vegetation and movement of vehicles for site establishment	Disturbance to animals on site	0.432ha	<ul style="list-style-type: none"> Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees. Dogs or other pets are not allowed to the worksite as they are threats to the natural wild animal A low speed of 30km/h limit must be enforced on site to reduce wild animal-vehicle collisions No animals must be intentionally killed or destroyed and poaching and hunting should not be permitted on the site. Severe contractual fines must be imposed and immediate dismissal on any contract employee who is found attempting to snare or otherwise harms remaining faunal species. Hunting weapons are prohibited on site. Contract employees must be educated about the value of wild animals and the importance of their conservation. 	During Prospecting Activities	Biodiversity Act	Prevent and protect and conserve indigenous plants and the lives of fauna

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				<ul style="list-style-type: none"> The ECO must conduct regular site inspections of removing any snares or traps that have been erected. Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage. 			
Vegetation	Clearing of vegetation and movement of vehicles for site establishment	Increased soil erosion, increase in silt loads and sedimentation	0.432ha	<ul style="list-style-type: none"> Following prospecting, rehabilitation of disturbed areas is required Avoid areas with sensitive soils, steep slopes during rain or windy season. Ensure that roads are not paved but well maintained (as gravel) to reduce the speed of water by promoting infiltration 	During Prospecting Activities	Biodiversity Act	Prevent soil erosion and protect and conserve indigenous and the lives of fauna
Vegetation	Clearing of vegetation and movement of	Establishment and spread of declared weeds	0.432ha	<ul style="list-style-type: none"> The best mitigation measure for alien and invasive species is the early detection and eradication of these species which will be 	During Prospecting Activities	Biodiversity Act	Prevent and protect and

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
	vehicles for site establishment			<p>ensured with the use of a monitoring programme.</p> <ul style="list-style-type: none"> An alien invasive management programme should be developed and implemented in order to control alien invasive species 			conserve indigenous plants
Soil	Clearing of vegetation and movement of vehicles for site establishment	Soil erosion as the results of exposed surface	0.432ha	<ul style="list-style-type: none"> Sensitive landscapes must be marked as NO-GO areas Immediately rehabilitate areas that have been stripped of vegetation by rehabilitating. Restrict impacts to prospecting activities footprint Have temporal erosion control measures to protect the disturbed soils and topsoil until adequate vegetation has been established. Topsoil must be retained and replaced where possible as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem functioning. Topsoil stockpiles should be covered/protected to prevent erosion by wind and/or water 	12 - 24 Months	Good Environmental Practice	Prevent soil erosion and protect and conserve indigenous plants and the lives of fauna

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
Soil	Clearing of vegetation and movement of vehicles for site establishment	Soil contamination by oil spills from vehicles and machinery	0.432ha	<ul style="list-style-type: none"> Any equipment that is leaking must be temporarily decommissioned and removed from the site, to a surface with an impermeable surface and waste water collection system. Spill kits must be provided for onsite spill cleaning. Clean any oil spillages on site within 24 hours Make all staff aware of the need to prevent spills, leaks and disposal of contaminated water onto the ground and ensure that they are adequately trained to take corrective action should an accidental spill occur Provide drip trays for all parked vehicles 	12 - 24 Months	Good Environmental Practice	Prevent soil erosion and protect and conserve indigenous plants and fauna
Air Quality	Clearing of vegetation and movement of vehicles for site establishment	Dust generation by movement of large vehicles delivering mobile facilities	0.432ha	<ul style="list-style-type: none"> Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas. (Operation footprint) No disturbance or removal of protected plant species in terms of the Nation Forest Act unless a license to do so is has been granted and removal is undertaken by a specialist 	Throughout Operational Phase	Minimal or no gaseous emissions to neighbouring farms and atmosphere	To remain within air quality ambient level

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				<ul style="list-style-type: none"> Prohibit the collection of plant material for medicinal purposes and fire wood Where possible, place infrastructures in places that are already disturbed or degraded to avoid further removal of vegetation and increasing the footprint of the activity 			
Noise	Clearing of vegetation and movement of vehicles for site establishment	Noise will be generated from the operation of construction vehicles and machinery.	0.432ha	<ul style="list-style-type: none"> Working during the day time only minimise disruption of neighbours and animal life. Operational hours should be kept between 08H00- 17H00 in summer and 08H00- 16H00 in winter. Service equipment, machineries, trucks and other vehicles regularly to minimise noise and where possibly place silencers on equipment / machinery Provide ear plugs to the employee and ensure they wear them for the protection of their ears Use equipment or machinery that complies with the manufacture's specifications acceptable noise level 	Throughout Construction Phase	SANS 10103 Acceptable Ambient Levels and SANS 10210 of 2004, Noise Control Regulations - General Notice R154 of 10 January 1992	To remain with Acceptable noise Ambient Levels

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
Soil and Groundwater	Clearing of vegetation and movement of vehicles for site establishment	Hydrocarbon spillages from the operations (machinery or vehicles) may seep into groundwater and contaminate the groundwater reserves in and around the area.	0.432ha	<ul style="list-style-type: none"> Vehicles must be restricted to travel on the designated roadways at the recommended times Topsoil must be retained and replaced where possible as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem functioning. Topsoil stockpiles should be covered/protected to prevent erosion by wind and/or water Provide and place drip trays under parked vehicle to avoid soil contamination by hydrocarbon leakage by equipment/machinery 	Throughout construction phase	Prevention of groundwater pollution in line with National Water Act (36 of 1998)	Prevent soil erosion and groundwater pollution
Vegetation (Weeds)	Clearing of vegetation and movement of vehicles for site establishment	The proposed activities may introduce or encourage (through disturbance) the establishment of	0.432ha	<ul style="list-style-type: none"> The best mitigation measure for alien and invasive species is the early detection and eradication of these species which will be ensured with the use of a monitoring programme. An alien invasive management programme must be implemented in order to control alien invasive species. All alien invasive tree & 	Throughout Construction Phase	Biodiversity and Mining Guideline 2013	Prevent and protect and conserve indigenous plants

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
	of declared weeds	alien vegetation in the area		<p>weed species growing in the areas disturbed by prospecting activities must be removed from the cleared area, and continuous monitoring should be conducted for three consecutive years after closure of each site.</p> <ul style="list-style-type: none"> • Monitor the establishment of any foreign/alien invasive species on site and remove. 			
Land Capability	Clearing of vegetation and movement of vehicles for site establishment	Should topsoil/fertile soil be lost, these activities may further reduce land capability of the area	0.432ha	<ul style="list-style-type: none"> • Place infrastructures in places that are already disturbed or degraded to avoid increasing the footprint of the activity • Landowners must be consulted on where the different infrastructures can be placed. • Avoid as far as possible areas of important farm land activities, by selecting areas with a low veld condition and diversity. • Topsoil and sub soil must be kept separately throughout drilling activities and rehabilitation • Carry out concurrent rehabilitation throughout the life of the project to encourage quick recovery of the project area 	Throughout Construction Phase	Soil Conservation	To conserve soil within proposed site.

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				<ul style="list-style-type: none"> Where soil nutrients and/or fertility has been lost, the soil should be fertilised to recover cultivation capacity Avoid as far as possible areas of important farm land activities, by selecting areas with a low veld condition and diversity. 			
Fauna	Clearing of vegetation and movement of vehicles for site establishment	Loss of faunal diversity may occur because of faunal collisions	0.432ha	<ul style="list-style-type: none"> Work during daytime to minimise the disruption animal life. Operational hours must be kept between 08H00- 17H00 in summer and 08H00- 16H00 in winter. Do not disturb nests, breeding sites or young animals. Do not attempt to kill or capture snakes unless directly threatening the safety of employees. Vehicles must be restricted to travel on the designated roadways to minimize the ecological footprint of the proposed development Keep to the speed limit of 30 km/h on all roads running through and accessing the site to avoid driving over any fauna 	Throughout Construction Phase	Biodiversity and Mining Guideline 2013	Prevent and protect and conserve indigenous plants and the lives of fauna

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
Safety	Clearing of vegetation and movement of vehicles for site establishment	<ul style="list-style-type: none"> Personnel injuries from safety hazards on site; Accidents because of moving vehicles; Exposure to snakes and other wild animals on site 	0.432ha	<ul style="list-style-type: none"> Ensure that workers and any persons accessing the site wear the correct PPE at all times Compile a health and safety risk assessment of the site to identify all safety related hazards and risks Educate all employees working on site, in the form of inductions/training or toolbox talks of the health and safety risks on site 	Throughout Construction Phase	Occupational Health and Safety Standards	To promote health and safety to all the workers
Heritage Resources	Clearing of vegetation and movement of vehicles for site establishment	Impact on Heritage Resources	0.432ha	<ul style="list-style-type: none"> Should artefacts or archaeological items be observed, then all activity should cease immediately, the area marked off and a specialist consulted prior to any further activity Should graves be observed on site during activity progress then all activity should cease and the area demarcated as a no-go zone 	Throughout Construction Phase	Protection of archaeological materials	Prevent and protect archaeological materials
Cultural heritage	Clearing and prospecting	Destruction of archaeological remains	0.432ha	<ul style="list-style-type: none"> Maintain 25m buffer zones for all burial sites Burial sites must be mapped Consult Landowners and farm workers to identify burial sites before prospecting 	Throughout Operation	Protection of archaeological materials	Prevent and protect archaeological materials

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
					nal Phase		gical materials
Traffic	Clearing of vegetation and movement of vehicles for site establishment	Increased traffic	0.432ha	<ul style="list-style-type: none"> Speed limits must be established and limited to 30KM/h on site to minimise accidents Traffic signs to be put around the site to notify motorists and drivers about the activities 	Througho ut Construc tion Phase	Smooth traffic flow	Promote smooth traffic flow
Waste Management	Clearing of vegetation and movement of vehicles for site establishment	Generated Solid waste	0.432ha	<ul style="list-style-type: none"> Solid waste must be stored in a designated area for collection and disposal. These materials maybe sold to appropriate recycling traders or taken to recycling plant. Ensure that there are suitable storage and collection facilities in place for general waste, recyclable and special wastes. 	Througho ut Construc tion Phase	Good House Keeping	Promote good hygiene and house keeping
Air Quality and Noise	Clearing of vegetation and movement of vehicles for	On Game Lodges, Lodges & Guest Houses: <ul style="list-style-type: none"> Dust Generation 	0.432ha	<ul style="list-style-type: none"> Best access route that will not generate dust and noise to Game Lodges, Lodges & Guest Houses should be discussed with the landowner prior any construction activities 	Througho ut Construc tion Phase	Compliance with Ambient air and noise quality Standards	To remain within air and quality

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
	site establishment	<ul style="list-style-type: none"> Noise Generation 		<p>may commence on site Footprint earmarked for vegetation removal must be clearly marked</p> <ul style="list-style-type: none"> Trucks, machinery, and equipment must be regularly serviced to reduce noise levels Work should be conducted during day time only to minimise disruption of neighbours and animal life. 			ambient level
Fauna	Clearing of vegetation and movement of vehicles for site establishment	<p>Impacts on Game Lodge</p> <ul style="list-style-type: none"> Dispersing and disruption of animals 	0.432ha	<ul style="list-style-type: none"> No wild animal may under any circumstance be handled, removed or be interfered with No wild animal may be fed on site No wild animal may under any circumstance be hunted, snared, captured, injured or killed No wild animal may under any circumstance be hunted, snared, captured, injured or killed Remove and dispose of any snares or traps found on or adjacent to the site 	Throughout Construction Phase	Compliance with conservation of wild life Standards	Prevent and protect and conserve indigenous plants and the lives of fauna
Social	Clearing of vegetation and movement of	<ul style="list-style-type: none"> Impact on Settlement and Residential 	0.432ha	<ul style="list-style-type: none"> The applicant must consult with the affected parties on which times are favourable for them before undertaking the activities which could negatively impact their livelihood. 	Throughout Construction	Compliance with standards within the IDP	Prevent and protect the

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
	vehicles for site establishment	<ul style="list-style-type: none"> Negatively impacting on residents' livelihoods 		<ul style="list-style-type: none"> The applicant must ensure that there is an insurance policy in place readily available to compensate for any loss on the farm caused by the proposed activities; 	<p>tion Phase</p>		livelihoods of farmers owners and local residents
Safety and Security	Clearing of vegetation and movement of vehicles for site establishment	Fear of farm attacks by farmers due to strangers in the area	0.432ha	<ul style="list-style-type: none"> Notify the local forum of the Prospecting team to before accessing the site. People accessing the site must be known before accessing the site though sending the pictures of themselves. Registration numbers of the vehicles (Make of the vehicles) on site must be known before accessing site. All contractors appointed by the applicant must ensure that farm gates remain locked at times when entering and exiting the farms. 	Throughout Construction Phase	Compliance with health and safety standards	To promote safety to all the visitors and workers
OPERATIONAL PHASE – DRILLING							
Clearing of Vegetation	Borehole drilling, construction	Creating site offices, parking lots, ablution block	0.432ha	<ul style="list-style-type: none"> Areas to be cleared must be clearly marked and clearing of vegetation must only take 	6 - 12 Months During	Good Environmental Practice	Prevent and protect

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
	of water sump and movement of vehicles	which causes the clearing of vegetation.		<p>place within these demarcated areas. (Operation footprint)</p> <ul style="list-style-type: none"> Any sensitive or endangered tree species that is cleared should be kept for re-planting after operational phase Prohibit the collection of plant material for medicinal purposes and fire wood Where possible, place infrastructures in places that are already disturbed or degraded to avoid further removal of vegetation and increasing the footprint of the activity 1 KM buffer zone from Vernon Crookes nature reserve to any prospecting activities 	Operational Phase		and conserve indigenous plants and the lives of fauna
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Removal of the natural vegetation	0.432ha	<ul style="list-style-type: none"> Due to the sensitivity of the area, it is advised that areas designated for vegetation clearing should be identified and visibly marked off and also approved as part of final drilling map Avoid drilling on the Falls area as it provides habitat for Vultures as well as Blue Cranes. Use already available farm roads and avoid creating new ones 	During Operational Phase	Biodiversity Act	Prevent and protect and conserve indigenous plants and the

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				<ul style="list-style-type: none"> Vegetation clearing areas should be kept to a minimum and restricted to the proposed drilling sites. Exposed areas must be rehabilitated with indigenous plants to the project area as soon as construction is finished 			lives of fauna
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Disturbance to animals on site	0.432ha	<ul style="list-style-type: none"> Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees. Dogs or other pets are not allowed to the worksite as they are threats to the natural wild animal A low of 30km/h speed limit must be enforced on site to reduce wild animal-vehicle collisions No animals must be intentionally killed or destroyed and poaching and hunting should not be permitted on the site. Severe contractual fines must be imposed and immediate dismissal on any contract employee who is found attempting to snare or otherwise harms remaining faunal species. 	During Prospecting Activities	Biodiversity Act	Prevent and protect and conserve indigenous plants and the lives of fauna

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				<ul style="list-style-type: none"> Hunting weapons are prohibited on site. Contract employees must be educated about the value of wild animals and the importance of their conservation. The ECO must conduct regular site inspections of removing any snares or traps that have been erected. Employees and contractors must be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage. 			
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Increased soil erosion, increase in silt loads and sedimentation	0.432ha	<ul style="list-style-type: none"> Following prospecting, rehabilitation of disturbed areas is required Avoid areas with sensitive soils, steep slopes during rain or windy season. Ensure that roads are not paved but well maintained (as gravel) to reduce the speed of water by promoting infiltration 	During Prospecting Activities	Biodiversity Act	Prevent soil erosion and protect and conserve indigenous and the lives of fauna

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
Vegetation	Borehole drilling, construction of water sump and movement of vehicles	Establishment and spread of declared weeds	0.432ha	<ul style="list-style-type: none"> The best mitigation measure for alien and invasive species is the early detection and eradication of these species which will be ensured with the use of a monitoring programme. An alien invasive management programme should be developed and implemented in order to control alien invasive species 	During Prospecting Activities	Biodiversity Act	Prevent and protect and conserve indigenous plants
Fire	Borehole drilling, construction of water sump and movement of vehicles	There is a potential for fire to occur on the site. Veld fires can occur across the vegetated areas of the property	0.432ha	<ul style="list-style-type: none"> Vegetation around proposed site must be kept short to create a fire management zone. Open fire is prohibited to people involved in prospecting. No burning cigarettes or matches may be thrown down within prospecting area. Collection of fire wood is not allowed. Rubbish or vegetation may under no circumstances be burnt Training of staff will include awareness regarded the rules of the site. 	During Prospecting Activities	National Forest Act (Act No. 84 of 1998)	Prevent and protect potential fire across vegetated areas
Noise	Borehole drilling,	Noise will be generated due to	0.432ha	<ul style="list-style-type: none"> All equipment to be adequately maintained and kept in good working order to reduce 	During Prospecting	SANS 10103 Acceptable	To remain within air

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
	construction of water sump and movement of vehicles	the operation of drilling machinery, trucks movement around the site and people on site		<p>noise. Operational hours should be kept between 08H00- 17H00 in summer and 08H00- 16H00 in winter.</p> <ul style="list-style-type: none"> Workers and personnel will wear hearing protection (ear plugs) when required. Use equipment or machinery that complies with the manufacture's specifications acceptable noise levels All vehicles and activities will only operate during daytime hours. 	ng Activities	Ambient Levels and SANS 10210 of 2004, Noise Control Regulations - General Notice R154 of 10 January 1992	quality ambient level
Soil	Borehole drilling, construction of water sump and movement of vehicles	Exposure of soils stripped of vegetation during the construction phase (drilling) will lead to erosion of such soils. This will result in loss of soil nutrients.	0.432ha	<ul style="list-style-type: none"> Have temporal erosion control measures to protect the disturbed soils and topsoil until adequate vegetation has established. Undertake concurrent rehabilitation to restrict the exposure period of soils exposed and vulnerable to erosion Vehicles must be restricted to travel on the designated roadways at the recommended Topsoil must be retained and replaced where possible as topsoil contains a lot of the nutrients from decomposed organic matter and is therefore important for ecosystem 	During Prospecting Activities	Prevention of groundwater pollution in line with National Water Act (Act No. 36 of 1998)	To prevent groundwater pollution

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				functioning. Topsoil stockpiles must be covered /protected to prevent erosion by wind and/or water			
Land Capability	Borehole drilling, construction of water sump and movement of vehicles	Should topsoil/fertile soil be lost, these activities may further reduce land capability of the area	0.432ha	<ul style="list-style-type: none"> Place infrastructures in places that are already disturbed or degraded to avoid increasing the footprint of the activity Landowners must be consulted on where the different infrastructures can be placed. Avoid as far as possible areas of important farm land activities, by selecting areas with a low veld condition and diversity Topsoil and sub soil must be kept separately throughout prospecting activities and rehabilitation Carry out concurrent rehabilitation throughout the life of the project to encourage quick recovery of the project area 	During Prospecting Activities	Soil Conservation	To conserve soil on the proposed site.
Top Soil	Top soil Stockpiling during drilling	Dust generation from stockpiles	0.432ha	<ul style="list-style-type: none"> Prior prospecting, all topsoil must be stockpiled for use during the Rehabilitation Phase. 	During Prospecting	Soil Conservation	To conserve soil on the

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				<ul style="list-style-type: none"> • Stockpiled topsoil must be used as the final cover for all disturbed areas where re-vegetation is required. • Stockpiled soil must be protected by erosion-control berms if exposed for a period of greater than 14 days during the wet season. • Soil stockpiles must be located away from drainage lines and areas of temporary inundation during the wet season. • If possible, seeding of the stockpiles with suitable local vegetation is recommended. 	ng Activities		proposed site
Soil and Groundwater	Borehole drilling, construction of water sump and movement of vehicles	Hydrocarbon spillages from the operations (machinery or vehicles) may seep into groundwater and contaminate the groundwater reserves in the area.	0.432ha	<ul style="list-style-type: none"> • Vehicles and equipment must be regularly serviced and maintained. • Refuelling of vehicles and equipment will be done with care to minimise the chance of spillages; • Dip trays must be placed under parked vehicles and machinery • A spill kit must be available on each site where operation activities are in progress; and 	During Prospecting Activities	Prevention of Groundwater Pollution in line with National Water Act (Act No. 36 of 1998)	To prevent soil and groundwater pollution

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				<ul style="list-style-type: none"> Any spillages must be cleaned up immediately to prevent further contamination. 			
Waste Management	Waste generation and storage during drilling	Solid waste such as debris and litter can be potentially generated and deposited in and around the site. This could potentially attract nuisance and affect the natural scenery/aesthetic quality of the site.	0.432ha	<ul style="list-style-type: none"> Littering must be prohibited, and all waste generated from the site should be cleared. A 'no waste dumping' sign must be placed on site. Waste generated by workers must be collected and disposed of weekly at the nearest registered landfill. Store waste in labelled containers, indicating clearly whether the waste is hazardous or non-hazardous (general waste). Burning of waste material is not permitted. Hazardous materials will be generated if there are spillages during operation and maintenance periods. This waste should be cleaned up using absorbent material provided in spill kits on site and must be disposed of accordingly at a hazardous waste landfill. 	During Prospecting Activities	Waste Management Regulation standards	Promote good hygiene and house keeping

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				<ul style="list-style-type: none"> Absorbent materials used to clean up spillages must be disposed of in a separate hazardous waste bin. 			
Heritage Resources	Discovery of graves and other heritage resources during drilling	Destruction of heritage resources	0.432ha	<ul style="list-style-type: none"> Should artefacts or archaeological items be observed, then all activity ought to cease immediately, the area marked off and a specialist consulted prior to any further activity. Should graves be observed on site during activity progress then all activity must cease and the area demarcated as a no-go zone 	Throughout Operational Phase	Protection of archaeological materials	To protect archaeological materials
Cultural heritage	Clearing and prospecting	Destruction of archaeological remains	0.432ha	<ul style="list-style-type: none"> Maintain 25m buffer zones for all burial sites Burial sites must be mapped. Consult Landowners and farm workers to identify burial sites before prospecting 	Throughout Operational Phase	Protection of archaeological materials	To protect archaeological materials
Air Quality	Borehole drilling, construction of water sump and	<ul style="list-style-type: none"> During operation, activities may result in dust generation and 	0.432ha	<ul style="list-style-type: none"> Best access route that will not generate dust and noise to Game Lodges, Lodges & Guest Houses should be discussed with the landowner prior any construction activities may commence on site 	Throughout Operational Phase	NEMA: Air Quality Act, 2004 (Act No. 39 of 2004)	To remain within air quality ambient level

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
	movement of vehicles	<p>the release of particulates into the area.</p> <ul style="list-style-type: none"> Potential dust generation activities may include drilling, movement of vehicles and topsoil clearing 		<ul style="list-style-type: none"> Limiting the number of vehicles driving on and offsite Topsoil stockpiles or soil heaps must be watered to reduce dust emission Keep to the speed limit of 30 km/h on all roads running through and accessing the site Minimize the extent of cleared vegetation and exposed soil. Where possible, place protective nets over exposed soil. 			
Soil	Borehole drilling, construction of water sump and movement of vehicles	Soil Erosion	0.432ha	<ul style="list-style-type: none"> Have temporal erosion control measures to protect the disturbed soils and topsoil until adequate vegetation has established Undertake concurrent rehabilitation to restrict the exposure period of soils exposed and vulnerable to erosion Vehicles are restricted to travel on the designated roadways at the recommended Topsoil should be retained and replaced where possible as topsoil contains a lot of the nutrients from decomposed organic matter 	Throughout Operational Phase	Soil Conservation	To conserve soil on the proposed site

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				and is therefore important for ecosystem functioning.			
Soil	Borehole drilling, construction of water sump and movement of vehicles	Soil Contamination	0.432ha	<ul style="list-style-type: none"> Areas to be cleared must be clearly marked and clearing of vegetation must only take place within these demarcated areas Vehicles must be restricted to travel on the designated roadways Provide drip trays for all parked vehicles 	Throughout Operational Phase	Soil Conservation	To conserve soil on the proposed site
Emergency Procedures	Borehole drilling, construction of water sump and movement of vehicles	Hydrocarbon spills	0.432ha	<ul style="list-style-type: none"> The source of the spill must be isolated and the spillage contained using sand berms, sandbags, sawdust, absorbent material and/or other materials approved by the Site Agent. The area must be cordoned off and secured. The Client and ECO must ensure that there is always a supply of absorbent material readily available to absorb/breakdown the spill. The ECO must notify the relevant authorities of any spills that occurs. The ECO shall assemble and clearly list the relevant emergency telephone contact 	Throughout Operational Phase	Good House Keeping	To promote good housekeeping from hydrocarbon spills

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
				numbers for staff and brief staff on the required procedures.			
Traffic	Borehole drilling, construction of water sump and movement of vehicles	Increased in Traffic	0.432ha	<ul style="list-style-type: none"> Speed limits must be established and limited to 30KM/h on site to minimise accidents. Traffic signs to be put around the site to notify motorists and drivers about the activities. 	Throughout operational Phase	Smooth Traffic Flow	To promote smooth traffic flow
DECOMMISSIONING AND CLOSURE PHASE							
Rehabilitation	Rehabilitating of the disturbed and contaminated areas	<ul style="list-style-type: none"> Revegetation of areas where vegetation was disturbed to restore ecosystem function and integrity. 	0.432ha	<ul style="list-style-type: none"> All areas that have been damaged by Prospecting activities and vehicles should be stabilized immediately after activities ceases to prevent and control erosion. Undertake concurrent rehabilitation throughout the operations. Remove all vehicles, equipment, waste and surplus materials from the site Clean up and remove any spills and contaminated soil on site. 	After Decommission of Prospecting Activities	Good house keeping	Promote re-planting of indigenous plants and good house keeping

Aspect	Activity	Impact	Size and scale	Mitigation Measures	Implementation Period	Compliance with Standards	Standard to be Achieved
		<ul style="list-style-type: none"> Removal of all infrastructures onsite. 		<ul style="list-style-type: none"> Ensure that all actions identified in the site closure checklist have been completed and that the ECO is satisfied with the state of the site Ensure that aftercare is provided, and the natural environment recovers and stabilizes after closure. 			
Soil, land use and land capabilities	Rehabilitation Activities	Soil and Land contamination from Hydrocarbon's spillages	0.432ha	<ul style="list-style-type: none"> Protect vegetation and soil by avoiding hydrocarbon spillages; Vehicles must make use of existing roads to avoid destruction of vegetation; Car tracks created by movement of vehicles must be rehabilitated 	After Decommission of Prospecting Activities	Good house keeping	prevent soil and land contamination from Hydrocarbon's spillages
Monitoring of rehabilitation activities	Rehabilitation Activities	Document control	0.432ha	<ul style="list-style-type: none"> After every two years the applicant must send a rehabilitation progress report which is inclusive of the financial provisions and the total spending's towards rehabilitation to the environmental officer 	After Decommission of Prospecting Activities	Good house keeping	Promote good house keeping

5. Impact Management Outcomes

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

All the above requirements are addressed in **Table 17** above

6. Impact Management Actions

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

All the above requirements are addressed in **Table 17** above.

7. Financial Provision

7.1. Determination of the amount of Financial Provision.

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

Closure and rehabilitation will be done with reference to the closure objectives. The closure objectives include:

- ❖ Rehabilitate the disturbed area back to its natural state as close as possible.
- ❖ Leave no remnant impacts on the neighbouring farmers and rehabilitate to allow re-vegetation.
- ❖ Leave no open borehole on site. Close the drill holes with caps.
- ❖ Removing all the mobile infrastructure and all other items used during operation
- ❖ Ensure that the site remain free from any waste.
- ❖ To safeguard the safety and health of humans and animals on the site.
- ❖ To limit and manage the visual impact of the Prospecting activities.
- ❖ To manage and limit the impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued.
- ❖ To ensure minimal disturbance whenever possible so that normal land use can continue after closure.

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

It is confirmed that a draft report with environmental objectives in relation to closure have been sent to landowner and interested and affected parties.

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

Table 19:rehabilitation measures

Activity	Extent Before Closure	Area After Rehabilitation and Closure
Boreholes	0.2 ha	Area completely rehabilitated- boreholes closed with caps.
Site Establishment <ul style="list-style-type: none"> • Workshop • Storage Yard • Ablution • Office 	0.2 ha	Area completely rehabilitated- all infrastructure removed
Mobile office and ablution facilities	0.032ha	Area completely rehabilitated- all infrastructure removed.
Total disturbed area/ surfaces	0.432ha	Clean, rip and fertilize

The following rehabilitation plan will be implemented for the above -mentioned activities.

- All mobile ablution/toilets will be taken away from site and the area disturbed will be revegetated.
- Drill holes shall be capped by placing a steel casing to a suitable depth and concrete cap on top of the borehole.
- The equipment storage area will be decommissioned and removed from site. The disturbed area will be cleaned and ripped to aid revegetation.
- All infrastructure and machinery on the site camp shall be removed and area shall be ripped to promote revegetation.
- The temporary access road, single track or formal shall be ripped or ploughed, and where necessary fertilizer (based on soil analysis) applied to ensure the regrowth of vegetation.
- The areas shall be cleared of any contaminated soil.
- The site will be mulched using locally obtained grass; this is to stimulate the long-term establishment of indigenous vegetation and to reduce erosion during early plant growth.

- Rehabilitation of the new topographical landscape will be conducted in such a way that it would blend in with the surrounding landscape and allow normal (controlled) surface drainage to continue.

All illegal invader plants and weeds shall be eradicated as required in terms of Regulation 15 & 16 of the Act on Conservation of Agricultural Resources, 1983 (Act no. 43 of 1983) which list the plants

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

The closure objectives are aligned with the site and the rehabilitation that must be done. The closure objectives are aimed at leaving the project site as far as possible, in the state which is safe, and which will allow natural succession. The rehabilitation plan responds to these closure objectives and aims to carry out tasks that will ensure that the closure objectives are met.

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

Table 20: Financial Provision for Rehabilitation for year 1

Applicant:		Afli Exploration 3 Investment (Pty) Ltd				Ref: KZN30/5/1/1/2/11352 PR		
Evaluators:		Lufuno Mutshathama				Date: May 2023		
No.	Description	Unit	A	B	C	D	E=A*B*C*D	
			Quantity	Master	Multiplication	Weighting	Amount	
				Rate 2023	factor	factor 1	(Rands)	
1	Dismantling of processing plant and related	M ³	0	19.27	1	1	0.00	

	structures (including overland conveyors and power lines)						
2 (A)	Demolition of steel buildings and structures	M ²	0	268.39	1	1	0.00
2(B)	Demolition of reinforced concrete buildings and structures	M ²	0	395.52	1	1	0.00
3	Rehabilitation of access roads	M ²	0	48.03	1	1	0.00
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	466.15	1	1	0.00
4 (B)	Demolition and rehabilitation of	m	0	254.26	1	1	0.00

	non-electrified railway lines						
5	Demolition of housing and/or administration facilities	M ²	0	536.78	1	1	0.00
6	Opencast rehabilitation including final voids and ramps	ha	0	281,385.87	1	1	0.00
7	Sealing of shafts adits and inclines	M ³	0	144,08	1	1	0.00
8 (A)	Rehabilitation of overburden and spoils	ha	0	187,590.58	1	1	0.00
8 (B)	Rehabilitation of processing waste deposits and	ha	0	233,640.68	1	1	0.00

	evaporation ponds (basic salt producing waste)						
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic metal-rich waste)	ha	0	678,603.27	1	1	0.00
9	Rehabilitation of subsided areas	ha	0	157,078.86	1	1	0.00
10	General surface rehabilitation	ha	0.432	148,603.38	1	1	64 196,66
11	River diversions	ha	0	148,603.38	1	1	0.00
12	Fencing	m	0	169,51	1	1	0.00

13	Water management	ha	0	105,220.16	1	1	0,00
14	2 to 3 years of maintenance and aftercare	ha	0.432	19,776.12	1	1	8 543,28
15 (A)	Specialist study	Sum	1	0.00	1	1	0.00
15 (B)	Specialist study	Sum	1	0.00	1	1	0.00
					sum		72 739,94
			subtotal 1	weighting factor 2	1		72 739,94
1	Preliminary & General		10%				7 273,99
1	Contingencies		10%				7 273,99
			Subtotal 2				80 013,93
			VAT (15%)		15%		12 002,09
					Grand Total		92 016,02

7.7. Confirm that the financial provision will be provided as determined.

It is confirmed that the financial provision will be provided as determined by the competent authority.

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

8.1. Monitoring of Impact Management Actions.

Monitoring of the impact management actions will be done by the Environmental Control Officer and the project manager. It is therefore the responsibility of the contractor to ensure that all relevant measures are taken to rectify such damage, at the contractor's expense. It is the duty of the ECO to monitor compliance with the EMP, and report and notify the contractor of any non-compliance, highlighting the following:

- Details of the nature of the non-conformance.
- The actions to be taken to correct the situation; and
- The date by which each corrective action should be executed.

8.2. Monitoring and reporting frequency

Monitoring will be done monthly and the reporting to the competent authority will be done annually. Any non-compliance will be recorded, and plans of actions documented.

8.3. Responsible persons

For this EMP to be implemented effectively, all role players involved in this project need to comply with the directives set out. A concise description of impacts and their mitigation/management measures will be provided and understood by all role players responsible for the implementation and monitoring of the mitigation measures.

This project will comprise of the following responsible role players:

- Lead Authority (DMR- Kwazulu Natal Regional)
- The Environmental Control Officer.
- The Contractor.
- The project manager and
- The Developer (Permit holder).

These parties will ensure that all conditions stated on the right are adhered to and that all environmental management requirements are met. Each person's responsibility is detailed in the Table below.

Table 21: Responsible person for the project

Functions	Responsibility
Permit Holder	Ensuring compliance to the EMP and conditions contained in the Environmental Authorisation (EA). Contracting the Environmental Control Officer as an independent appointment to objectively monitor and implement the applicable environmental legislation.
Project Manager	<p>Complete responsibility of the whole project and any contracted parties and ensuring that all environmental management facets are adhered to. The Project Manager will be supported by the ECO, with the following roles and responsibilities during the operations;</p> <ul style="list-style-type: none"> • Review the annual reports compiled by the Environmental Control Officer (ECO); • Identify the need for remedial measures with regard to proposed works; • Communicate directly with the Contractors; and • Issue non-conformance notifications to Contractors that do not comply with the requirements as set out in the EMP.
Environmental Control Officer	<ul style="list-style-type: none"> • Objectively monitor, implement applicable environmental legislation, conditions of Environmental Authorisations (EA's) and the EMP. • Conduct audits on compliance to applicable environmental legislation, conditions of EA's and the EMP. Including size and sensitivity of the development (on grounds of the EIA). • Liaison between the relevant authorities and project team. Any changes in environmental conditions, registration and updating of all EMP documentation should be communicated and carried out by the ECO • Develop environmental awareness training for all new site personnel (e.g. posters, tool box talks, signage); • Undertake visual inspections of the activities of employees with regard to implementation of the requirements outlined in the EMP;

	<ul style="list-style-type: none"> • Immediately notify the Project Manager of any non-compliance with the EMP, or any other complaints or issues of environmental concern; • ; and Ensure that all environmental monitoring programmes (sampling, measuring, recording etc.) are carried out according to protocols and schedules
Lead Authority (DMR)	The department responsible for approving the Environmental Authorisation application. Ensuring that the monitoring and adherence to EMPs is carried out, by going through/reviewing audit reports submitted by the ECO and conducting regular site visits.
Contractor	A Contractor will be employed by the developer for different components of the project. The Contractor's primary responsibilities are to construct the works and ensure compliance with the EMP whilst carrying out the work.

8.4. Time period for implementing impact management actions

The impact management actions must be implemented throughout the life of the prospecting activities. These impact management actions must immediately start to be implemented as soon as the activities which requires them commence.

8.5. Mechanism for monitoring compliance

Table 22: mechanism for monitoring compliance

Associated Potential Impacts	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementing Impact Management Actions
Construction and operation			
<ul style="list-style-type: none"> ❖ Noise generation (-ve) 	<ul style="list-style-type: none"> ❖ Maintain a complaint register that is made accessible to the locals. ❖ Safety inspection to ensure all workers are wearing protective ear plugs during blasting operations 	<ul style="list-style-type: none"> ❖ ECO& Project manager 	<ul style="list-style-type: none"> ❖ Monitor Monthly ❖ Weekly reporting on any complaints
<ul style="list-style-type: none"> ❖ Soil contamination by oil spills from vehicles (-ve) 	<ul style="list-style-type: none"> ❖ Daily inspection of operational equipment 	<ul style="list-style-type: none"> ❖ ECO & Project Manager 	<ul style="list-style-type: none"> ❖ Daily inspection ❖ Weekly reporting

Associated Potential Impacts	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementing Impact Management Actions
	<ul style="list-style-type: none"> ❖ Service vehicles timeously 		<ul style="list-style-type: none"> ❖ Services vehicles within prescribed services periods ❖ Immediate implementation of management actions
<ul style="list-style-type: none"> ❖ Noise generation (-ve) 	<ul style="list-style-type: none"> ❖ Maintain a complaint register that is made accessible to the locals 	<ul style="list-style-type: none"> ❖ ECO& Project manager 	<ul style="list-style-type: none"> ❖ Weekly reporting on any complaints
<p>Solid waste such as debris and litter can be potentially generated and deposited in and around the site. This could potentially attract nuisance and affect the natural scenery / aesthetic quality of the site.</p> <p>Contamination of soil and underground water by spills from mobile ablution facilities</p>	<ul style="list-style-type: none"> ❖ Inspection of waste storage and ablution facilities and the general site inspection for any oil spillages 	<ul style="list-style-type: none"> ❖ ECO & Project Manager 	<ul style="list-style-type: none"> ❖ Weekly monitoring ❖ Monthly reporting ❖ Immediate implementation of management actions

Associated Potential Impacts	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementing Impact Management Actions
❖ Dust	<ul style="list-style-type: none"> ❖ Safety inspections to ensure all workers are wearing protective gears during operation. ❖ Inspection to ensure access roads and site are sprayed. Maintain a complaint register that is made accessible to the locals 	<ul style="list-style-type: none"> ❖ ECO & Occupational Hygienist ❖ Project Manager 	<ul style="list-style-type: none"> ❖ Monthly monitoring and reporting ❖ Immediate implementation of management actions ❖ Monthly reporting on any non-compliances ❖ Daily monitoring
❖ Soil erosion and change in land capability	<ul style="list-style-type: none"> ❖ Ensure concurrent rehabilitation (backfilling and fertilisation/re-vegetation) is implemented throughout the life of the mine 	<ul style="list-style-type: none"> ❖ ECO & project Manager 	<ul style="list-style-type: none"> ❖ Monthly reporting
❖ Safety and hazards	<ul style="list-style-type: none"> ❖ Maintain an incidence register for any accidents or safety incidences 	<ul style="list-style-type: none"> ❖ ECO & Project Manager 	<ul style="list-style-type: none"> ❖ Monthly reporting

Associated Potential Impacts	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementing Impact Management Actions
Rehabilitation phase			
<ul style="list-style-type: none"> ❖ Recovery and restoration of the Natural Habitat ❖ Dust dispersal ❖ Rehabilitation of the disturbed and contaminated areas ❖ Re-vegetation ❖ Removal of all mobile infrastructure on site 	<ul style="list-style-type: none"> ❖ Inspection of rehabilitation on site and comparison of rehabilitation progress against the rehabilitation plan ❖ Continuous monitoring of rehabilitation process and objectives 	<ul style="list-style-type: none"> ❖ ECO & Competent Authority ❖ Safety officer /Occupational hygienist 	<ul style="list-style-type: none"> ❖ Annual inspection and reporting ❖ Monthly

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

Performance Assessment audits are to be conducted as a requirement of EIA Regulations 2014 (as amended). An independent EAP should be appointed to audit the performance on activities proposed in the BAR and EMPr monthly.

10. Environmental Awareness Plan

An environmental control officer will undertake awareness of different environmental aspect and will train the employees on how to deal with emergency situations and how to remediate such emergencies.

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

The environmental control officer will have monthly meetings to conduct environmental awareness with all the employees. There will also be a monthly environmental topic of which the notices will be pasted at the site office for the employees to see every morning when clocking in.

12. Manner in which risks will be dealt with to avoid pollution or the degradation of the environment.

All employees must be provided with environmental awareness training to inform them of any environmental risks which may result from their work and the way the risks must be dealt with to avoid pollution or the degradation of the environment. This should be in conjunction with the implementation of the EMPr.

13. Specific information required by the Competent Authority

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

Afli Exploration 3 (Pty) Ltd will update and review the quantum of the financial provision on an annual basis. In addition, formal monitoring and performance assessment reviews of compliance will be undertaken annually.

14. Undertaking

The EAP herewith confirms.

- a) the correctness of the information provided in the reports
- b) the inclusion of comments and inputs from stakeholders and I&APs;
- c) the inclusion of inputs and recommendations from the specialist reports where relevant; and
- d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected. parties are correctly reflected herein.



Signature of the environmental assessment practitioner:

Joan Consulting (Pty) Ltd

Name of company:

May 2023

Date:

-END-

Reference

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