

BASIC ASSESSMENT REPORT

For the proposed Mining of Stone Aggregate on Portion of The Farm Synderfontein
21, Magisterial District of Beaufort West In The Western Cape Province.

DMRE Ref No: WC19/1/3/1/04MP

Prepared by:



LWETHUMA
Environmental Consultants
Inspired by sustainable development

..... *Inspired by Sustainable Development*

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July 2026



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT and ENVIRONMENTAL MANAGEMENT PROGRAMME

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

MOOLMAN QUARRY

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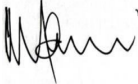
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1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2008 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 environmental”.

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 Regulation, 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 been 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 application 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.

2. OBJECTIVES 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; and
 - (iii) identify residual risks that need to be managed and monitored.

ABBREVIATIONS

DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
DMRE	Department of Mineral Resources & Energy
DKPE	D.K. Pringle Earthworks
LEC	Lwethuma Environmental Consultant
NEMA	National Environmental Management Act, 107 of 1998
MPRDA	Mineral and Petroleum Resources Development Act, 28 of 2002
ECO	Environmental Control Officer
EMC	Environmental Monitoring Committee
DBAR	Draft Basic Assessment Report
FBAR	Final Basic assessment Report
EMP	Environmental Management Plan
PM	Project Manager
RE	Resident Engineer
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EO	Environmental Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EPRP	Emergency Preparedness and Response Plan
HSE	Health, Safety and Environment
I&AP	Interested and Affected Party
ISO	International Standards Organization
NFA	National Forests Act (Act 84 of 1998)
MPRDA	Mineral & Petroleum Resources Development Act
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NEMAQA	National Environmental Management: Air Quality Act (Act No. 39 of 2004)
NEMBA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act (Act No. 59 of 2008)
NWA	National Water Act (Act No. 36 of 1998)
GKLM	Greater Karoo Local Municipality
OHSA	Occupational Health and Safety Act (Act No. 85 of 1993)
SACNASP	South African Council for Natural Scientific Professions
SABS	South African Bureau of Standards
SANAS	South African National Accreditation System
SWMP	Storm Water Management Plan
TOPS	Threatened or Protected Species
GDP	Gross Domestic Product

EXECUTIVE SUMMARY

D.K. Prinlge Earthworks has applied for an Environmental Authorisation for proposed mining of stone aggregate and gravel within a 4.18ha area on portion of Farm Syndersfontein 21, magisterial district of Beaufort West District in the Western Cape Province, South Africa. The proposed project area is accessible through R381 towards Loxton. It is about 65 km north of Beaufort West CBD and about 45 km south of Loxton. Its central coordinates are Latitude -31. 824192, Longitude 22. 412269.

Lwethuma Environmental Consultant has been appointed to undertake the EIA process and facilitation of a mining permit application. The application has been lodged in terms of Section 27 of the Mineral and Petroleum Resources Development Act (MPRDA), 2008 (Act No. 23 of 2008) to the Department of Mineral Resources & Energy (DMRE), Western Cape Province (Western Cape Regional Department). See APPENDIX A: maps for the Regulation 2(2) plan for this proposed mining permit application.

In terms of the NEMA (Act 107 of 1998) and EIA regulations of 2014 as amended, the proposed mining activities triggers a Listed Activity 21 (a)(b) and Activity 27 of Listing Notice 1 (GNR 327), and the applicant cannot commence the proposed mining activity without an Environmental Authorisation for the mentioned listed activities. The purpose of the studies is to identify and assess all the possible impacts that may arise from the implementation of the proposed development and to find the most effective ways of enhancing environmental benefits and mitigating potential impacts to encourage sustainable development within the area.

Bomlingo seek to supply windfarm projects within the Beaufort West and the surrounding areas. An amount of 7 500m³ is estimated to be mined within the two years of the mining permit's existence. Given the anticipated volume of material to be mined and the current state of the quarry, it is unlikely that the mining may stretch towards virgin land. Therefore, no specialist studies were deemed necessary. The most common negative impacts associated with the proposed mining activity were amongst others;

- Alteration of Topography
- Dust emission
- Noise emission
- Loss of vegetation cover
- Visual impact

While typical positive impacts includes;

- Creation of employment opportunities for the locals,
- Increase of the District GDP,
- Increased local economic growth.
- Skills development for locals.

The Public Participation Process will be conducted in terms of chapter 6 of the EIA NEMA Regulation of 2014 promulgated in terms of the National Environmental Management Act 107 of 1998. The following activities will be undertaken;

- Publishing of newspaper on the Burger Newspaper.
- Erecting of site notices within the project site, entrance point along the N1.
- Notifying of landowner
- Notifying of neighbours & Lawful occupiers
- Public meeting with the Interested & Affected Parties.

The proposed mining activities will be undertaken over a period of two (2) years with an option to renew it annually for three consecutive periods. The proposed activity entails mining of stone aggregate and gravel commodity through open cast mining methodology. The scope of work will involve site establishment, drilling and blasting, excavation, crushing and screening stockpiling and dispatch to market. A site clearance will be undertaken by removal of vegetation cover and topsoil that will be stockpiled at a designated area to be utilised for rehabilitation process.

Potential risks and key issues identified will be based on consultation with I&APs, through an internal process based on similar projects, current state of the environment of the site, and a site visit. A summarised description of the surrounding land use is provided to ensure that all environmental aspects are highlighted. A description of the biophysical and social environment is also included in the report, to ensure that all potential risks and issues are taken into consideration in all phases of the proposed project.

All environmental data (i.e., surface and ground water qualities and quantities, topographical analyses, soil, vegetation, wetland, and geological conditions including socio-economic aspects) including the historic land uses that has been used in this report has been obtained through desktop studies and physical site assessment. Weather data was acquired from the Climate Data Online, 2018. The data accumulated and analysed is therefore deemed sufficient to gain a baseline indication of the present state of the environment.

The impacts that could arise during and after the proposed mining activities will be determined and ranked according to their significance. The findings and conclusions of this document (BAR and EMPr), which concerns assessment of environmental impacts and a programme for management of the impacts for the proposed mining activities at the Project site, was compiled in terms of the EIA Regulations of 2014 for review by interested and affected parties including the competent authority. Based on the desktop study in respect of impact assessment, several recommendations are already made to mitigate significant negative impacts as well as to maximize positive impacts that will result from the proposed project.

Upon completion of the mining operation, the permit holder will have to lodge an application for closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 28 of 2002. It is of crucial importance for applicant to secure a closure certificate as section 43(1) of the MPRDA, 28 OF 2002 states that "The holder of a prospecting right, mining right, retention permit or mining permit remains responsible for any environmental liability, pollution or ecological degradation, and the management thereof, until the Minister has issued a closure certificate to the holder concerned".

PART A
SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

3. CONTACT PERSON AND CORRESPONDENCE ADDRESS

3.1. Details of the EAP

Name of the Practitioner: McDonald Mdluli

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Fax No.: (086) 668 3192

E-mail address: info@lwethuma.com

3.2. Expertise of the EAP:

3.2.1. The qualifications of the EAP

Postgraduate Diploma in Social Impact Assessment

BSc Honours in Environmental Management

Bachelor of Environmental Sciences

ISO14001: Environmental Management System

3.2.2. Summary of EAP's past experience.

McDonald Mdluli have over 14 years experience in the field of Environmental Management. He started his career in private sector, where he spent two years working for consulting firm as a Junior Environmental Consultant. He later joined the public sector, where he spent over four years working for the then DMR as Environmental officer and later as an Assistant Director: Environment. McDonald is now managing an Environmental consulting firm focusing on Environmental Management and Archaeology.

4. LOCATION OF THE OVERALL ACTIVITY

Farm Name:	Portion of Farm Syndersfontein 21
Application area (Ha)	4.18Ha
Magisterial district:	Beaufort West
Distance and direction from nearest town	The proposed mining area is located 50km North of Beaufort West CBD and 45km of Loxton
21-digit surveyor general code for each farm portion	C00900000000002100000

The proposed Moolman Quarry is located about 55km north of Beaufort West and about 50km south of Loxton (Northern Cape Province). Coming from Beaufort West and driving through the De Jagers Mountain Pass, the site can be accessed by turning right from R381 towards Loxton, and it will be on the right hand side. its central coordinates are;

Longitude: 22.412269

Latitude: -31.824192



5. LOCALITY MAP

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

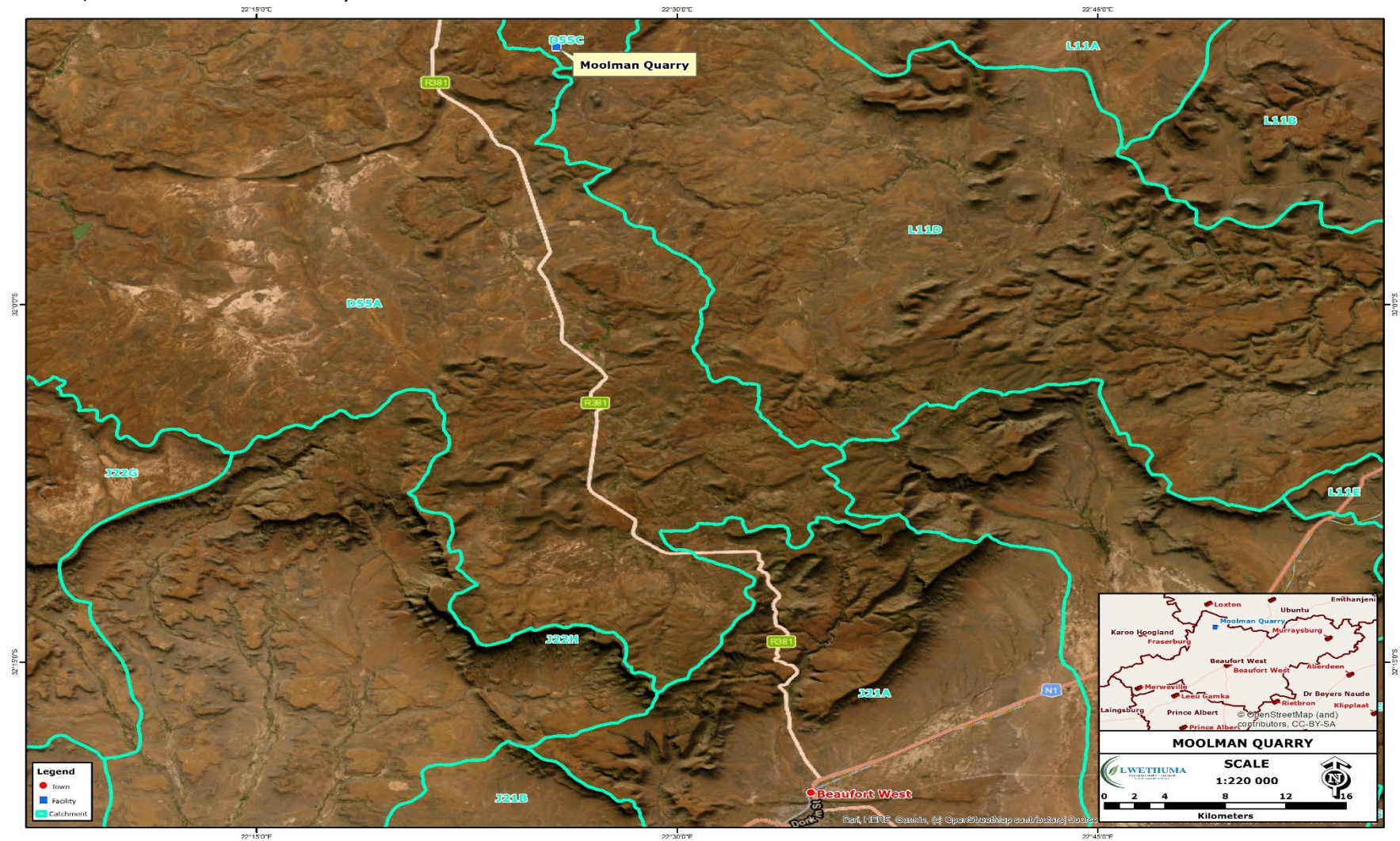


Figure1: Locality Map of Moolman Quarry

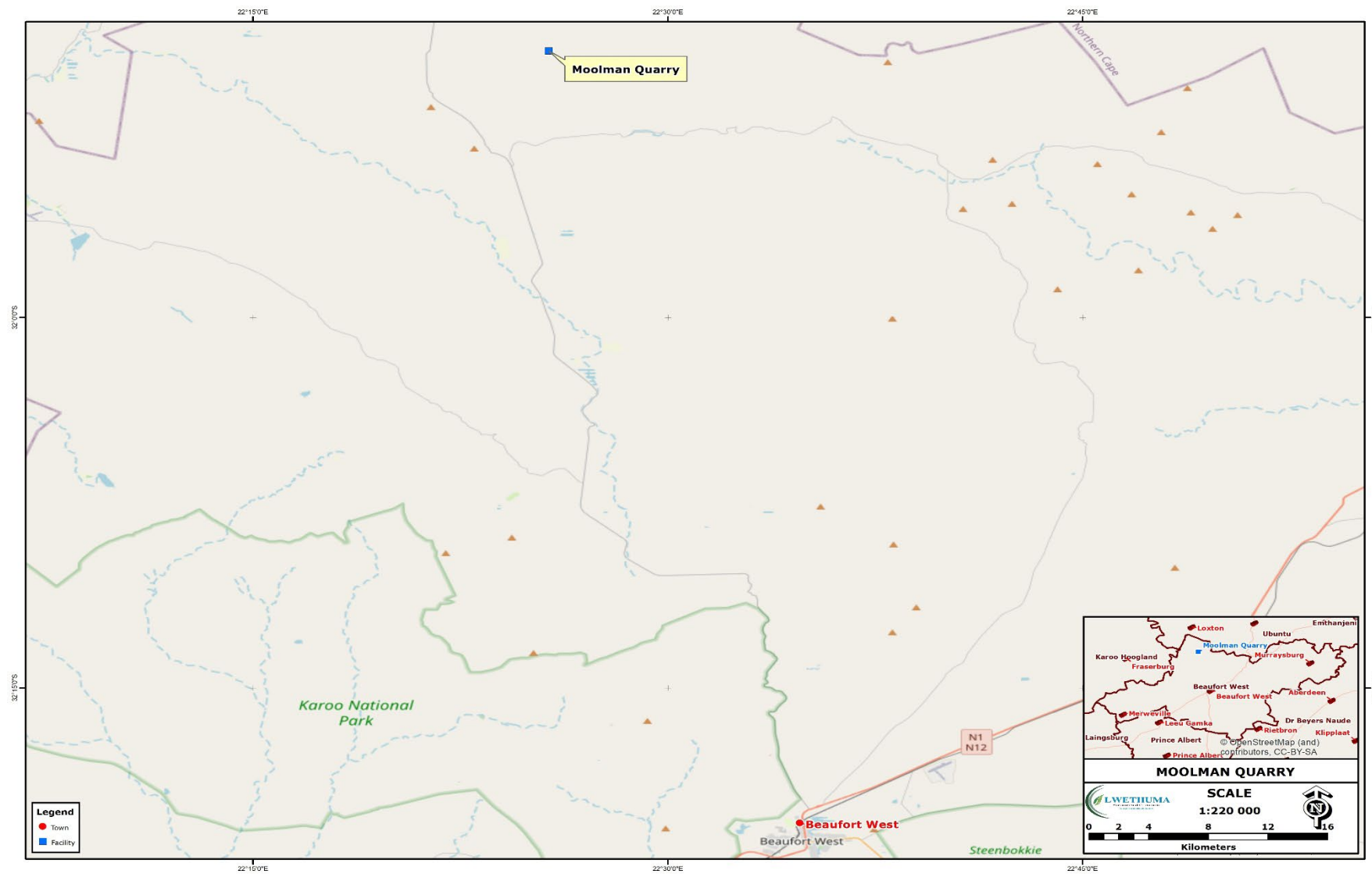


Figure 2: Topographic Locality Map of Moolman Quarry

6. DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

6.1. Listed and specified activities

Table 1: Listed and specified activities

NAME OF ACTIVITY (E.g. For prospecting – drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc. 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 m ²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)
Mining Permit: Site clearance Drilling and Blasting Excavation Crushing and screening stockpiling	4.96 Ha	X	GNR 327, LN1, Activity 21(a)(b)

7. DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN

D.K. Prinlge Earthworks proposes to undertake mining operation that will take place within a privately owned property, on portion of Farm Syndersfontein 21, within the magisterial district of Beaufort West District under Beaufort West Municipality, Western Cape Province. An open cast mining methodology will be employed where the following activities will be undertaken; site clearance, drilling and blasting, excavation, hauling of material, crushing and screening, stockpiling.

➤ Site clearance

Site clearance will be undertaken for site establishment as mining commences. This will involve vegetation clearance and removal of topsoil in accordance with the mine plan. Vegetation clearance will be limited to approved mine boundaries and search and rescue will be conducted to prior to this activity to protect and safe flora and fauna species of concern.

➤ Drilling and blasting

Before actual mining may commence, drilling blasting will take place to loosen the hard dolerite rock. Suitable blasting service provider will be brought in to ensure that a safe and risk-free blasting is undertaken.

➤ Hauling of material

Once the hard dolerite rock has been loosened through drilling and blasting, excavation will take place, by aid of excavator with large bucket and loader.

➤ Crushing and Screening

Mined material will be crushed through a jaw crusher and screened on a processing plant into various product sizes as per the market demand.

➤ **Stockpiling**

Ready material will be stockpiled according to grades for dispatch to market. Stockpiles of ready material will be kept at reasonable height and watered to minimise dust emission. For better management of stockpiles, hauled material will have to be regularly dispatched to market.

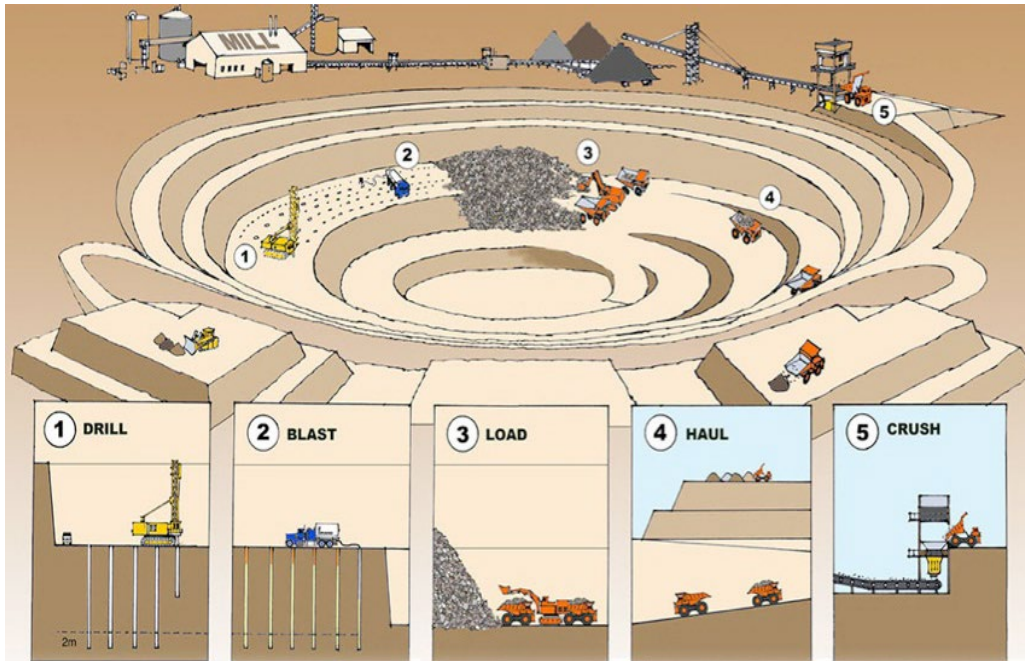


Figure 3: illustration of Open cast mining methodology to be adopted

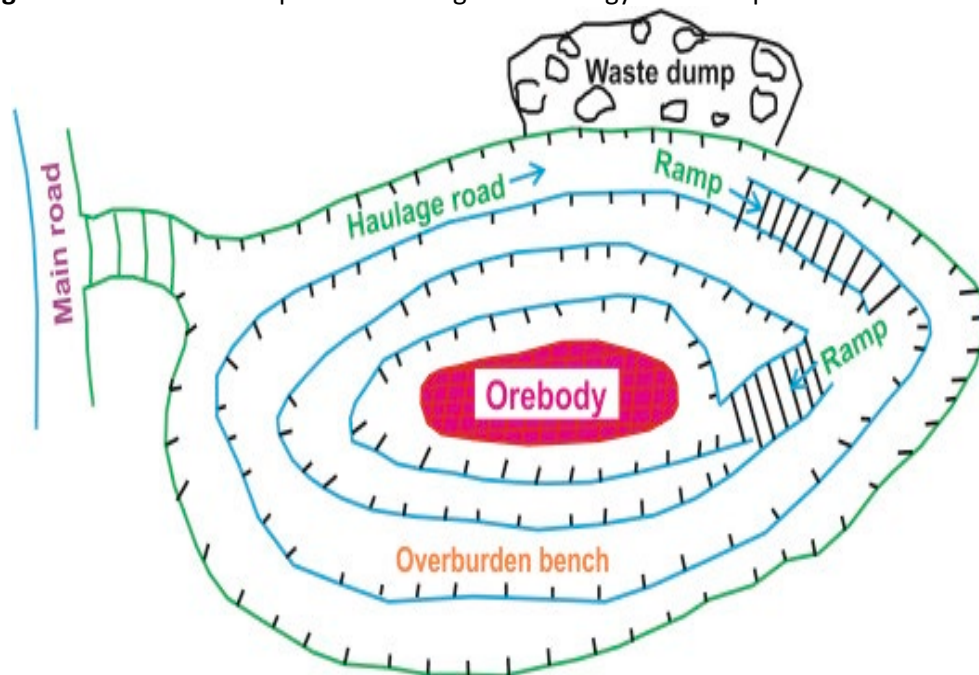


Figure 3: Typical mine layout of an open cast mining methodology

8. POLICY AND LEGISLATIVE CONTEXT

Table 2: Policy and Legislative context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT. (E.g., In terms of the National Water Act a water Use License has/ has not been applied for)
The Constitution of the Republic of South Africa (Act 108 of 1996) Section 2 of the Constitution of the Republic of South Africa (Act 108 of 1996) (CA) states that: "This Constitution is the supreme law of the Republic; law or conduct inconsistent with it is invalid, and the obligations imposed by it must be fulfilled." Section 24 of the CA, states that everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that: • prevent pollution and ecological degradation; • promote conservation; and • secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. • Section 24 guarantees the protection of the environment through reasonable legislative (and other measures) and such legislation is continuously in the process of being promulgated. Section 33(1) concerns administrative justice which includes the constitutional right to administrative action that is lawful, reasonable and procedurally fair.		The BAR was accordingly prepared, submitted and considered within the constitutional framework set by inter alia section 24 and 33 of the Constitution.
The National Environmental Management Act (107 of 1998) and the Environmental Impact Assessment Regulations, 2014: The overarching principle of the National Environmental Management Act 1998 (Act 107 of 1998) (NEMA) is sustainable development. It defines sustainability as meaning the integration of social, economic and environmental factors into planning, implementation and decision making so as to ensure the development serves present and future generations. Section 2 of NEMA (Act no 107 of 1989) provides for National Environmental Management Principles. These principles include:	NEMA and the associated EIA Regulations are directly relevant to this application for environmental authorization.	The NEMA and the EIA Regulations and associated Listed Activities identified are the key national legislation underpinning Environmental Authorizations in South Africa.

• Environmental management must place people and their needs at the forefront of its concern. • Development must be socially, environmentally and economically sustainable. • Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated. • Environmental justice must be pursued. • Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued. • Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle. • The participation of all Interested and Affected Parties (I&APs) in environmental governance must be promoted. • Decisions must take into account the interests, needs and values of all I&APs. • The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment. • Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law. • The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage. • The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment. The Environmental Impact Assessment (EIA) process to be undertaken in respect of the authorization process of the proposed mining operations is in compliance with the MPRDA, as well as the NEMA read with the Environmental Impact Assessment Regulations of 2017 (Government Notice No's R327, 325, 324 of 2017). The proposed development involves 'listed activities', as identified in terms of the NEMA and in terms of section 24(1),		
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the potential consequences for or impacts on the environment of inter alia listed activities must be considered, investigated, assessed and reported on to the Minister of Mineral Resources or to the relevant office of the Department responsible for mineral resources, except in respect of those activities that may commence without having to obtain an environmental authorisation in terms of the NEMA.		
Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002) Previously South African mineral rights were owned either by the State or the private sector. This dual ownership system represented an entry barrier to potential new investors. The current Government's objective is for all mineral rights to be vested in the State, with due regard to constitutional ownership rights and security of tenure. The MPRDA was passed in order to make provision for equitable access to and sustainable development of the nation's mineral and petroleum resources, and to provide for matters connected therewith. The Preamble to the MPRDA inter alia affirms the State's obligation to: • protect the environment for the benefit of present and future generations; • ensure ecologically sustainable development of mineral and petroleum resources; and • promote economic and social development. The aforesaid preamble affirms the general right to an environment provided for in section 24 of the Constitution (as set out hereinabove).	All matters relating to any mining activities must be authorized in accordance with the requirements of this Act.	The Mining permit Application was prepared and submitted according to the provisions of this legislation. The legislation will be heeded throughout the proposed mining operation and has been considered in the compilation of the EMP.
Integrated Development Plans Beaufort West is described as the economic, political and administrative heart of the Central Karoo District, serving as a key rest and service centre on the N1 corridor. It has the largest economy in the district, valued at R2,658.6 million (roughly R2.7 billion) in 2021. The economy is forecast to contract by 0.9% in 2023 before returning to growth of 0.8% in 2024. However, its IDP explicitly lists low economic growth, high unemployment, low skills levels, high poverty, high dependency ratios, high HIV/AIDS prevalence, poor revenue collection (non-payment by government facilities and businesses), ageing sewer infrastructure causing recurring blockages, inadequate refuse collection capacity, and a general lack of support for local economic development (LED) projects. It also notes agricultural infrastructure is weak — there is no pack house, only one agro-processing plant, and just six abattoirs in the whole municipal area.		The project is a mining application and therefore can be considered to be in line with the IDP which states mining as a business sector that could offer future employment.

It is notable that there is very high unemployment rate in the Beaufort West Municipal are and the majority of the people are very poor. Consequently, there is a serious reliance on various categories of government grants by both adults and children within the District area. New investment opportunities that will improve the livelihoods of the people by creating opportunities are needed. The following business sectors have potential to offer future employment: • Agriculture (Livestock farming, crop farming), Forestry, Tourism (Eco, Agricultural, Adventure tourism) • Wholesale and Retail, Construction and mining, Trade and business services, Catering, Accommodation. (Beaufort West Municipality 2022/2027 IDP).		
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) ("NEM: WA").	Waste generation must be well managed through the NEM:WA and Norms and Standards	The proposed mining operation will produce minimal waste and will not require a waste license.
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	The proposed mining activity will not trigger the NEMBA requirements as the vegetation cover already removed from previous mining. Additionally, the vegetation is classified as LEAST THRETNED, according to Mucina and Ruthford 20006.	Reintroduction of local vegetation during rehabilitation process is encouraged
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEM: AQA)	A minimal air pollution is anticipated to come from mining equipment's, such as excavator, loader, processing plant. The air quality of the project area will not be compromised.	Mitigation measures have been proposed in the EMP to protect air quality of the project area.
National Dust Control Regulations Promulgated in GN No. R.827 of 1 November 2013 in terms of one of the NEM: AQA, 2004.	A minimal air pollution is anticipated to come from mining equipment's, such as excavator, loader, processing plant. The air quality of the project area will not be compromised.	Mitigation measures have been proposed in the EMP to protect air quality of the project area.
National Water Act, 1998 (Act No. 36 of 1998)	Service of a suitable water service provider will be acquired for	The EMP emphasize protection of water resources.

	both potable water and for quarry use. The project is do not trigger any requirements of the NWA, i.e. section 21 C&I, AS there will be nor interference with the water resources.	
Western Cape Noise Control Regulations published in Prosocial Notice (PN) 200/2013 of 20 June 2013	Overall noise emission will be within the levels of the ambient level.	provide mitigation measure that will prevent excessive and unnecessary noise emission.
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	Protection of all artifacts of heritage significance. Palaeontologist confirmed less presence of significant artifacts.	Provide measures under impact rating of the EMP to mitigate and manage possible impacts on heritage resources.
Mine Health and Safety Act, 1996 (Act No. 29 of 1996)	Mining operation will be undertaken inline with the requirements of MH&S Act.	All MH&S requirements shall be met before commencement of mining operation.
Land Use Planning Act, 2014 (ACT No. 3 of 2014)	The proposed mining operation will be inline with the Land use planning act.	Mining operation to adhere to provision of the LUPA.
By-law on Municipal Land Use Planning for Beaufort West Municipality, published under Notice No. 21/2019	The proposed mining operation to operate in line with the municipal planning requirements and bylaws.	Mining operation to adhere to provision of the Municipal land use
Guideline on Need and Desirability, 2017	Need and Desirability of the proposed activity to be adequately addressed.	Need and Desirability of the proposed activity to be adequately addressed.

9. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

The (Census: 2011) describe Beaufort West is one of the poverty-stricken regions of the Western Cape characterised by high unemployment. This resulted from amongst other things, limited economic activities in the area, and woman and youth are the most affected. Introduction of a quarry will increase the anticipated employment opportunities that are to be provided by the proposed windfarm project in the area. The proposed quarry will ensure that construction material are sourced within a closer proximity to the windfarm project site, thus reducing environmental impacts associated with hauling of material such as traffic congestion, dust, noise and air pollution.

According to the DEA Guideline on Need and Desirability (DEA, 2017), the concept of ‘need and desirability’ relates to the *“nature, scale and location of the development being proposed, as well as the wise use of land”*. The concept of ‘need and desirability’ can be explained in terms of the broader meaning of its two components, need primarily referring to ‘time’, and desirability to ‘place’. It is acknowledged that ‘need and desirability’ are interrelated and the two components should be

considered in an integrated and holistic manner. The DEA Guideline (DEA, 2017) further states that the need and desirability of an activity should be evaluated against the principles of “*promoting justifiable economic and social development*” as well as the principles of “*securing ecological sustainable development and use of natural resources*” as set out set out in the bill of rights in the Constitution.

The overall need and desirability of the proposed development, in the context of developing renewable energy generation in South Africa and globally, is considered and described below.

In summary wind energy is desirable as it:

- Creates a more **sustainable economy** by promoting South Africa’s energy policy towards energy diversification.
- **Reduces the demand on scarce resources** such as water by promoting energy generating facilities which are less resource intensive.
- Assists in meeting international commitments to carbon emission targets in line with global climate change commitments.
- **Reduces pollution** by using ‘cleaner’ energy generating mechanisms and reducing the demand on carbon-based fuels.
- Promotes local economic development by creating jobs and promoting skills development.
- Enhances **energy security** by diversifying generation.

The proposed

Need:	
Consideration	Response / Motivation
Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority i.e. is the proposed development in line with the projects and programmes identified as priorities within the Integrated Development Plan (IDP)?	Yes. Renewable energy projects have been prioritised in strategies at various municipal scales in the area. At a provincial level, the 2014 Western Cape Provincial Spatial Development Framework (PSDF) (DEA&DP, Western Cape Provincial Spatial Development Framework, 2014) identifies the development of wind energy facilities as one of the focus areas for mitigating climate change impacts. The PSDF recognises the potential positive economic impact, but also mentions that wind farms could have negative impacts on scenic resources and that the possible impact needs to be investigated. At a District Municipal level, the 2019 Draft CKDM SDF recognises the Karoo region’s potential in terms of wind energy generation and states “ <i>The Karoo should leverage this asset to encourage Independent Power Producers to locate in the region, also making the Central Karoo a well-managed and desirable place to locate, if one is connected to this industry.</i> ” The CKDM IDP Revision 2018/2019 recognises investment in wind energy facilities as an opportunity through which significant economic and social benefits

	can be derived. Within the Beaufort West Local Municipality, renewable energy (wind and solar) have been identified as possible key contributors to the economy of the municipality. Both the 2013 BWLM SDF and the 2017/22 BWLM IDP specifically notes the wind resource of the area and supports the development of renewable energy generation facilities (wind and solar) in the area. The 2017/22 BWLM IDP lists renewable energy as major infrastructure projects that would sustain the economy, stating: <i>"Promote domestic and large wind and solar energy projects subject to appropriate guidelines and siting principles."</i> Additionally, an application for special departure from the existing landuse has been lodged with the local municipality. The special departure will be valid for the duration of the mining permit.
Should development, or if applicable, expansion of the town/ area concerned in terms of this land use (associated with the activity being applied for) occur at this point in time?	The proposed project aligns with national policy direction as well as contributing to South Africa being able to meet some of its international climate change obligations, by aligning domestic policy with internationally agreed strategies and standards as those set by the United Nations Framework Convention on Climate Change. At present South Africa's power supply is highly constrained. Any downtime (breakdowns or maintenance) may lead to the need for load shedding which has significant adverse effects for the South African economy and the safety and wellbeing of its citizens. There is a dire need for new, low carbon energy generation capacity that can be quickly deployed and linked into the national grid (with wind and solar being suitable options). This strategy is evident in the 2019 IRP whereby the largest portion share of new generation capacity between now and 2030 will be wind energy
Does the community/ area need the activity and the associated land use concerned (is it a societal priority)?	Yes. The CKDM 2019 Draft SDF states that the municipality must <i>"actively seek out green energy projects to be located in the region"</i>, noting that such investments are likely to have significant economic spinoffs for the region. Other District and Local Municipal planning documents i.e. SDFs and IDPs, note the

	economic growth and community benefits of renewable energy developments. The proposed wind farm would also directly benefit the local community. Firstly, it would be a source of income to the landowners of the properties on which the wind turbines are located and would improve the economic viability of the landowner's current farming operations (i.e. mainly low-density grazing). Secondly, it would also create direct and indirect job opportunities (with associated skills development and transfer) for the community (local, district/regional and provincial). Secondary economic benefits may include an increase in service amenities through an increase in contractors and associated demand for accommodation and other services. A percentage of the operational revenue of the project will be utilised to support local socio-economic development initiatives, due to the requirements in this regard of the REIPPPP. The local municipality will play a strong role in guiding how the funds are utilised, thus ensuring that relevant and pressing needs in the community will be addressed. The proposed development will contribute to the diversification of South Africa's energy generation sources and will provide energy delivery with increased reliability and sustainability, contributing to a provincial and national need.
Are there necessary services with appropriate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?	Access to the site will be from existing roads in the area with new internal roads will be constructed as part of the wind farm development. No municipal services (apart from the disposal of waste to waste sites and sewerage from conservancy tanks to waste water plants) will be required at the site, as the project contractor or appointed subcontractor/s will be responsible for providing the necessary services to the site during the construction and decommissioning phases. Electricity will be supplied to the site via existing Eskom lines (existing 22kV in the area), generators and/or on-site renewable energy

	installations (e.g. solar panels). Waste produced at the site will be collected and taken to an appropriate facility with sufficient capacity to accept the waste, for recycling, re-use, treatment or disposal (as appropriate). This will be done by the contractor in the construction phase and owner's team in operations phase and thus no municipal waste collection will be required at the site. Should any need for other services arise the relevant authority will be communicated with, and the necessary approvals/ agreements obtained before proceeding.
Are there necessary services with appropriate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?	Access to the site will be from existing roads in the area with new internal roads will be constructed as part of the wind farm development. No municipal services (apart from the disposal of waste to waste sites and sewerage from conservancy tanks to waste water plants) will be required at the site, as the project contractor or appointed subcontractor/s will be responsible for providing the necessary services to the site during the construction and decommissioning phases. Electricity will be supplied to the site via existing Eskom lines (existing 22kV in the area), generators and/or on-site renewable energy installations (e.g. solar panels). Waste produced at the site will be collected and taken to an appropriate facility with sufficient capacity to accept the waste, for recycling, re-use, treatment or disposal (as appropriate). This will be done by the contractor in the construction phase and owner's team in operations phase and thus no municipal waste collection will be required at the site. Should any need for other services arise the relevant authority will be communicated with, and the necessary approvals/ agreements obtained before proceeding.
Is this development provided for in the infrastructure planning of the municipality, and if not, what will the implication be on the infrastructure planning of the municipality (priority and placements of services)?	Yes. Although the proposed project is not specifically mentioned in the municipal planning reports, reference is however made to renewable energy generation projects and growing this sector within the CKDM's jurisdiction. The CKDM's IDP recognises that national and provincial governments have

	prioritised renewable energy developments to supplement the national grid. The economic and social benefits associated with employment of renewable energy development are noted in both District and Local Municipal planning documents and forms part of the Municipal strategies and policies to create a sustainable municipal area. The proposed development will have little bearing on the infrastructure planning of the municipality. Water will be sourced from licenced boreholes and electrical services required for the construction of the project will be via existing Eskom lines (existing 22kV in the area), generators and/or on-site renewable energy installations (e.g. solar panels), and apart from trucking waste to licenced waste sites and sewerage from conservancy tanks to municipal waste water plants no additional municipal services are required for the proposed development. Should any other municipal services be required, these will be confirmed and agreed with the municipality prior to commencing. Should the municipality be unable to provide the
Is this project part of a national programme to address an issue of national concern or importance?	Yes. The establishment of the proposed project would maintain the national DoE mandate to ensure efficient supply of electricity to service the South African economy and society by augmenting electrical supply. Since 2015 South Africa has experienced serious energy constraints which act as a barrier to economic growth. The proposed development will promote the delivery of reliable and sustainable energy to the national grid and therefore contribute to resolving an issue of national concern. Moreover, the project would contribute towards meeting the national energy targets as set by the DoE, of which a share of all new power generation being derived from IPPs. The 2019 Integrated Resource Plan (IRP) developed by the DoE for the 2010 to 2030 period aims to achieve a <i>“balance between an affordable electricity price to support a globally competitive economy, a more sustainable and</i>

	<i>efficient economy, the creation of local jobs, the demand on scarce resources such as water and the need to meet nationally appropriate emission targets in line with global commitments”.</i> The final IRP provides for an additional 20,409 MW of renewable energy in the electricity mix in South Africa by 2030. Furthermore, the National Development Plan (NDP) proposes to create 11 million jobs and grow the economy at an average rate of 5.4% per annum by 2030. In respect of renewable energy, the NDP seeks to ensure that half of the new future generation capacity comes from renewable energy sources. It also recognises the importance of the transition to a low carbon economy. As such the NDP suggests the following modified from (Greening the South African Economy: Scoping the issues, challenges and opportunities, 2016, p. 199): • Supporting carbon budgeting. • Establishing an economy wide price for carbon by 2030 complemented by energy efficiency and demand management interventions. • Support a target of 5 million solar water heaters by 2030. • Implementing zero emission building standards that promote energy efficacy. • Simplifying regulatory regime to encourage renewable energy, regional hydroelectric initiatives and independent power producers (IPPs). The project will also contribute toward South Africa’s transition to low carbon economy and its commitments to under the Paris Agreement.
Do location factors favour this land use (associated with the activity applied for) at this place?	Yes. The site is very favourable from a reliable wind source perspective. The location favours this land use also based on the ability of wind energy to operate in conjunction with farming (mainly natural grazing) which is the current main land use on site; the support of the landowners concerned; being situated a long way from the Karoo National Park and its proposed expansion plans as well as various economic considerations which include the feasibility of the project in terms of financial

	and technical perspectives. However, the changes in the visual (scenic) environment could also impact the local tourism industry which is an important contributor to the economy in this area. Visual and socio-economic specialist assessments have considered the impact to the tourism industry (refer to Section 7.12 and 7.8) and have found the impact to be of minor to moderate (negative) significance. The ecological sensitivity of the site has been considered in detail through a screening and iterative design process detailed in Section 5.1 of this report and various site assessments. The environmental Screening Phase investigated the environmental sensitivities of the site and the possible impact on the receiving environment as a result of the proposed development. This screening process allowed for the design of an optimised, site specific, wind farm layout which can be assessed in the EIA Phase. Unacceptable locations within the site have been identified through these assessments and the layout determined have been informed by the findings. Refer to Section 7 for a description of the baseline environment and potential impacts as identified by the various specialists.
Considering the socioeconomic context, what will the socio-economic impacts be of the development (and its separate elements / aspects), and specifically also on the socio-economic objectives of the area? Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programmes?	Yes. According to the Socio-economic Specialist Study (see Section 7.8 and Annexure C.6, the proposed project would have positive impacts related to GDP growth, limited local and preferential procurement (BBBEE, etc.), enterprise development, the creation of employment and skills development opportunities, which is compatible with the economic development vision of the CKDM and BWLM. The CKDM 2019 Draft SDF states that the municipality must <i>“actively seek out green energy projects to be located in the region”</i> noting that such investments are likely to have significant economic spinoffs for the region. Renewable energy developments would create direct and indirect job opportunities (with associated skills development and transfer) for the community (local, district/regional and provincial). The proposed development would thus create employment (temporary and full-

	time) and business opportunities in addition to skills development and on-site training.
What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	The potential for the proposed development to negatively impact on the natural, social and economic environments have been recognised and a number of investigative steps have been identified to ensure a good understanding of these potential impacts throughout the project's life cycle. The first step involved a screening exercise undertaken with specialists which resulted in a proposed layout which minimized impact to sensitive receptors as far as possible. The outcome of the EIA Phase has culminated in an EMPr that will be applicable to the pre-construction, construction, operational and decommissioning phases of the proposed project (see Section 3.9) to ensure that an environmentally and socio-economically sustainable "cradle to grave" approach is implemented. The EMPr will be managed and implemented as a living document, to allow the development project to adapt to and accommodate unforeseen environmental and/or social and/or political and/or economic changes and needs
Describe the positive and negative cumulative socioeconomic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area.	Please refer to Section 8 for information on anticipated cumulative impacts which was assessed in accordance with the methodology accepted in the Final Scoping Report. The project is situated away from highly populated areas so direct impacts are minimal. Employing between 160 and 200 people in the construction phase and 40-60 in the operational phase of the project is likely to have a moderate (positive) impact on the local socioeconomic environment. The socioeconomic specialist identified the following impacts (Van Zyl & Kinghorn, 2021): • Positive impacts on regional employment and household income associated with project activities and expenditure in all phases. • Negative impacts on surrounding landowners and communities arising from construction, increased crime, poaching, damage to infrastructure, litter, fire risk, dust, noise, safety concerns, deterioration of roads, etc.

	• Negative impacts on local communities associated with the influx of job seekers in the construction phase through increased alcohol and drug use, increased HIV and TB risks, prostitution and unwanted pregnancies, etc. • Negative impacts on tourism associated with visual impacts of the wind farm and increased traffic and disturbance in the construction phase.
Desirability:	
Considerations	Response / Motivation
Is the development the best practicable environmental option (BPEO) for this land/site?	The land use within the project site boundary is low density livestock farming (arid rangeland grazing) which, according to the agricultural specialist, will be able to successfully co-exist with the proposed wind farm. The specialist also stated that the wind farm infrastructure would have benefit to the local farmers by providing an alternative income source that would improve the economic viability of existing farming operations. During the Screening and Initial Design Phase a screening exercise with the project specialists was undertaken and No-Go areas were mapped and incorporated in the proposed layout. Refer to Section 5.1 for further detail. Further No-Go areas have been identified as part of the outcomes of the Pre-Application Scoping Phase, and associated PPP (refer to Section 5.2). No additional No-Go areas were identified as part of the Scoping or EIA Phases. There is suitable Riverine Rabbit habitat within the study area, but the presence of the Riverine Rabbit on site has not been confirmed even though a thorough camera trapping exercise has been undertaken to determine whether they are present on site (see the Terrestrial Ecology Specialist Assessment for more information). The project seeks to avoid and minimise impacts to the habitat and the rabbit (if present) and this has been factored into the design and mitigations.
How will this development use and/or impact on nonrenewable and renewable natural resources and the ecosystem of which they are part?	The screening and pre-application assessment processes were undertaken in support of the mitigation hierarchy advocated in NEMA to

	avoid and minimise impacts as the most preferred approach to mitigation. This process and the outputs were collaborative and involved a large multi-disciplinary team of environmental specialists, the EAP, the project engineers and Red Cap as the developer, most of which have extensive knowledge of the area and experience in wind farm assessments generally. The results from this exercise (i.e. the preferred project layout as documented Sections 3.3, 5.3 and 6) have guided the development of the layout assessed within this report to further the effect of potential negative impacts and enhance positive impacts to ensure an environmentally sensitive and sustainable project is taken forward. Please also refer to Table 4-1 for more information on why the proposed use of natural resources is considered to be the best use thereof.
Would the approval of this application compromise the integrity of the existing approved Municipal IDP and SDF as agreed to by the relevant authorities?	No. The proposed development aligns with the Municipal IDPs and SDFs which recognises the need for development of renewable energy and pursues economic development through renewable alternatives and promotion of energy efficiency. A focus group meeting was also undertaken with key stakeholders, including the municipalities, to involve them with the planning process and to better incorporate and communicate the stakeholder's views into the proposed development. No fatal flaws or issues compromising IDPs and SDFs have been raised by municipal representatives to date.
Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in Environmental Management Framework (EMF)), and if so, can it be justified in terms of sustainability considerations?	No. Currently there is no EMF adopted by the area. However, the Western Cape Biodiversity Spatial Plan (WCBDP), which sets out the land use objectives spatially, has been considered in the listed activities of the project. A preceding assessment phases and detailed specialist assessments have also been undertaken to identify environmentally sensitive areas and exclude identified No-Go areas from the proposed development footprint.
How will the development impact on people's health and wellbeing (e.g. in terms of noise,	Preliminary impacts were identified during the site assessment phases and the results have been incorporated in the impact statement. The

odours, visual character and sense of place, etc.)?	direct impacts associated with the proposed quarry are not deemed to be significant as the project is sited in a remote rural area with a very low and dispersed population. The socio-economic specialist has during the EIA phase of the windfarm, considered impacts relating to the influx of workers into surrounding towns and communities during construction phase and the risks for local communities including increases in drug and alcohol use, unwanted pregnancies, prostitution, crime, HIV and TB risks, etc. The specialist is of the opinion that these will be of minor (negative) significance given the secluded location of the project site.
How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage?	Visual specialists, a paleontologist and an archaeologist were appointed to undertake specialist investigations during the EIA phase of the windfarm. No-Go areas were identified during the screening and Pre-application Scoping Phase and have been avoided or minimized.
Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives / targets / considerations of the area	The approach developed for this project is based on the precautionary principles of NEMA and have aimed to avoid and minimise impacts as the preferred form of mitigation, as identified through spatial plans, specialist desktop and site-based research, and stakeholder engagement. However, all impacts cannot be avoided, and these were therefore assessed as part of the EIA phases of the project with the support of specialist assessments. To minimise, manage and remedy the potential negative residual impacts, and enhance the positive impacts, identified mitigation measures are proposed by specialists have been included in an Environmental Management Programme. The project area is largely an open rural setting with low levels of human impact. Sheep farming is the predominate land use and this will continue alongside the wind farm. As a result of this, the site does provide habitat for numerous fauna and serves an ecological function. Most of this function would remain largely unaffected by the wind farm with the notable exceptions pertaining to Avifauna and potentially the

	endangered Riverine Rabbit habitat. While the site is within the Riverine Rabbit range and includes habitat that appears to be suitable for Riverine Rabbit, the area of suitable habitat to the may be too small to support a viable Riverine Rabbit population and the presence of the Riverine Rabbit has not been confirmed on site via camera trapping. Nevertheless, the potentially suitable Riverine Rabbit Habitat identified have been deemed as No-Go areas and set aside from development of turbines OR Quarry. A recommendation has also been made that the project should contribute to a Faunal Monitoring Program to assist with monitoring and research of the fauna present on site (specifically the Riverine Rabbit and Mountain Reedbuck. The specialist has put out camera traps to establish whether there are rabbits on site and findings has been considered in the impact rating stamen of this report.
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10. MOTIVATION FOR THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVE.

This project site is located within private farm adjacent to the identified windfarm site. This will reduce hauling distance between material source and the windfarm. The proposed project aligns with national policy direction as well as contributing to South Africa being able to meet some of its international climate change obligations, by aligning domestic policy with internationally agreed strategies and standards as those set by the United Nations Framework convention on Climate Change. At present South Africa's power supply is highly constrained. Any downtime (breakdowns or maintenance) may lead to the need for load shedding which has significant adverse effects for the South African economy and the safety and wellbeing of its citizens. There is a dire need for new, low carbon energy generation capacity that can be quickly deployed and linked into the national grid (with wind and solar being suitable options). This strategy is evident in the 2019 IRP whereby the largest portion share of new generation capacity between now and 2030 will be wind energy.

Renewable energy developments would create direct and indirect job opportunities (with associated skills development and transfer) for the community (local, district/regional and provincial). The proposed development would thus create employment (temporary and full-time) and business opportunities in addition to skills development and on-site training.

11. FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVES WITHIN THE SITE.

A desktop survey was undertaken to assess the environmental sensitivity of the identified project site, which included running of a DEA screening tool. This was followed by the field survey to verify and confirm the desktop information. The site was found to be ideal for the proposed mining due to the abundance of the sought after commodity. Its secluded location from the households coupled with

the rocky outcrop topography, also allows the proposed mining to take place as it will result in less impacts for the environment and human beings.

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

The proposed mining will take place on portion of farm Syndersfontein 21, magisterial district of Beaufort West, in the Western Cape Province.

b. Type of activity to be undertaken;

Opencast Mining methodology will be undertaken. This method will enable optimum hauling of the stone aggregate through use of drilling and blasting technique, crushing and screening of material.

c. The design or layout of the activity;

See ANNEXURE B: Regulation 2(2) plan and mining plan for a detailed plan of the mine and its layout.

d. The technology to be used in the activity;

The stone aggregate commodity will be mined using diesel powered frontend loader.

e. The operational aspects of the activity;

It is a small-scale operation to employ at most 10 employees with one processing plant.

11.1. Details of the Public Participation Process followed

The PPP will be conducted in accordance with the NEMA EIA Regulations. The following steps were undertaken as part of public participation process:

a. Newspaper Advertisement

An advertisement was placed on the Die Burger newspaper to notified the public of the proposed activity and to invite all Interested and Affected Parties to make comments and / or raise concerns regarding the application.

b. Site notices

Site Notices were also placed at the site entrance.

c. Information Provided

A Background Information Document (BID) was sent to stakeholders as accompanying information for them to comment upon. The last page of such BID document contained a

reply form for them to comment upon to be sent back to the applicant's consultant. BID documents were sent to all I&APs including relevant state departments with invitation to send comments.

d. Notify I&APs

Notification letters were sent to the landowners, neighboring landowner and lawful occupiers, to notify them of the proposed development.

11.2. Summary of issues raised by I&APs

Table 3: Issues raised by I&APs

Interested and Affected Parties 2.7.1.1. List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
<u>AFFECTED PARTIES</u>					.
Landowner/s					
Dr. Michaeil Moolman	X	25 May 2026	The landowner do not have objection to the proposed mining operation, provided all mining operation are undertaken within the prescripts of the governing legislation and that all impacted areas are successfully rehabilitated post mining.	Comments were recorded and landowner was assured that all mining activities will take place in terms of the approved environmental authorisation and its conditions as well as the approved EMP.	APPENDIX C
Lawful occupier/s of the land					
Landowners or lawful occupiers on adjacent properties					
Beaufort West Farmers Association	X	No comments received,	No comments received	No response required	APPENDIX C
Municipal councillor					
Municipality					
Beaufort West Local Municipality					
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA etc.)					

Amathole District Municipality					
DWS					
ESKOM					
SANRAL: Southern Region					
ECPHRA					
EC Parks & Tourism Agency					
Department of Agriculture Forestry and Fisheries (DAFF)					
Western Cape Government					
Dpt. Roads & Public Works					
Communities					
Dept. Land Affairs					
Traditional Leaders					
Dept. Environmental Affairs					
Other Competent Authorities affected					
<u>OTHER AFFECTED PARTIES</u>					
<u>INTERESTED PARTIES</u>					

11.3. The environmental attributes associated with the alternatives.

11.3.1. Baseline Environment

(a) Type of environmental affected by the proposed activity.

❖ Topography

The project site is located on undulating slope area with presence of rock outcrops and a rocky hillslope on the east. It varies in elevation from about 1 664 in the northernmost corner to about 1 629 m at the rocky hillslope in the southernmost corner. The existing access road starting from the district road at an elevation of about 1 641 m crosses for the most part over undulating terrain. It crosses for the most part relatively flat terrain and increases moderately in elevation towards the project site.



Figure 3: Elevation profile of the proposed site

Source: Google 2023

❖ Climate

The quarry site falls within the arid Nama-Karoo biome of South Africa which is described as continental climate and is little affected by the ameliorating influences of the oceans. Temperatures ranges are extreme with temperatures below zero in winter and above 40°C in summer recorded annually (Mucina & Rutherford, 2006). The area falls within a summer rainfall area within rainfall typically peaking in March and has an average rainfall of 245mm. The average annual rainfall and temperature distribution is depicted in Figure 7-1 below (The World Bank Climate Change Knowledge Portal, 2020).

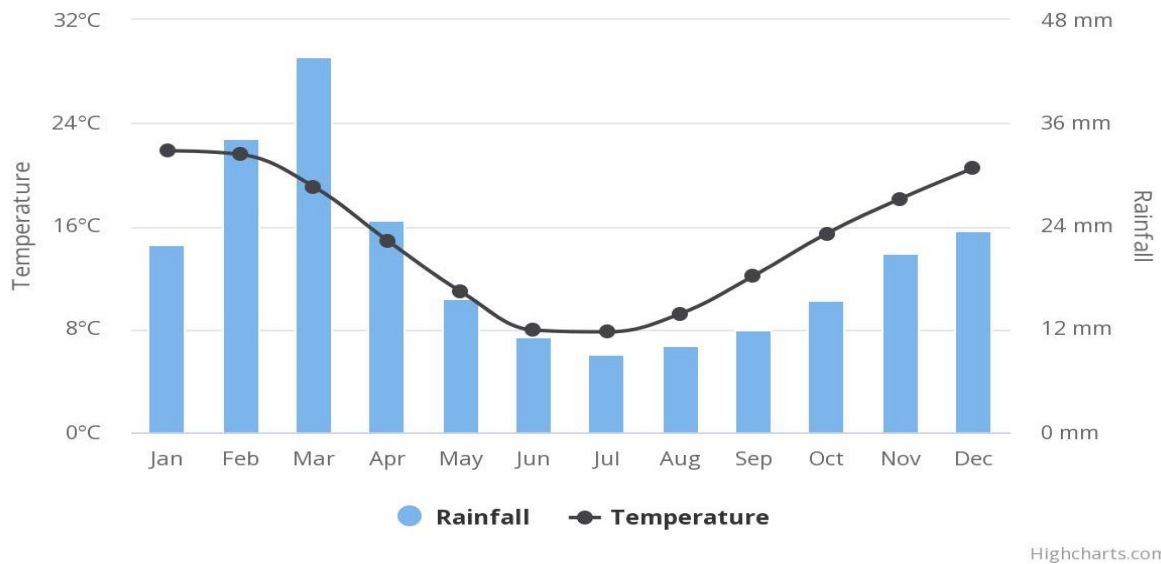


Figure 3: Average temperature and rainfall distribution for the Nuweveld North Wind Farm Site (1901-2016) (The World Bank Climate Change Knowledge Portal, 2020).

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Avg. Temp °C	24 °C	23.8 °C	21.8 °C	18 °C	14.8 °C	11.3 °C	11.1 °C	12.6 °C	15.6 °C	18.6 °C	20.5 °C	22.7 °C
Min. Temp °C	16.2 °C	16.6 °C	14.8 °C	11.4 °C	8.4 °C	4.9 °C	4.4 °C	5.4 °C	7.7 °C	10.6 °C	12.5 °C	15 °C
Max. Temp °C	31.7 °C	31.3 °C	28.8 °C	24.7 °C	21.6 °C	18.1 °C	18 °C	19.8 °C	23.2 °C	26.2 °C	28.3 °C	30.6 °C
Rainfall mm (in)	50	52	57	32	20	15	15	21	17	31	38	44
Humidity (%)	42%	44%	47%	49%	48%	51%	47%	41%	37%	39%	38%	40%
Rainy days (d)	6	6	6	5	3	2	2	3	3	4	4	4
Avg. Sun hours (hours)	11.2	10.5	9.6	8.8	8.4	7.8	8.1	8.6	9.4	10.1	11.0	11.4

Figure 4: Showing average Weather and average temperature of the project site.

The variation in precipitation between the months with the lowest and highest levels of rainfall is 42 mm, as observed. The average temperatures vary during the year by 12.9 °C. The month with the highest relative humidity is June (51.13 %). The month with the lowest relative humidity is September (36.91 %). The month with the highest number of rainy days is February (7.77 days). The month with the lowest number of rainy days is June (2.93 days).

❖ Flora

The vegetation of the project site is that of the Eastern Upper Karoo and characterized by low open shrubland. Grasses are more common in depressions and on sandy soils. The most dominant species included the shrubs *Chrysocoma ciliata*, *Dicrothamnus rhinocerotis*, *Euryops lateriflorus*, and graminoids by *Aristida* spp., *Eragrostis obtusa* and *Sporobolus ioclados*. Eastern Upper Karoo is listed as 'least threatened' in terms of ecosystem status, is not considered to be a sensitive vegetation type and covers most of the site. Within the study area, this is the dominant vegetation type and forms the matrix in which the other vegetation units are embedded. There is however a fairly large degree of variation in the structure and composition of Eastern Upper Karoo within the site. Three main variations have been identified as being present on the site. The plains wash shrubland represents areas of flat open plains, where there is some degradation resulting from overgrazing and where sheetflow has altered the ability

of these areas to capture and hold water. These areas are typically identified by the dominance of larger shrubs such as *Lycium cinereum* and the above average amount of bare ground visible. Although these areas are not considered sensitive in their own right, they are often adjacent to drainage features. The dominant form of Eastern Upper Karoo at the site occurs represents a typical dwarf karroid shrubland on shallow soils, usually derived from shale or weathered dolerite. This occupies the typical open plains which dominate the area and tend to be very homogenous and dominated by a handful of characteristic species such as *Pentzia globosa*, *Rosenia humulis*, *Asparagus capensis*, *Eriocephalus ericoides*, *Pteronia sordida*, and *Ruschia spinosa*. There are very few species of concern within this community and it is not considered sensitive. Finally, there is a community on deeper, usually dolerite-derived soils, which can usually be recognised by its slighter taller stature and more dense vegetation. It often has a high grass density than the more typical form on shallow soils, with *Stipagrostis ciliata*, *Stipagrostis obtusa*, *Enneapogon desvauxii* and *Tragus berteronianus* being relatively common. Other shrubs common in these areas include *Pteronia incana*, *Zygophyllum lichtensteinii*, *Aridaria noctiflora*, *Eriocephalus ericoides*, *Plinthus karooicus*, *Helichrysum luciloides*, *Felicia muricata* and *Ruschia spinosa*.

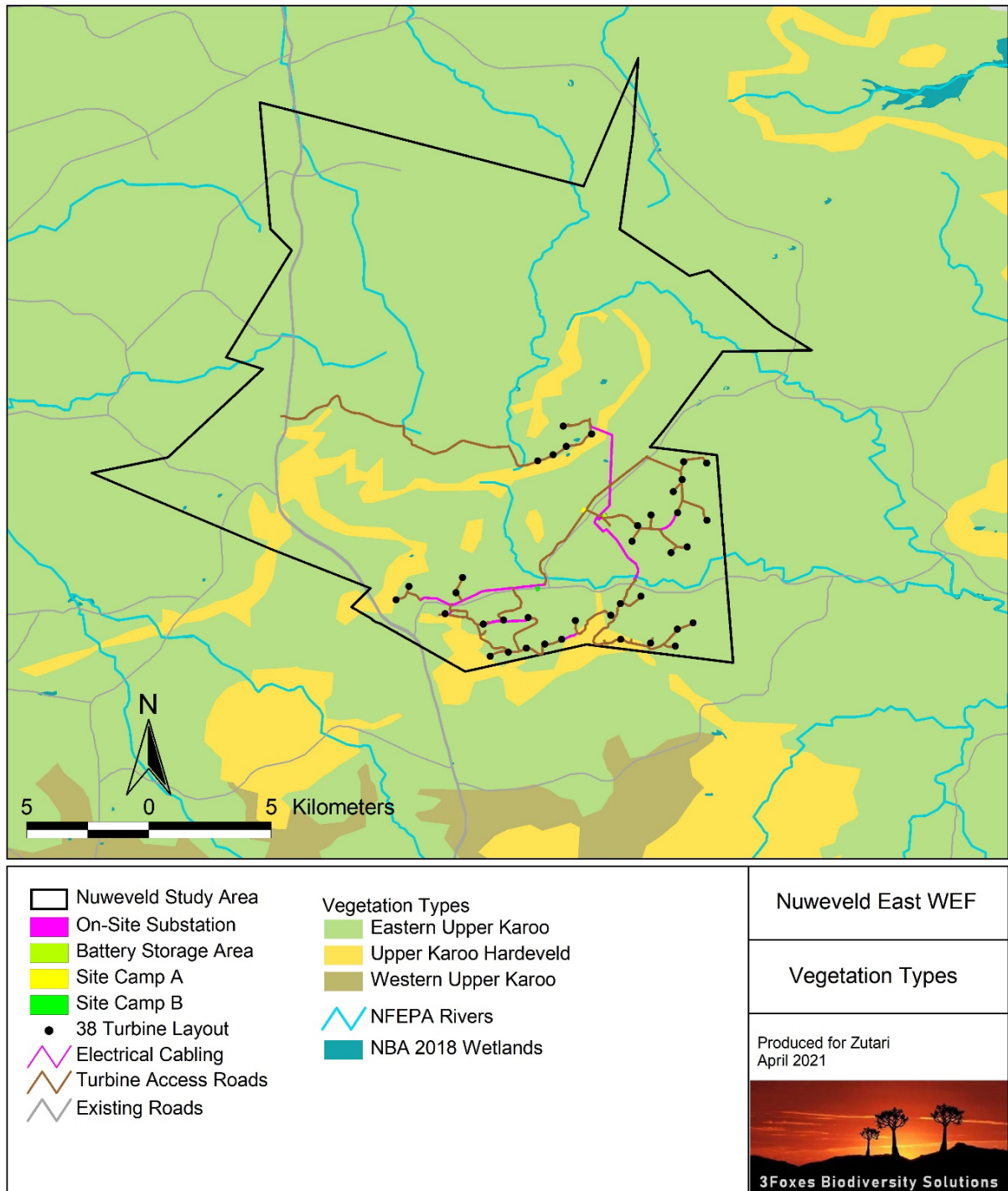


Figure 4: Vegetation of the proposed site from the national vegetation map (SANBI 2018 update) for the Nuweveld East Wind Farm and surrounding area (Todd, 2021).

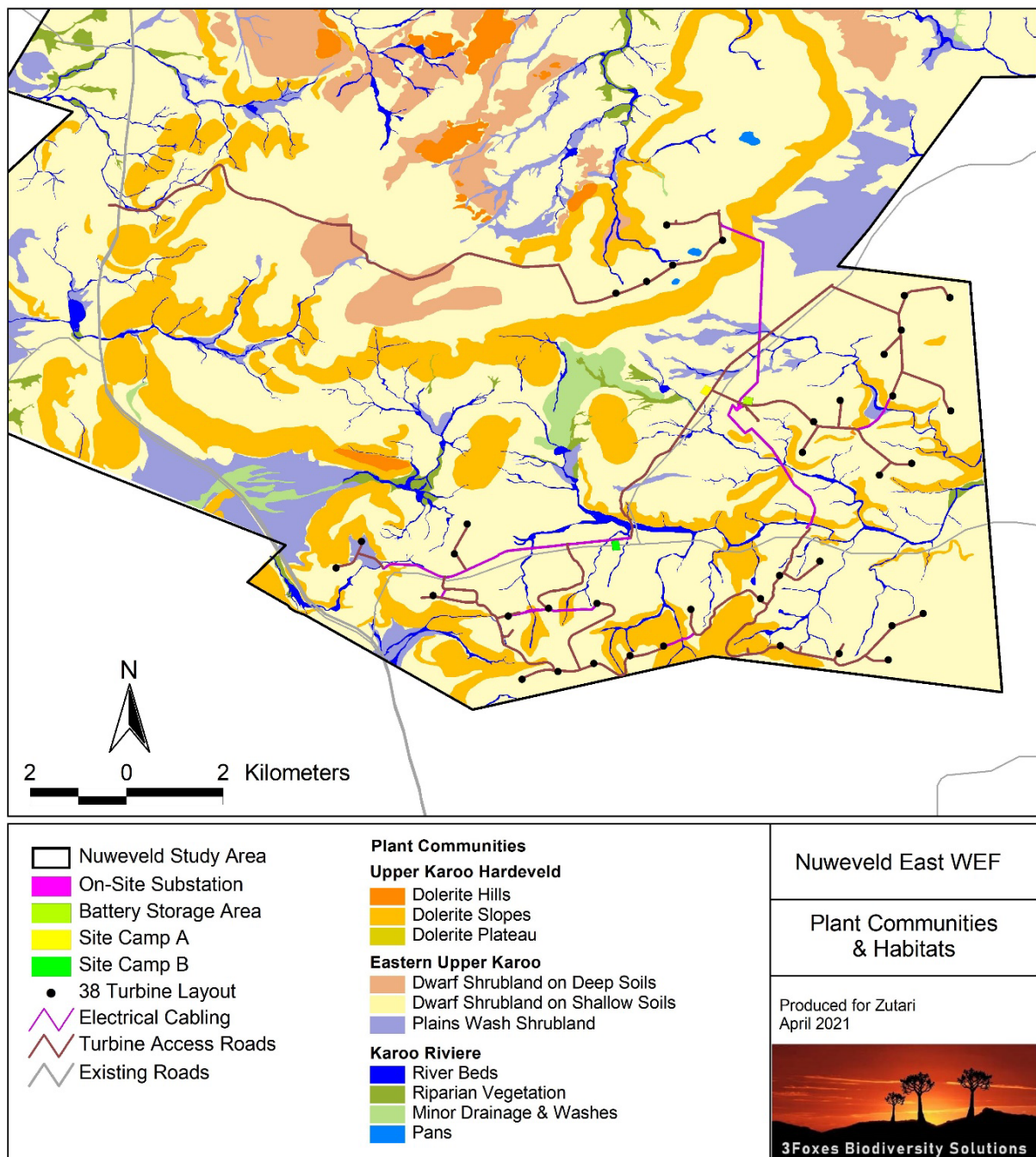


Figure 5: Detailed map of plant communities and habitats observed at the Nuweveld East Wind Farm site. This is considered to provide a more realistic and representative indication of the vegetation of the site than the VegMap, which is very coarse and does not adequately capture the heterogeneity of the site (Todd, 2021).



Figure 6: overview of the vegetation of the project site

❖ Fauna

The proposed mine area is within an active livestock farm currently in use by the lease to farm sheep. There are no wild animals identified onsite, however, as per the findings of the terrestrial assessment presence of wild animals may not be ruled out, given its area extent of 392.6857H. The mine area will be fenced to restrict access thus there will be no interference with the current livestock farming or wild animals. Vegetation disturbance will be limited to the 4.95Ha demarcated mining area and along the access road, leaving the rest of the faunal habitat intact. The integrity of the natural ecosystem and biodiversity will not be lost.

❖ Geology and soils

The underlying geology is mudstone, siltstone, shale and sandstone of the Beaufort Group of the Karoo Supergroup, with Dolerite intrusions being common across the site. The land type classification is a nationwide survey that groups areas of similar soil, terrain and climatic conditions into different land types. The project area extends over eight different land types. Soils are very similar across most of these land types, with a distinction between the higher lying, more mountainous areas, which cover most of the site, and the lower lying, flatter plains. Soils of the higher lying areas are predominantly shallow, well drained, sandy loams on underlying rock. Dominant soil forms are Mispah, Glenrosa and Hutton. Soils of the lower plains are shallow, sandy loams on underlying dense clay. Dominant soil forms are Swartland and Valsrivier.

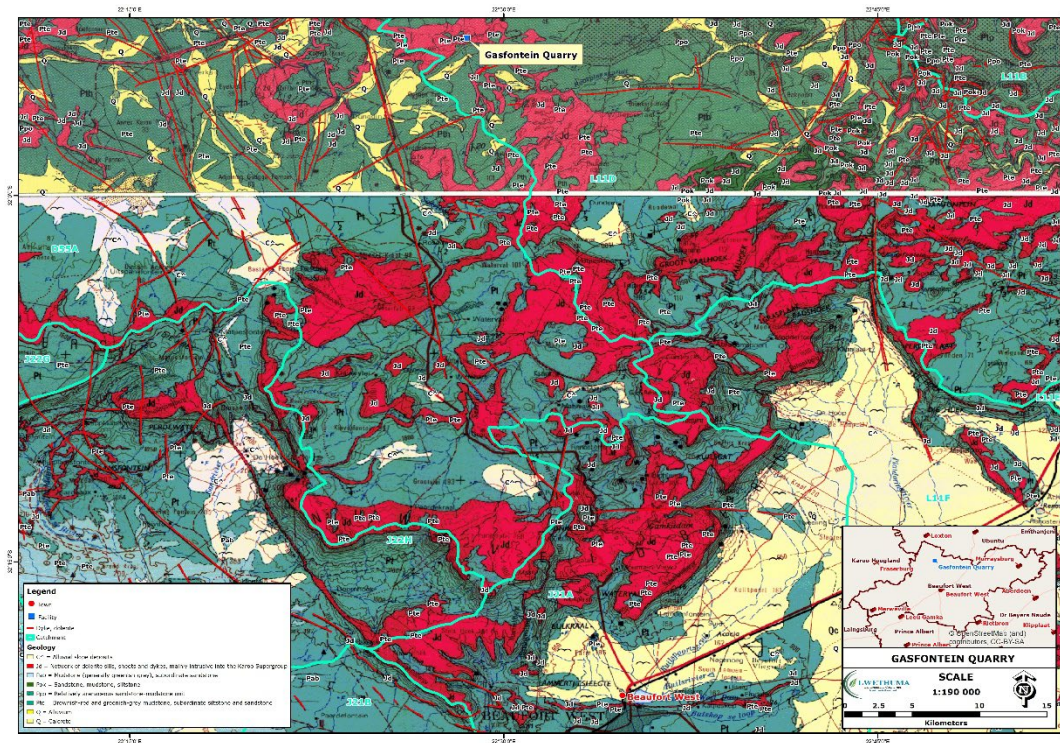


Figure 7: Geological Map of the project site

❖ Surface Water

Beaufort West region falls under the Breede-Gouritz Water Management Area and located on quaternary catchment L11D. The quarry site is located about 1.5km south of the Krom river. It is outside the 100m from a watercourse of regulated area in terms of the National water Act 36 of 1998.

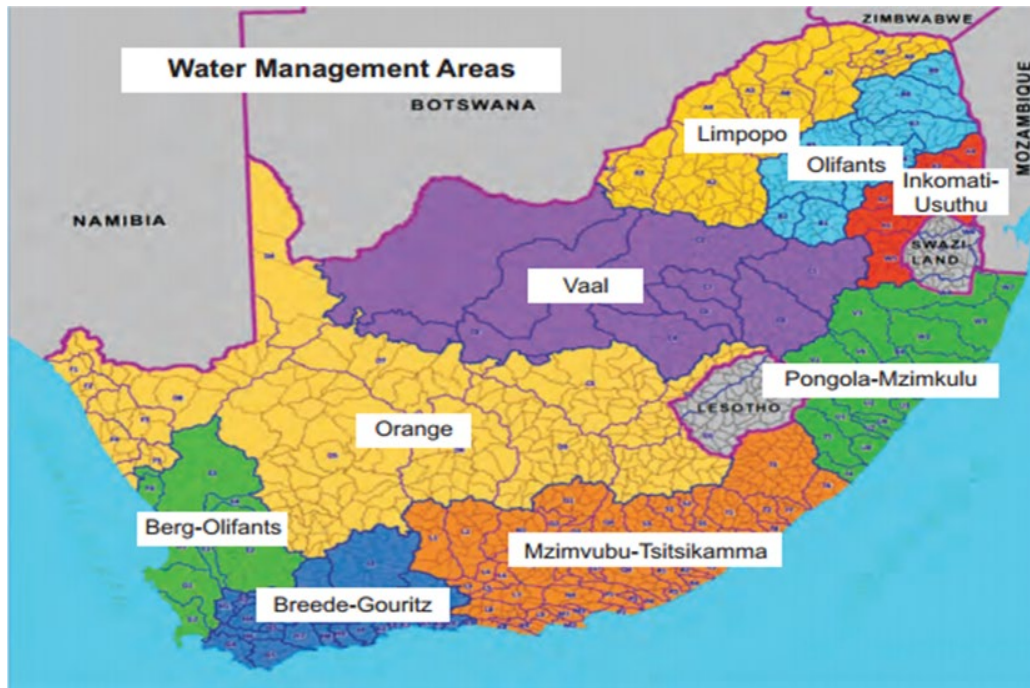


Figure 9: Water Management Areas of South Africa

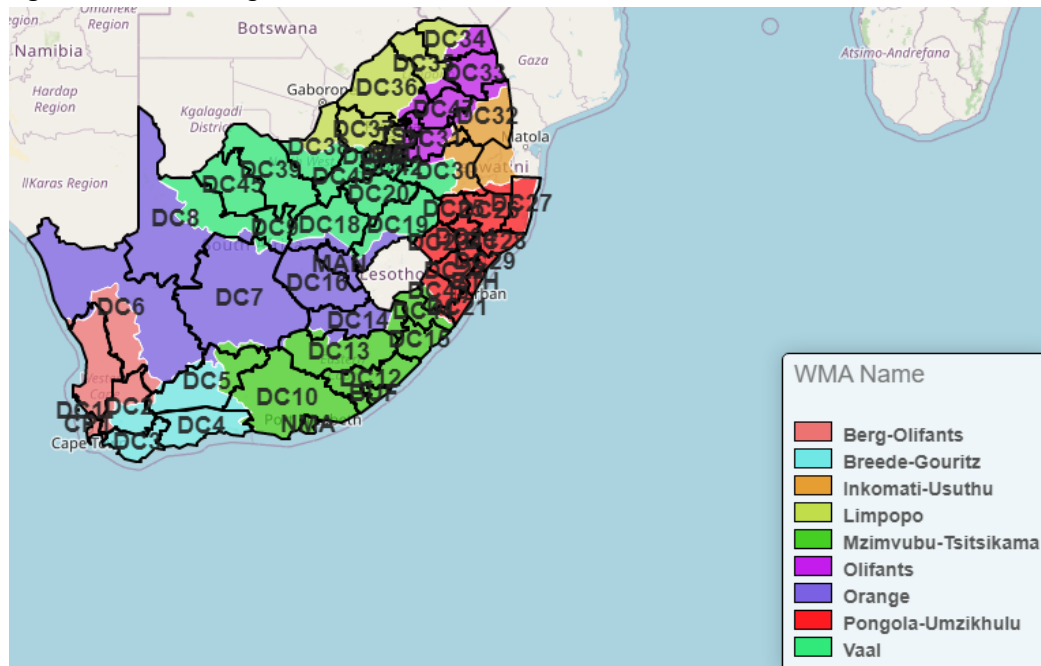


Figure 10: Water Management Areas of South Africa

❖ Groundwater

Beaufort West region falls under the Breede-Gouritz Water Management Area. It is located in the L11D quaternary catchment. The Nuweveldberge form a true continental watershed, with each side draining to different oceans. The Site is in the southeastern parts of the mountain range with water draining towards the Indian Ocean. The area falls in the upper parts of the L11D quaternary drainage region just north of the boundary of the L11F quaternary boundary. Non-perennial streams originate around the Site. Surface and groundwater flow is anticipated to be east northeast from the Site, joining the Krom River, a perennial river that is flowing eastwards then joins the Sout River that flows south.

❖ Population

According to Census 2011, the Afrikaans language is spoken by more than 40 000 people, i.e. 80% plus, of the people residing in the municipal area, with IsiXhosa spoken by about 5000 residents. In 2001, the number of Afrikaans speaking residents were 37 000 which is about 85% of the total population. The languages most spoken in the household are; Afrikaans (83.0%), IsiXhosa (13.1%) and English (1.9%). Afrikaans has remained the predominant language spoken. Based on the data as per the Community Survey (2016), the dominant language most spoken in households within Beaufort West Municipality is Afrikaans (83,0%) with 42 376 people speaking the language. The second language most spoken in the household in the municipality is IsiXhosa (13, 1%) with 6 712; and English being third with 977 (1, 9%) of persons speaking the language. The aforementioned language distribution has consistently been the trend since Census 2001.

Population group	Total
Black African	11447
Coloured	56455
Indian or Asian	274
White	3612
Other	1021
Unspecified	163
Total	72972

Figure 11: Population distribution of Beaufort West Local Municipality

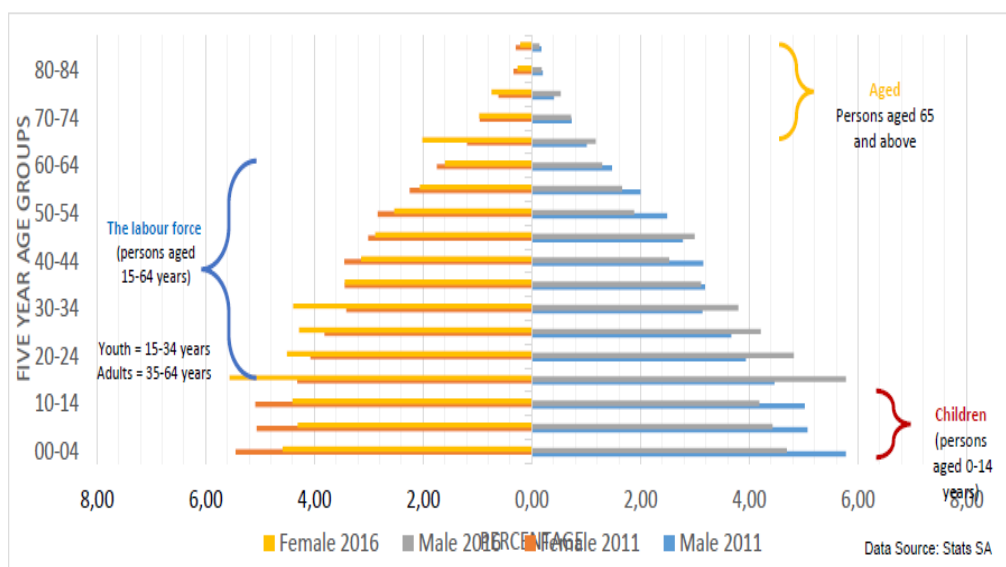


Figure 12: Population by age pyramid

❖ Level of education

The Beaufort West municipal area experienced fluctuations in education outcomes, recording a decline from 83.5 per cent recorded in 2021 to 79.0 per cent in 2022. This number should also be read in conjunction with the dropout rates as many students dropped out of the education system which will have an impact on the future prospect of finding jobs which will further worsen the youth

unemployment rate. Unfavorable outcomes have been recorded for Mathematical literacy and Physical Science with 56.5 per cent fail and 48.9 fail respectively in 2022. On the hand, English recorded a 100 per cent pass rate and Mathematics pass rates were better at 62.2 per cent.

❖ Socio-Economy

According to the Beaufort West Municipality IDP (2021/22) high unemployment rate in the municipality, which was at 24.5% (2011 Census); and the unemployment rate for young people is alarmingly high, which is mainly influenced by the lack of economic opportunities in the municipal area. We are still waiting for the release of the Census 2022 data to see whether this situation has worsened or whether there was decrease in the real unemployment rate.

Municipality	Employed			Unemployed			Unemployment Rate		
	2001	2011	2016	2001	2011	2016	2001	2011	2016
Central Karoo	13 520	17 332	No data	7 684	5 210	No data	36,2	23,1	No data
Beaufort West	9 106	10 932	No data	5 644	3 731	No data	38,3%	25,4	No data

Figure 13: Unemployment status of Beaufort West municipality

❖ Archaeo-Heritage

There are no resources of heritage importance identified on site. However, it is of importance to note that should any archaeological remains or artefacts be uncovered during the operational phase, all works should stop, and the matter be reported to Heritage Western Cape for further investigation. An archaeologist should be brought to site to perform salvage work.

(b) Description of the current land uses.

The current land use of this proposed site include agriculture and livestock farming and there is an access road in the area, it is surrounded by rural settlement.

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

The proposed site is within privately owned land that is being utilised for agriculture and livestock farming and there is no infrastructure on the site, the only environmental features is the open land with gentle slopes.

(d) Environmental and current land use map.

See figure 10 below:

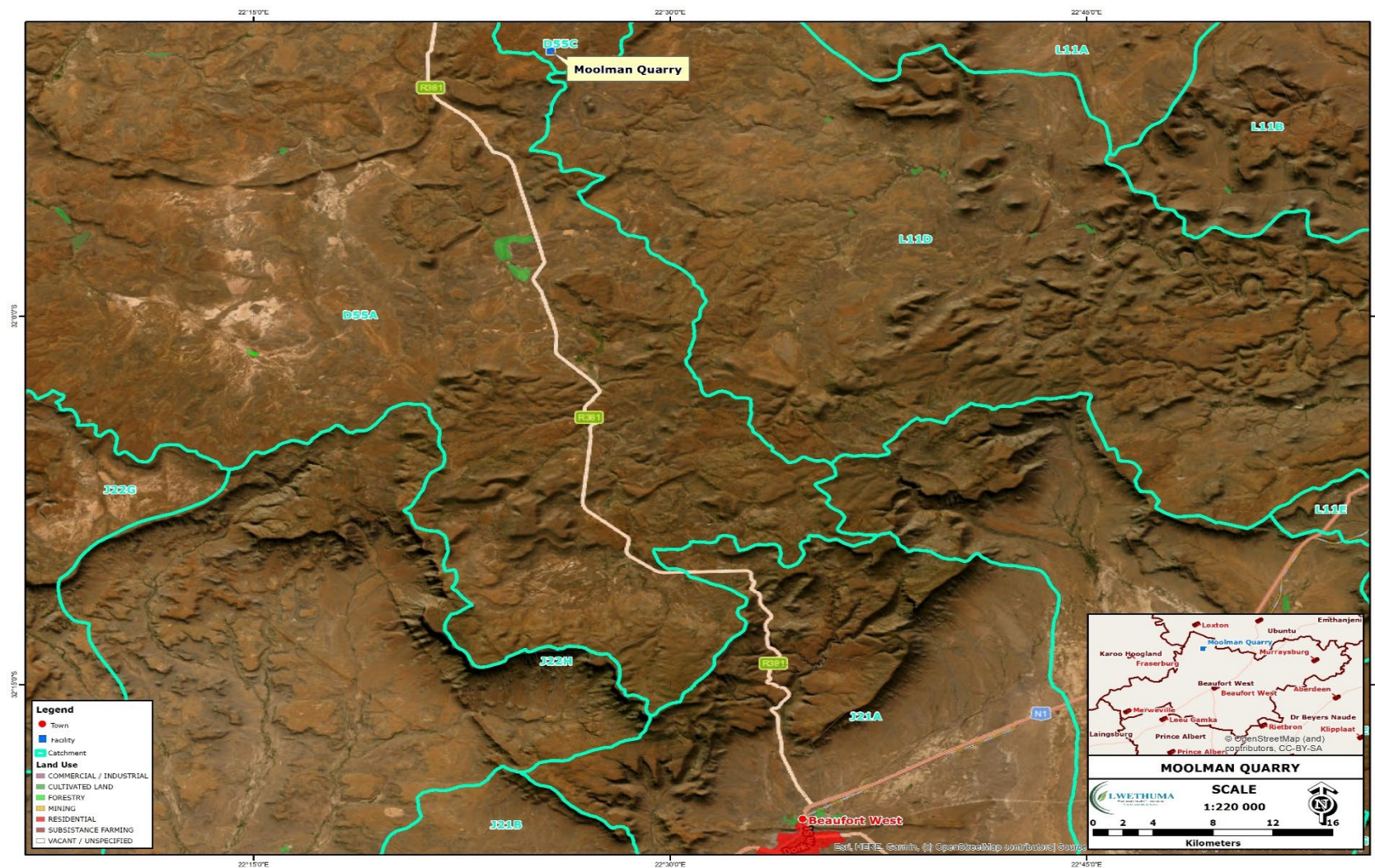


Figure 14: Current land use of the project site

12. METHODOLOGY USED IN DETERMINING AND RANKING THE NATURE, SIGNIFICANCE, CONSEQUENCES, EXTENT, DURATION AND PROBABILITY OF POTENTIAL ENVIRONMENTAL IMPACTS AND RISKS;

An impact is defined as any change in the physical-chemical, biological, cultural and/or socio-economic environmental system that can be attributed to human activities related to alternatives under study for meeting a project need. Assessment of impacts will be based on the Department of Environmental Affairs Guideline Document: EIA Regulations 2010. The significance of the aspects/impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts. The definitions of each of the Assessment Criteria are provided below:

i. Extent of impact :

A spatial indication of the area impacted (i.e., how far from activity the impact is realised).

ii. Duration of impact :

A temporal indication of how long the effects of the impact will persist, assuming the activity creating the impact ceases. For example, the impact of noise is short lived (impact ceases when activity ceases) whereas the impact of removing topsoil exists for a much longer period of time.

iii. Probability of impact occurring:

An estimated indication of the potential for an impact to occur.

iv. Intensity of the impact:

The magnitude of the impact in relation to the sensitivity of the receiving environment, taking into consideration the degree to which the impact may cause irreplaceable loss of resources.

v. Significance of an impact:

Considering the factors defined above, Significance is an indication of how serious a negative impact is anticipated to be and how beneficial a positive impact may be.

CATEGORY	CATEGORY	RATING	DESCRIPTION
Extent	Site only	1	Project site
	Local	2	Effects immediate surrounding areas
	Municipal	3	Effects municipal area
	Regional	4	Effects regional area
	National	5	Effects R.S.A.
Duration	Very short term	1	Less than 1 year
	Short term	2	1 to 5 years
	Medium term	3	5 to 20 years
	Long term	4	Longer than 20 years
	Permanent	5	Permanent
Probability / Likelihood	Improbable	0	Less than 30% chance
	Possible	1	30 to 50% chance
	Probable	2	50 to 75% chance
	Definite	3	Greater than 75% chance
Intensity	Very low	1	No effect on natural, cultural or social conditions
	Low	2	Marginal effect on natural, cultural or social conditions
	Moderate	3	Modification of natural, cultural or social conditions
	High	4	Temporary threat to existence of natural, cultural or social conditions
	Very high	5	Permanent Threat to existence of natural, cultural or social conditions
Significance	Very low	0 to 24	The Significance is a measurement of the product of the individual ratings of the Extent, Duration, Probability and Intensity.
	Low	25 to 47	
	Medium	48 to 94	
	High	95 to 188	
	Very high	189 to 375	

i) **Identified impacts:**

Direct and indirect impacts	
Description of Impact	Mitigation measures
Loss of vegetation cover: Mining of Stone aggregate commodity will result in vegetation clearance, within the demarcated mine area. Vegetation clearance will also result in potential loss of habitat for fauna species	Search and rescue exercise to be undertaken prior to the commencement of mining operation onsite. Clearance of vegetation to be limited only within the approved mine boundaries.
Loss of topsoil:	

The nutritious topsoil that holds vegetation will be lost through mining of stone aggregate commodity.	Topsoil is to be removed and stored at designated site for use during rehabilitation of the impacted environment.
Soil erosion: Mining of stone aggregate commodity will result in soil erosion from storm water	Mining to be limited at a maximum depth of not more than 2m and avoid steep slopes.
Noise pollution: Mining machineries to emit noise pollution during the life of the quarry mining operation.	All mining machineries onsite to be fitted with exhaust filters to reduce noise emission. All mining machineries to be kept at good condition in order to prevent excessive noise emission. Mining works to commence from 07:00am to 17:00pm, weekdays only.
Air pollution: Smoke coming from mining machineries to cause air pollution during the life of the quarry mining operation.	All mining machineries to be kept at good condition in order to prevent excessive smoke emission. Dust fallout must be monitored by an independent consultant, in compliance with the Mine Health and Safety Act.
Visual impact: Untidy mining site will result in visual impact, and loss of sense of place.	Housekeeping must be kept at high compliance level.
Littering of solid waste: Littering of solid waste to generate from workers onsite.	Waste collection bins must be placed at strategic positions within the mine area, storing of all generated waste onsite.
Hydrocarbon spillage: Hydrocarbon spillage will result in contamination of surface water through seepage.	All mining machineries onsite must be inspected for possible oil leaks timely. Drip trails to be made available for emergency onsite
Introduction of invasive alien species: Interference with the vegetation cover will give opportunity to invasive alien species.	Rehabilitation process must focus on introduction of local vegetation species.
Cumulative impact:	
Soil erosion: Ongoing soil erosion is imminent along the worked areas if managed poorly.	Mining area and access roads are to be kept at minimal size during operation and be rehabilitated once mining is complete.

13. IMPACT AND RISKS IDENTIFIED INCLUDING THE NATURE, SIGNIFICANCE, CONSEQUENCE, EXTENT, DURATION AND PROBABILITY OF THE IMPACTS, INCLUDING THE DEGREE TO WHICH THESE IMPACTS

Table 5: Impacts and Mitigation Measures

DESCRIPTION OF IMPACT	ACTIVITY	EXTENT	DURATION	PROBABILITY / LIKELIHOOD	INTENSITY	SIGNIFICANCE	MITIGATION / MANAGEMENT MEASURES
<u>Geology:</u>							
Extraction of mineral (s)	Hauling of material will negatively affect the geology of the area.	Site only	Permanent	Definite	Low	Low	Mining footprint to be limited within approved mine area. Opened pit to be back filled and seeded post operation phase.
<u>Topography:</u>							
Change in topography	As mining progresses from the current pit towards the east, topography of the virgin land will be altered.	Site only	Permanent	Definite	Low	Low	During mining, work will be carried out in such a way that slopes are not dangerously steep. No high or dangerously steep slopes will be created, and slope stability will continuously be monitored
Construction of Access road	Construction of access road will affect the topography as vegetation cover will be removed	Site only	Permanent	Definite	Low	Low	Access road to be rehabilitated post operation phase. Access road to be tilted and seeded with indigenous local grass species and.

DESCRIPTION OF IMPACT	ACTIVITY	EXTENT	DURATION	PROBABILITY / LIKELIHOOD	INTENSITY	SIGNIFICANCE	MITIGATION / MANAGEMENT MEASURES
<u>Soils:</u>							
Loss of soil fertility	Removal of topsoil will affect soil fertility.	Site only	Medium term	Probable	Low	Very low	The mining operation will not influence the soil potential as the fertile topsoil will be stockpiled for rehabilitation purposes and will not be tempered with.
Increase in soil erosion	Removal of vegetation cover will expose the soil to erosion.	Site only	Short term	Probable	Low	Very low	- A sound storm water management must be implemented. - Steep slopes must be stabilized. - Wind erosion must be monitored. - Road surfaces must be stabilized and maintained during the mining operations. - All vehicles must remain within the designated roads to prevent soil erosion.
<u>Flora:</u>							
Loss of vegetation cover/site clearance	The proposed mining area consist of a grassland biome and it's classified as Least Threatened .	Site only	Long term	Very low	Very low	Low	Search and rescue of threaten species must be undertaken prior to commencement of work onsite and be replanted off camp.

DESCRIPTION OF IMPACT	ACTIVITY	EXTENT	DURATION	PROBABILITY / LIKELIHOOD	INTENSITY	SIGNIFICANCE	MITIGATION / MANAGEMENT MEASURES
							- Top soil must be kept safe so it can be used for rehabilitation to re-establish indigenous vegetation. - Indigenous vegetation would be re-introduced through rehabilitation
Loss of Red Data, protected or sensitive flora species	Mining activities such as hauling and access road will negatively affect vegetation.	Site only	Long term	Definite	Low	Low	Topsoil must be kept safe so it can be used for rehabilitation to re-establish indigenous vegetation.
Removal of alien species	There are no alien species on site but further disturbance of the area would create opportunities for infestation by alien plant species.	Site only	Medium term	Possible	Low	Very low	- The mining area must be monitored for the occurrence of alien plant species on regular basis and such alien species must be continuously removed. - Rehabilitated areas must be monitored on a continuous basis for the occurrence of alien plant species until 90% of the natural vegetation cover is established.
<u>Fauna:</u>							
Loss of habitat	Loss of habitat will occur within the mine area.	Site only	Medium term	Possible	Low	Very low	Implement concurrent rehabilitation.

DESCRIPTION OF IMPACT	ACTIVITY	EXTENT	DURATION	PROBABILITY / LIKELIHOOD	INTENSITY	SIGNIFICANCE	MITIGATION / MANAGEMENT MEASURES
							Disturbance should be limited to minimum mining area. Indigenous plant species must be planted during rehabilitation to attract indigenous fauna back to the area.
Surface water resources:							
Contamination of surface water through spillage of diesel or hydrocarbon chemicals.	There won't be any impact to the surface water as the proposed mining area falls outside the outer edge of the 1:100 year flood line and/or delineated riparian habitat of the close by watercourse.	Site only	Very short term	Possible	Very Low	Very low	- Wetlands are considered no-go area and a 100m buffer should be maintained. - No disposal of waste water will be allowed in the nearby streams - The mine area and access road must be sprayed at determined interval to reduce dust emission. - Drip trays must be used during refueling of machineries on site
Contamination of surface water through waste / grey water	There won't be any impact to the surface water as the proposed mining area falls outside the outer edge of the 1:100year flood	Local	Long term	Probable	High	Very low	- Wetlands are considered no-go area and a 100m buffer should be maintained. - The mining operation does not utilize water in its process; hence no

DESCRIPTION OF IMPACT	ACTIVITY	EXTENT	DURATION	PROBABILITY / LIKELIHOOD	INTENSITY	SIGNIFICANCE	MITIGATION / MANAGEMENT MEASURES
	line and/or delineated riparian habitat of a watercourse. The mining operation does not use water in its process and no waste water will be produced.						wastewater would be generated on site. No significant impacts on the water courses are expected to occur.
Contamination of surface water because of inappropriate management of waste	There won't be any impact to the surface water as the proposed mining area falls outside the outer edge of the 1:100 year flood line and/or delineated riparian habitat of a watercourse.						- Waste must be stored, transported and disposed of at a registered waste disposal site. - Waste handling and storage areas must be restricted to a designated waste handling area. - Waste bins must be securely placed to avoid waste overflows.
<u>Groundwater resources:</u>							
Mining beyond water table	Mining may affect the aquifer should the water table get disturbed either by mine depth or from blasting.	Site only	Medium term	Possible	Low	Very Low	The mining operation is not expected to have any significant impacts on the aquifers. Mining depth will be less than 10m. a low to medium blasting technique will be employed.

DESCRIPTION OF IMPACT	ACTIVITY	EXTENT	DURATION	PROBABILITY / LIKELIHOOD	INTENSITY	SIGNIFICANCE	MITIGATION / MANAGEMENT MEASURES
Potential contamination of groundwater from leachate	Discharging of chemicals and hydrocarbon may affect the ground water through leachate	Site only	Medium term	Possible	Very low	Very low	Mining operation will not affect the ground water as maximum mine depth will be less than 10m.
Hydrocarbon contamination during mining operations	Diesel and oil spillages might occur in the event of a burst hydraulic pipe / hose.	Site only	Short term	Possible	Low	Very low	- Appropriate spill response kits and plans must be in place to react appropriately and timeously in the case of an accidental spill. - Wall/floor on the area around Diesel tank/pump must be bounded.
<u>Air Quality:</u>							
Increase in dust emissions	An increase in dust emission is likely to result from mining activities, and use of access road	Site only	Medium term	Probable	Very low	Very low	- Appropriate dust suppression measures such as wetting of the roads must be used to reduce dust on site. In addition, access road must be compacted with hard rock material to in order to reduce dust emission. - Dust fallout must be monitored by an independent consultant, in compliance with the Mine Health and Safety Act.

DESCRIPTION OF IMPACT	ACTIVITY	EXTENT	DURATION	PROBABILITY / LIKELIHOOD	INTENSITY	SIGNIFICANCE	MITIGATION / MANAGEMENT MEASURES
							Work must cease during extreme windy conditions to avoid excessive dust on site.
Increase in gaseous emissions	Increased gaseous emissions may result at a local level from vehicles operating at the site and from those moving to and from the site.	Local	Short term	Definite	Low	Very low	Vehicles must be maintained in a road worthy condition so as to limit the emissions to air.
Noise:							
Increase in ambient noise levels in the surrounding areas	Noise is generated from various activities being undertaken as part of the mining operation. For the duration of the mining operations, sources of noise resulting from activities at the quarry include loading, hauling and screening.	Site only	Medium term	Probable	Low	Very low	Equipment operating on site must be maintained in a workable condition to minimize noise emissions. Exhaust must be fitted with filters to reduce noise emission.
Visual impacts	The mining area is positioned in a remote setting in a farming area. The visual impact would be limited. This mine would therefore pose a minimal visual impact because of excavated	Local	Short term	Definite	Low	Very low	- A berm to be constructed to prevent visibility from the R617. - Unnecessary lighting must be avoided

DESCRIPTION OF IMPACT	ACTIVITY	EXTENT	DURATION	PROBABILITY / LIKELIHOOD	INTENSITY	SIGNIFICANCE	MITIGATION / MANAGEMENT MEASURES
	areas, stock piles and machineries on site						Machineries on site must be neatly placed
<u>Archaeological , cultural and heritage sites:</u>							
Loss of sites of archaeological, cultural or historical importance.	The area is highly disturbed due to previous mining activity and it is therefore unlikely for heritage artifacts to occur	Site only	Permanent	Definite	Medium	Low	Mining must continually monitor the mine workings for any encountering of archaeological findings
<u>Socio-economic:</u>							
<u>Positive Impacts:</u>							
Increase in employment / financial status of the local communities.	Permanent employment of approximately 10 people may occur increasing their financial status.	POSITIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE	No mitigation required
Benefits to the local economy	There is a high demand of stone aggregate and gravel in the area. The mine will therefore supply these building materials which will ensure lower transport costs to the customers. This is considered to have a positive impact on the local economy.	POSITIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE	No mitigation required

DESCRIPTION OF IMPACT	ACTIVITY	EXTENT	DURATION	PROBABILITY / LIKELIHOOD	INTENSITY	SIGNIFICANCE	MITIGATION / MANAGEMENT MEASURES
<u>Socio-Economic</u>							
<u>Negative Impacts</u>							
Safety and security for local populations	Upon mine closure the mine excavations could pose a safety hazard to local populations and animals if not well rehabilitated.	Site only	Long term	Possible	Low	Very low	• Rehabilitation must ensure that no dangerous excavations are left in an unsafe condition. • Access control to the mining area must be controlled. • No fires will be allowed on the mine area. • The required heavy vehicle signs must be erected at the access to the mining area as per the Road Traffic Act in order to ensure road safety.

14. 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

Advantages

The proposed quarry site was selected based on the availability of Stone aggregate commodity and proximity to the windfarm site. The proposed site has sufficient material to supply the construction phase of the Nuweveld windfarm. In terms of Beaufort West Local Municipality, IDP (2022-2023) it is stated that for the period 2006-2016 the GVA in the construction sector had the highest average annual growth rate in Beaufort West at 3.53%. The industry with the second highest average annual growth rate is finance sector averaging at 2.96% per year.

Notably, mining sector had an average annual growth rate of 4.05%. overall, a positive growth existed for all the industries in 2016 with an annual growth rate of 0.53% since 2015. Beaufort West Local Municipality, IDP (2024-2025) further indicates that Beaufort West Municipal area does not have a lot of mining activities, mining is operational in Beaufort West Ward 6 though at a minimum level. Therefore, this quarry mining will contribute towards increasing the mining operation in this area and increase the number of employments by creating job opportunities for people living in that area.

Disadvantages

The proposed quarry is associated with environmental and social impacts. It is therefore encouraged that the farm owner and the neighbouring farm owners work closely together with the applicant in order to overcome the negative impacts. All the identified environmental impacts can be well managed through implementation of Environmental Management Plan.

15. THE POSSIBLE MITIGATION MEASURES THAT COULD BE APPLIED AND THE LEVEL OF RISK

PLEASE SEE TABLE 5: IMPACTS AND MITIGATION MEASURES

16. MOTIVATION WHERE NO ALTERNATIVE SITES WERE CONSIDERED

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

No alternative sites were considered since the quarry site is located closer to the windfarm site, making it ideal to supply construction material for the windfarm. Environmental ethics informed the choice of the quarry site to ensure that environmental disturbance is within a limited area.

16.2. 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

The ranking of impacts / determination of significance is estimated consider the factors / criteria listed in the EIA Regulations 2010. The definitions of each of the Assessment Criteria are provided below:

i. Extent of impact :

A spatial indication of the area impacted (i.e., how far from activity the impact is realised).

ii. Duration of impact :

A temporal indication of how long the effects of the impact will persist, assuming the activity creating the impact ceases. For example, the impact of noise is short lived (impact ceases when activity ceases) whereas the impact of removing topsoil exists for a much longer period of time.

iii. Probability of impact occurring:

An estimated indication of the potential for an impact to occur.

iv. Intensity of the impact:

The magnitude of the impact in relation to the sensitivity of the receiving environment, taking into consideration the degree to which the impact may cause irreplaceable loss of resources.

v. Significance of an impact:

Considering the factors defined above, Significance is an indication of how serious a negative impact is anticipated to be and how beneficial a positive impact may be.

CATEGORY	CATEGORY	RATING	DESCRIPTION
Extent	Site only	1	Project site
	Local	2	Effects immediate surrounding areas
	Municipal	3	Effects municipal area
	Regional	4	Effects regional area
	National	5	Effects R.S.A.
Duration	Very short term	1	Less than 1 year
	Short term	2	1 to 5 years
	Medium term	3	5 to 20 years
	Long term	4	Longer than 20 years
	Permanent	5	Permanent
Probability / Likelihood	Improbable	0	Less than 30% chance
	Possible	1	30 to 50% chance
	Probable	2	50 to 75% chance
	Definite	3	Greater than 75% chance
Intensity	Very low	1	No effect on natural, cultural or social conditions
	Low	2	Marginal effect on natural, cultural or social conditions
	Moderate	3	Modification of natural, cultural or social conditions
	High	4	Temporary threat to existence of natural, cultural or social conditions
	Very high	5	Permanent Threat to existence of natural, cultural or social conditions
Significance	Very low	0 to 24	The Significance is a measurement of the product of the individual ratings of the Extent, Duration, Probability and Intensity.
	Low	25 to 47	
	Medium	48 to 94	
	High	95 to 188	
	Very high	189 to 375	

17. ASSESSMENT OF EACH IDENTIFIED POTENTIAL SIGNIFICANT IMPACT AND RISK

Table 6: Assessment of Potential Impacts

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).	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts) (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	SIGNIFICANCE if not mitigated	MITIGATION TYPE (modify, remedy, control, or stop) Through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. Modify through alternative method. Control through noise control Control through management and Monitoring through rehabilitation.	SIGNIFICANCE if mitigated
SITE ESTABLISHMENT & ACCESS ROAD CONSTRUCTION						
Access & haul road construction	Land degradation	-Air Quality -Fauna -Flora -Sense of place	Pre-Construction	Medium	Planning and design of access & haul roads to limit or prevent the destruction of vegetation and natural habitats. Access road to be rehabilitated post operation phase, to be tilled and seeded with local grass species post mining. Access road to be tilted and seeded with indigenous local grass species and.	Low
	Noise pollution	-Fauna -Sense of place	Pre-Construction	Medium	Mining machineries to be kept in good condition to reduce noise emission, all machineries to be fitted with filters to reduce noise emission.	Low
	Degradation of air quality	-Air quality -Sense of place -Fauna	Pre-Construction	Medium	Apply dust suppression. Seize work during extremely windy conditions Installation of fallout dust buckets and	Low

					quarterly monitoring. Access road to be compacted with hard rock material to reduce excess dust emission. Also success road to be sprayed at given interval to reduce dust emission.	
MINING						
Excavating	Soil erosion	-Geology -Sense of place -Fauna -Flora	Operational	High	Optimise mineral extraction through effective mine planning, which results in the reduction of geological waste and the minimisation of the footprint of the mining area. Conduct mining with concurrent rehabilitation, construction of benches not less than 1.5m width and slopes not more than 45°.	Medium
Excavating	Destruction of ecosystem functioning	-Sense of place -Fauna -Flora	Operational	Medium	Mine planning to conform with surrounding character of the area	Low
Excavating	Soil erosion	-Fauna -Flora -Geology	Operational	Medium	Topsoil should be removed to its full depth and stockpiled to preserve its functionality. To implement storm water management. A berm to be constructed on the hill of the quarry to prevent soil erosion.	Low
Excavating	Loss of biodiversity	-Sense of place -Fauna	Operational	Medium	To conduct search and rescue prior to disturbance of virgin area. Replant and relocate species that are threatened species in terms of the Red Data List.	Low

		-Flora			No hunting or collecting of firewood, medicinal herbs would be allowed	
Excavating	Loss of vegetation cover and natural habitat for fauna and flora species	-Sense of place -Fauna -Flora	Operational	Medium	Implement concurrent rehabilitation plan Apply a buffer zone of 100m around wetlands Removal of exotic vegetation Disturbance should be limited to minimum mining footprint	Low
TRANSPORT AND HAULING						
	Visual impacts	-Air Quality -Sense of place -Fauna and Flora	Operational	Low	Water spraying Seize work during windy conditions. To create a berm that will block the view of the mine from the R617.	Very Low
	-Noise pollution -Migration of animal species	-Sense of place -Fauna -Flora	Operational	Low	Equipment operating on site must be maintained in a workable condition in order to minimise noise emissions	Very Low
ABLUSION						
	Surface and groundwater contamination	-Surface and ground water -Fauna	Operational	Low	Portable ablution facilities to be provided and maintained.	Very Low

		-Flora			The contents will be discarded on a regular basis at the existing bio-digester septic tank and soak-away	
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18. SUMMARY OF SPECIALIST REPORTS.

This mining permit application is lodged to supply construction material for the proposed Nuweveld Windfarm project. It was identified based on its close proximity to the actual windfarm. The DEA screening tool flagged Aquatic Biodiversity theme very high and Animal species theme high. However, no specialist studies were conducted for this quarry application as the EIA study for the windfarm covered part of the quarry site therefore its specialist studies also covered the identified quarry site. The following studies were conducted for the windfarm project;

- Heritage Impact Assessment
- Palaeontology Impact Assessment
- Visual Impact Assessment
- Traffic Impact Assessment
- Terrestrial Impact Assessment
- Aquatic Impact Assessment
- Agricultural Impact Assessment
- Socio-Economic Impact Assessment

The proposed quarry is dependent on the Nuweveld Windfarm development, they are both located on the same property; therefore, their impacts cannot be assessed in isolation. The specialist studies on aquatic and faunal themes conclude that the proposed development will result in low to medium impacts, provided the EMP recommendations are strictly adhered to.

Table 7: 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 RECOMMENDATION INCLUDED.

Attach copies of Specialist Report as appendices

19. ENVIRONMENTAL IMPACT STATEMENT

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

ACTIVITIES	PHASE	SIZE AND SCALE	TYPICAL MITIGATION MEASURES
SITE ESTABLISHMENT & ACCESS ROAD CONSTRUCTION			
Access & haul road construction	Pre-Construction	80m long x 4m width	Existing road tracks will be upgraded in contrast to disturbing a virgin land.
Noise	Pre-Construction	N/A	Maintaining machinery and vehicles in a good operating condition.
Dust	Pre-Construction	N/A	• Water spraying • Seize work during extremely windy conditions. • Installation of fallout dust buckets and quarterly monitoring.
MINING			
Removal of stone commodity	Operational	5Ha	• Optimise mineral extraction through effective mine planning, which results in the reduction of geological waste and the minimisation of the footprint of the mining area.
Altered topography	Operational	5Ha	• Mine planning in line with surrounding character of the area.
Disturbance of Topsoil	Operational	5Ha will be disturbed during operational phase.	• Topsoil should be removed to its full depth and stockpiled to preserve its functionality.
Impacts on fauna	Operational	0Ha	• No hunting or collecting should be allowed. Game will be restricted from entering mine area by means of a well-maintained fence.
Loss of Natural Vegetation & Disturbance of faunal habitat	Operational	5Ha	• Implement concurrent Rehabilitation • Apply a buffer zone of 50m around wetlands.

ACTIVITIES	PHASE	SIZE AND SCALE	TYPICAL MITIGATION MEASURES
			• There will be no loss of Natural Vegetation because the area is dominated by grass and alien vegetation • Removal of exotic vegetation. • Disturbance should be limited to minimum mining footprint.
Surface water / wetlands Non-perennial water courses	Operational	0Ha	• Wetlands are considered no-go area and a 50m buffer should be maintained. Water use license will be acquired from the DWS for mining 500m within a wetland area
Heritage	Operational	0 ha	• No Cultural - or Heritage Features have been identified. • If any, known heritage resources would be demarcated and a 50m buffer zone around the areas implemented. However, this site is further away from a watercourse
Noise	Operational	N/A	• Mining machinery to be maintained and kept in good working condition.
TRANSPORT & HAULING			
Dust	Operational	N/A	• Water spraying • Cease work during windy conditions.
NOISE			
Due to the remote location of the mine, it is not expected to impact on anyone.	Operational	N/A	• Mining machinery to be maintained and kept in good working condition.
Carbon dioxide emissions	Operational	On average two trucks per day	• Proper maintenance of all mining machinery

ACTIVITIES	PHASE	SIZE AND SCALE	TYPICAL MITIGATION MEASURES
Oil spillages / leakages	Operational	N/A	• Maintenance of vehicles • Good housekeeping • Suitable emergency spill kit will be available at all times to soak up spills. • Placement of plastic tarpaulins under breakdown vehicles.
Concurrent Rehabilitation of Mined out areas	None	5Ha	• Phased mining approach will be adopted.
Ablution	Operational	10 m ²	• Portable ablution facilities will be provided and maintained. • The contents will be discarded on a regular basis by the appointed sub-contractor.
Fuel storage	Operational	0 m ²	• Good housekeeping. Fuel will be brought on site using a mobile fuel tank trailer. Suitable emergency spill kit will be available at all times to remedy spills during refuelling.
General Waste generation	Operational	9 m ²	• Good housekeeping • All general waste will be disposed at a licenced landfill site.
Hazardous Waste generation	Operational	10 m ²	• Good housekeeping • Disposal at a registered hazardous waste disposal site • All hazardous waste will be kept in rodent proof robust containers with attached lids.
Vehicle maintenance	Operational	0 m ²	• Vehicles will be serviced and maintained off-site. • Only daily pre-use checks and lubrication would be performed.

19.2. Final Site Map

Please see attached Reg 2.2. Plan APPENDIX B

20. SUMMARY OF THE POSITIVE AND NEGATIVE IMPACTS AND RISKS OF THE PROPOSED ACTIVITY AND IDENTIFIED ALTERNATIVES;

The proposed area was chosen because of its sufficient minerals that can be mined for at least 5 years, and its contribution towards improving the local economic growth as permanent employment may occur from the proposed mining operation. The environmental and social impacts that will come with the proposed quarry mining will be monitored or managed through an Environmental Management Plan.

Table 9: Positive Impacts

Socio-Economy	
Activity	Impact
Increase in employment / financial status of the local communities.	Permanent employment of approximately 5 people may occur, increasing their financial status and social upliftment in the process.
Benefits to the local economy	The mine will support local livestock farming in nearby plots through feed lots support.

Table 10: Negative Impacts

GEOLOGY	
Extraction of mineral(s)	All the material within the permitted mine area will be removed during mining.
Change in topography	As the topography is undulating, the mining process will alter the topography of the land.
Loss of soil fertility	Soils in this area range are mostly loamy soils.
Increase in soil erosion	Soils of this area are considered to be in poor condition.
LAND CAPACITY	
Reduction in the agricultural potential of the area.	The fertile topsoil will be stockpiled and be returned for rehabilitation purposes.
FAUNA AND FLORA SPECIES	
Loss of Red Data, protected or sensitive flora species	No Red Data Book species occurs on the mining site.
Removal of alien species	There are alien species identified on site and further disturbance of the area would create opportunities for more infestation by alien plant species (as these are generally pioneer species).

Loss of habitat	Habitat loss will occur within the mine area. .
Loss of Red Data, protected or sensitive flora species	No Red Data Book species occurs on the mining site.
SURFACE WATER RESOURCES	
Contamination of surface water through spillage of diesel or hydrocarbon chemicals.	This impact is unlikely to occur at a close proximity to the mining area as the mining area is outside the extent of the watercourse.
Contamination of surface water through waste / grey water	The mining operation does not use water in its process and no wastewater will be produced.
Contamination of surface water as a result of inappropriate management of waste	Inappropriate management of waste on site has the potential to impact on surface water resources.
Dewatering / Decanting of the aquifer	The mining operation is not expected to have any significant impacts on the aquifers as the anticipated maximum mine depth will not be more than 10m.
Potential increase in recharge to the lower aquifer due to excavations	As a result of the mining activities, topsoil and minerals will be removed. This will however, not lead to a significant increase in recharge to the aquifer from direct rainfall into the area.
GROUND WATER RESOURCES	
Potential contamination of groundwater from poor quality leachate	The mining process does not utilise water and no leachate are expected to occur. Additionally, no heavy blasting activities will take place. Stone aggregate mining requires solid intact rock formation.
AIR QUALITY - DUST	
Increase in dust emissions	An increase in dust emission is likely to result from mining activities and from increased vehicular traffic.
Increase in gaseous emissions	Increased gaseous emissions may result at a local level from vehicles operating at the site and from those moving to and from the site.
NOISE	
Increase in ambient noise levels in the surrounding areas	Noise is expected to be generated during mining operation activities such as loading & hauling.

21. PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPR;

Table 11: Impacts Management

DESCRIPTION OF IMPACT	MITIGATION / MANAGEMENT MEASURES
Geology:	
Extraction of mineral(s)	• Mining operation to be limited within approved mine area. • Conduct mining concurrently with rehabilitation process.
Topography:	
Change in topography	• During mining, work will be carried out in a way that slopes are not dangerously steep. • The general character of the area will be consistent with the surrounding area. No high or dangerously steep slopes will be created.
Loss of soil fertility	• The mining operation will not influence the potential of the current land use as the topsoil will be stockpiled for rehabilitation purposes and it will not be tempered with.
Increase in soil erosion	• Steep slopes must be battered and stabilised. • Wind erosion must be monitored. • Road surfaces must be stabilised and maintained during the mining operations. • All vehicles must remain within the designated roads to prevent soil erosion.
Flora:	
Loss of indigenous vegetation cover	• Topsoil must be kept safe to be used for rehabilitation to re-establish indigenous vegetation
Removal of alien species	• The mining area must be monitored for the occurrence of alien plant species on regular basis and such alien species must be appropriately removed. • Rehabilitated areas must be monitored on a continuous basis for the occurrence of alien plant species until 90% of the natural vegetation cover is established in the affected riparian zones.
Fauna:	
Loss of habitat	• Implement concurrent rehabilitation. • Apply a buffer zone of 120m around wetlands. • Removal of exotic vegetation. • Disturbance should be limited to minimum mining footprint. • Indigenous plant species must be planted during rehabilitation to attract indigenous fauna back to the area.

Loss of Red Data, protected - or sensitive fauna species	- No faunal species are allowed to be collected, hunted or killed on the site. - Illegal poaching and hunting must be addressed through an Environmental Awareness Plan
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Surface water resources:

Contamination of surface water through spillage of diesel or hydrocarbon chemicals.	- Wetlands are considered no-go area and a 50m buffer should be maintained. - No disposal of wastewater will be allowed in the nearby streams - Diesel / hydrocarbons stored onsite must be managed. - No significant impacts on the water courses are expected to occur as the mining area falls outside the extent of the watercourse. - Drip trays must be used during refuelling of machineries on site.
Contamination of surface water through waste / grey water	- Wetlands are considered no-go area and a 50m buffer should be maintained. - The mining operation does not utilise water in its process, therefore no wastewater would be generated on site.
Contamination of surface water as a result of inappropriate management of waste	- Waste must be stored, transported and disposed at a registered waste disposal site. - Waste handling/ storage areas must be restricted to a designated waste handling area. - Waste bins must be securely closed with the lids to avoid waste overflows.

Groundwater resources:

Dewatering / Decanting of the aquifer	The mining operation is not expected to have any significant impacts on the aquifers.
Potential increase in recharge to the lower aquifer due to excavations	The mining operation is not expected to have any significant impacts on the aquifers.
Potential contamination of groundwater from poor quality leachate	The mining operation is not expected to have any significant impacts on the aquifers.
Hydrocarbon contamination during mining operations	Appropriate spill response kits and plans must be in place to react appropriately and timeously in the case of an accidental spill. Wall/floor on the area around Diesel tank/pump must be bounded.

Air Quality:

Increase in dust emissions	- Dust from gravel roads can be reduced through the use of appropriate dust suppression measures, such as wetting of the roads. - Dust fallout must be monitored by an independent consultant, in compliance with the Mine Health and Safety Act. - Work must cease during extreme windy conditions when excessive dust is liberated
Increase in gaseous emissions	Vehicles must be maintained in a road worthy condition so as to limit the emissions to air.

Noise:

Increase in ambient noise levels in the surrounding areas	- Mining to take place during weekdays only, from 07:00am to 05:00pm, and Saturday only from 07:00 to 13:00 - Equipment operating on site must be maintained in a workable condition in order to minimise noise emissions.
Visual impacts	- Unnecessary lighting must be avoided - Machineries on site must be neatly placed - High standard of housekeeping onsite is to be practice.

Archaeological and cultural sites:

Loss of sites of archaeological, cultural or historical importance.	Mining must continually monitor the mine workings for any encountering of archaeological artefacts
Post mitigation	Removal of artefacts with significant conservation prior to mining

Socio-economic:

Safety and security for local inhabitants	- Rehabilitation must ensure that no dangerous excavations are left in an unsafe condition. - Entry and exist to the mining area must be controlled. - No fires will be allowed on the mine area. - The required heavy vehicle signs must be erected at the access to the mining area as per the Road Traffic Act in order to ensure road safety.
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22. ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION

The Applicant must comply with all environmental legislation. Specific aspects to be adhered to environmental legislation such as the National Environmental Management Act , Act 107 of 1998 (NEMA) ; Minerals and Petroleum Resources Development Act, Act 28 of 2002 (MPRDA) ; National Water Act, 36 of 1998 (NWA), Conservation of Agricultural Resources Act , Act No. 43 of 1983 (CARA) and Mine Health and Safety Act, 1996 (Act 26 of 1996).

23. DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

No assumptions, uncertainties and gaps occur in the knowledge. All mitigation measures that have been recommended are possible and practical.

24. REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED

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

The proposed mining operation will play a significant role in the upliftment of the construction sector in the surrounding areas. It will directly create employment opportunities, during its operational phase and improve the living conditions of unemployed residents in the areas.

ii) Conditions that must be included in the authorisation

- Mining to take place during weekdays only, from 07:00am to 05:00pm and Saturday only from 07:00 to 13:00
- A 120m buffer zone must be observed
- Mine area must be properly fenced to restrict unauthorized access.
- Vegetation clearance must be limited to mine area only.
- Search and rescue are to be undertaken before commencement of mining or surface disturbance.

25. PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

5 YEARS

26. UNDERTAKING

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 herein.

27. FINANCIAL PROVISION

An amount of **R 235,940.77**, has been proposed for the rehabilitation of the mined area within the first two years of mining operation. This amount was derived from the quantum calculation for financial provision. During the first application for renewal of the mining permit, a quantum calculation for the paid financial provision as stipulated above will be conducted to determine applicable amount for upgrade of the existing financial provision. An Environmental Audit will play a pivotal role in achieving the above and monitoring of rehabilitation conducted onsite. The applicant commits to comply with the above proposal.

CALCULATION OF THE QUANTUM							
Applicant: D.K. Pringle Earthworks cc Evaluator: Lwethuma Environmental Consultants				Ref No.: WC19/1/3/1/04MP Date: 10 July 2026			
No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19.14	1	1	-
2 (A)	Demolition of steel buildings and structures	m2	0	266.67	1	1	-
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	392.98	1	1	-
3	Rehabilitation of access roads	m2	0	47.72	1	1	-
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	463.16	1	1	-
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	252.63	1	1	-
5	Demolition of housing and/or administration facilities	m2	0	533.33	1	1	-
6	Opencast rehabilitation including final voids and ramps	ha	0.3	271,438.81	1	1	81,431.64
7	Sealing of shafts adits and inclines	m3	0	143.16	1	1	-
8 (A)	Rehabilitation of overburden and spoils	ha	0.2	186,386.11	0.52	1	19,384.16
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	232,140.53	1	1	-
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	674,246.13	1	1	-
9	Rehabilitation of subsided areas	ha	0	156,070.30	1	1	-
10	General surface rehabilitation	ha	0.2	147,649.24	1	1	29,529.85
11	River diversions	ha	0	147,649.24	1	1	-
12	Fencing	m	0	168.42	1	1	-
13	Water management	ha	0	56,140.39	1	1	-
14	2 to 3 years of maintenance and aftercare	ha	2	19,649.14	1	1	39,298.28
15 (A)	Specialist study	Sum	0			1	-
15 (B)	Specialist study	Sum				1	-
Sub Total 1							169,643.93
1	Preliminary and General		20357.27117		weighting factor 2 1		20,357.27
2	Contingencies			16964.39264			16,964.39
Subtotal 2							206,965.59
VAT (15%)							28,975.18
Grand Total							235,940.77

i) Explain how the aforesaid amount was derived.

The aforesaid amount was derived from the Financial Provisioning Regulations, 2015, promulgated on 20 November 2015 under the National Environmental Management Act (NEMA) (Government Notice R1147 in Gazette 39425), for the determination of the pecuniary value for the evaluation of the quantum calculation of financial provision.

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

The EAP hereby confirms that the amount is anticipated to be an operating cost and is provided for as such in the Financial and Technical Competence Report.

28. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

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

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

The impact assessment indicated that the proposed mining activity will not have detrimental impact to the environment and the local communities and most impacts are rated low and medium. The proposed mitigation measures are capable to minimise the identified impacts. Current land uses (open communal grazing land) within the project area may be temporarily impacted through the presence of the localised fenced areas and vegetation clearance. However, the area will be returned to its pre-mining state through rehabilitation process upon completion of mining work.

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

The impact assessment indicated that there are no sites of potential heritage or archaeological importance.

29. OTHER MATTERS REQUIRED IN TERMS OF SECTIONS 24(4) (A) AND (B) OF THE ACT.

The requirements of section 24 (4)(a)(b) were adhered to and the Department of Mineral Resources & Energy is the only competent authority to this application and consultation with other organs of state has been undertaken.

“Procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment –

(a) must ensure, with respect to every application for an environmental authorisation—

(i) coordination and cooperation between organs of state in the consideration of assessments where an activity falls under the jurisdiction of more than one organ of state;

(ii) that the findings and recommendations flowing from an investigation, the general objectives of integrated environmental management laid down in this Act and the principles of environmental management set out in section 2 are taken into account in any decision made by an organ of state in relation to any proposed policy, programme, process, plan or project;

- (iii) that a description of the environment likely to be significantly affected by the proposed activity is contained in such application;
 - (iv) investigation of the potential consequences for or impacts on the environment of the activity and assessment of the significance of those potential consequences or impacts; and
 - (v) public information and participation procedures which provide all interested and affected parties, including all organs of state in all spheres of government that may have jurisdiction over any aspect of the activity, with a reasonable opportunity to participate in those information and participation procedures; and
- (b) must include, with respect to every application for an environmental authorisation and where applicable—
- (i) investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity;
 - (ii) investigation of mitigation measures to keep adverse consequences or impacts to a minimum;
 - (iii) investigation, assessment and evaluation of the impact of any proposed listed or specified activity on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act;
 - (iv) reporting on gaps in knowledge, the adequacy of predictive methods and underlying assumptions, and uncertainties encountered in compiling the required information;
 - (v) Investigation and formulation of arrangements for the monitoring and management of consequences for or impacts on the environment, and the assessment of the effectiveness of such arrangements after their implementation;
 - (vi) consideration of environmental attributes identified in the compilation of information and maps contemplated in subsection (3); and
 - (vii) provision for the adherence to requirements that are prescribed in a specific environmental management Act relevant to the listed or specified activity in question.”

PART B
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

30. ENVIRONMENTAL MANAGEMENT PROGRAMME**30.1. Details of the EAP,**

Company name: Lwethuma Environmental Consultants

Name of the Practitioner: McDonald Mdhluli

Tel No.: 043 111 0654 / 079 242 1312

Fax No.: (086) 668 3192

E-mail address: info@lwethuma.com / madalamdluli@gmail.com

30.2. Description of the Aspects of the Activity

Description of the Aspects of the activity already included in PART A, Section 1

30.3. Composite Map

See Appendix B: Regulation 2 (2) Plan

30.4. Description of the Aspects of the Activity

Description of the Aspects of the activity already included in PART A, Section 1

30.5. Composite Map

See Appendix B: Regulation 2 (2) Plan

31. DESCRIPTION OF IMPACT MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS**i) Determination of closure objectives.**

The closure objective for the mine is to rehabilitate the mined area to restore all the ecosystem services and return it to its pre-mining land use of livestock grazing.

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

The proposed mining operation will not require water during operation phase.

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

The proposed site does not trigger the NWA requirements, as it is not situated close to a watercourse. Therefore, a water use licence application is not required.

iv) Impacts to be mitigated in their respective phases

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

ACTIVITIES	PHASE	SIZE AND SCALE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
(E.g. For prospecting- drill site, site camp, ablution facility, 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....etc....etc.).	(of operation in which activity will take place. State; Planning and design, Pre-Construction, Operational, Rehabilitation, Closure, Post Closure).	of disturbance mes, tonnages and hectares or m ²)	Describe how each of the recommendations in herein will remedy the cause of pollution or degradation and mitigation of pollutants)	(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	Describe the time period when the measures in the environmental management programme must be implemented when required. With regard to rehabilitation specifically this must take place at the earliest opportunities. With regard to Rehabilitation, therefore state either: - Upon cessation of the individual activity Or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
Access & haul road construction	Construction	500M Long 5m width	Planning and design of access & haul roads to limit or prevent the destruction of vegetation and natural habitats. Access road to be compacted with hard rock material to reduce dust emission. Hauling trucks to travel at speed of 40 along the access road. Suppress duet emission through spraying of the access road at given intervals.	Exiting earth tracks to be prioritised for access road development, in contrast to developing access round on virgin land.	Ongoing
Blasting and Drilling	Construction	5Ha	To issue notice three days prior to drilling and blasting. Implement mechanism to avoid rock falls. A medium blasting technique that will result in less earth vibration will be employed.	The DMR (MH&S) to issue permission to blast before commencement	Ongoing

Vegetation clearance	Construction	5Ha	Search and rescue to be conducted prior to removal of vegetation. Vegetation clearance to be limited within demarcated mine area as per the approved mine plan	Approved mine plan to be adhered to at all times.	Ongoing
Mining	Operational	5ha	Optimise mineral extraction through effective mine planning by constructing batches and slopes. Mining activity to be conducted concurrently with rehabilitation process.	Mine Plan	Operation
Crushing and screening	Operation	10m ²	Processing plan to be kept in good condition to reduce noise emission. Dust suppression measures to be implemented around the processing plant.	Compliance with NEMA legislation	Ongoing
Stockpiling	Operation	20m ²	Stockpiles of processed material to be at an acceptable height. Not more than 3m high	Comply with EA conditions	Ongoing
Fuel Storage	Operational	0 m ²	No fuel will be stored on site. Good housekeeping. Suitable emergency spill kit will be available at all times to remedy spills during refueling. Storage tanks to be bunded with concrete material	Comply with EA conditions	Operation
Vehicle Maintenance	Operational	0 m ²	Vehicles will be serviced and maintained off-site. Daily pre-use checks and lubrication would be performed.	Vehicle maintenance	Operation

General Waste generation	Operational	9 m ²	Good housekeeping All general waste will be kept in rodent proof robust containers with attached lids. Disposal at a registered waste disposal site. No waste will be buried or burned on site.	National Environmental Management: Waste Act, 59 of 2008. No listed activities in terms of the National Environmental Management: Waste Act, 59 of 2008 are triggered.	Operation
Hazardous waste generation	Operational	15 m ²	Good housekeeping All hazardous waste will be kept in rodent proof robust containers with attached lids. Disposal at a registered hazardous waste disposal site.	Minimum Requirements for the Handling and Disposal of Hazardous Waste, 2nd Edition, 1998	Operation

32. IMPACT MANAGEMENT ACTIONS

ACTIVITIES (Whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc....)	ASPECTS AFFECTED	SE In which impact is anticipate (e.g Construction, commissioning, operational Decommissioning, closure, post-closure)	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. • Modify through alternative method. • Control through noise control • Control through management and monitoring • Remedy through rehabilitation.	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
SITE ESTABLISHMENT & ACCESS ROAD CONSTRUCTION					
Access & haul road construction	Land degradation	-Air Quality -Fauna -Flora -Sense of place	Pre-Construction	Planning and design of access & haul roads to limit or prevent the destruction of vegetation and natural habitats.	Existing earth tracks to be prioritised for access road development, in contrast to developing access round on virgin land.
	Noise pollution	-Fauna -Sense of place	Pre-Construction	Silencers on vehicles to be maintained and kept in good working condition.	National Environmental Management : Air Quality Act, 39 of 2004 - Section 34: Control of Noise
	Disturbance of air quality	-Air Quality -Fauna -Flora -Sense of place	Pre-Construction	Dust suppression Seize work during extremely windy conditions Installation of fallout dust buckets and quarterly monitoring.	National Environmental Management: Air Quality Act, 39 of 2004-Section 32: Control of Dust Government Notice 827 - National Dust Control Regulations
MINING					

	Soil erosion	-Fauna -Flora -Geology	Operational	Optimise mineral extraction through effective mine planning which results in the reduction of geological waste and the minimisation of the footprint of the mining area	Mine Plan
	Destruction of ecosystem functioning	-Fauna -Flora	Operational	Mine planning in line with surrounding character of the area	Mine Plan
	Soil erosion	-Fauna -Flora -Sense of place	Operational	Topsoil must be removed to its full depth and stockpiled to preserve its functionality. Adopt phased mining approach to reduce vegetation clearance.	Topsoil Management Plan
	Loss of biodiversity	Fauna and Flora	Operational	Search and rescue to be conducted prior to removal of vegetation. Vegetation clearance to be limited within demarcated mine area as per the approved mine plan	Rehabilitation Plan
	Loss of vegetation cover and natural habitat for fauna and flora species	-Fauna -Flora	Operational	Search and rescue to be conducted prior to removal of vegetation. Implement concurrent rehabilitation Disturbance should be limited to minimum mining footprint	Rehabilitation Plan Mine Plan
	Infestation by alien invasive plant species	-Fauna and Flora	Operational	Clearing activities should be kept within the mining area and care should be taken to avoid the introduction of alien plant species to the site and surrounding areas.	Rehabilitation Plan Mine Plan

				The mining area will be monitored for the occurrence of Invasive alien species and such species will be continually removed from site.	
TRANSPORT AND HAULING					
	Visual impacts	-Fauna -Flora -Sense of place	Operational	Water spraying to suppress dust Seize work during windy conditions Undertake mining activity during week days only, from 07:00am to 05:00pm.	National Environmental Management: Air Quality Act, 39 of 2004 - Section 32: Control of Dust Government Notice 827 - National Dust Control Regulations
	Noise pollution Migration of animal species	-Fauna -Flora -Sense of place	Operational	Silencers on vehicles to be maintained and kept in good working condition. Undertake mining activity during week days only, from 07:00am to 05:00pm.	National Environmental Management: Air Quality Act, 39 of 2004 - Section 34: Control of Noise
	Air pollution	-Air Quality -Fauna -Flora -Sense of place	Operational	Proper maintenance of all vehicles	National Environmental Management: Air Quality Act, 39 of 2004
	Loss of Biodiversity	Fauna and Flora	Operational	Maintenance of vehicles Good housekeeping Suitable emergency spill kit will be available at all times to soak up spills. Placement of plastic tarpaulins under breakdown vehicles	Rehabilitation Plan

ABLUTION					
	groundwater contamination	-Ground water -Fauna -Flora	Operational	Portable ablution facilities will be provided and maintained A local service provider will be appointed to collect the content for disposal at a licensed site.	Mineral and Petroleum Resource Development Act, 28 of 2002 National Water Act, 36 of 1998

33. FINANCIAL PROVISION

33.1. Determination of the amount of Financial Provision

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

The environment affected by the mining operations shall be rehabilitated by the applicant, **D.K. Prinlge Earthworks** on an ongoing basis, as far as it is practicable to its predetermined and agreed end use. An amount of **R 235,940.77** has been proposed for the rehabilitation of the mined area within the first two years of mining operation. This amount was derived from the quantum calculation for financial provision. During the first application for renewal of the mining permit, a quantum calculation for the paid financial provision as stipulated above will be conducted to determine applicable amount for upgrade of the existing financial provision. An Environmental Audit will play a pivotal role in achieving the above and monitoring of rehabilitation conducted onsite. The applicant commits to comply with the above proposal.

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

The environmental objectives in relation to closure have been discussed with all Interested & Affected Parties and neighbouring landowners.

33.1.3. 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.

A mining rehabilitation plan in South Africa complies with the Mineral and Petroleum Resources Development Act (MPRDA) and National Environmental Management Act (NEMA), detailing progressive and final restoration to a stable post-mining land use, including scale (e.g., disturbed hectares) and aerial extent via maps

The requested rehabilitation plan is explained below, upon closure of the mine all machinery and equipment will be removed to ensure safety and no permanent structures will remain on site upon closure of the mining activity. The area will be rehabilitated according to the requirements of the Environmental Management Programme that would apply throughout the life of the mine. Stockpiled soil will be used for rehabilitation purposes.

- ❖ The main closure objective will be to return the impacted environment to its pre-mining state by reintroducing the vegetation endemic to the site.
- ❖ Waste materials such as receptacles, scrap, rubble and tyres will not be permitted to be buried or burned on site. It will be removed entirely from the mining area and disposed of at a registered landfill site.
- ❖ The extent of disturbed areas requiring remedial measures of maintenance in the post mining scenario will be limited
- ❖ The mine will continue with required aspects of environmental monitoring until closure.

- ❖ Measures to control erosion of soil will be installed and maintained during the decommissioning phase and up to closure. Requirement will be determined at cessation of mining.
- ❖ On closure, the mine will strive to find an acceptable use for the remaining infrastructure, should there be a need.
- ❖ Vegetation will be monitored and maintained until such a time as a suitable cover has been achieved and a closure certificate can be issued.
- ❖ Vegetation will be monitored and maintained until closure conditions have been met.
- ❖ Alien plants/weeds growing on site must be manually removed on site
- ❖ All roads that will not be used by the local people post mining activities must be closed and vegetated. This practice will be reviewed after two years should closure not have been obtained.
- ❖ The closed site must not pose any safety issues
- ❖ Final rehabilitation must be completed within a specified period by the Regional Manager
- ❖ Closure must comply with the MPRDA (Act 28 of 2002), NEMA (Act 107 of 1998) and NEMA Regulations (2014) for requirements of mine closure
- ❖ Closure plan must be compiled using the guidelines described in Appendix 5 of the NEMA Regulations (2014) and submitted to DMRE within the stipulated timeframes
- ❖ A closure certificate must be obtained from the Minister of the DMRE.

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

The decommissioning phase will entail the rehabilitation of the mining site. Upon cessation of the mining activities, the area will be fully rehabilitated. The rehabilitation of the mining area will comply with the minimum closure objectives as prescribed by the DMRE. The maintenance program will continue for two years after cessation of the mining activities or until a closure certificate is issued.

33.1.5. Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon:

33.1.6. Monitoring of Impact Management Actions

i. Noise monitoring

Ambient noise levels would be measured by an independent consultant before the mining operations commence to establish the base level conditions prior to the mining venture.

ii. Air quality monitoring (Dust fall-out)

Fallout dust buckets will be installed in the 4 directions away from the mine area, but within a 2km radius, and not closer than 150m from the mining area as soon as this mining authorisation is granted.

iii. Water quality monitoring

Water monitoring will be implemented on any water body that the mine may impact on. The parameters to be monitored will be selected, based on the elements within the operation and / or DWS requirements.

iv. EA & EMP Performance Assessments

The EA & EMPr would be assessed on an annual basis for compliance from the date of issuing of the mining permit. The EA & EMP performance assessment will include assessment of the scheduled monitoring results. A performance assessment to the EMP will be conducted annually by a suitably qualified independent professional. This performance assessment will be available to the DMR and other regulatory authorities for their inspection as required.

33.1.7. Monitoring and reporting frequency

The following impacts would require monitoring on a scheduled basis:

- i. Noise monitoring
The appointed **Environmental Control Officer** will monitor noise levels in the mine on a quarterly basis and / or when complaints have been received. The results will be reported to the Mine Manager for management action.
- ii. Air quality monitoring (Dust fall-out)
An independent contractor will monitor dust fall-out at the mine on a quarterly basis and / or when complaints have been received. The results will be reported to the Mine Manager for management action.
- iii. Visual Intrusion of Mining Activities
Site manager to ensure compliance with the guidelines as stipulated in the EMPr throughout the operational phase of the mine. Annual audits will be undertaken by an independent person with the relevant environmental expertise.
- iv. Spillages of any hazardous substances such as fuel and chemicals
Site manager to ensure compliance with the guidelines as stipulated in the EMPr throughout the operational phase of the mine. Annual audits will be undertaken by an independent person with the relevant environmental expertise.
- v. Inadequate Storm water and erosion
Site manager to ensure compliance with the guidelines as stipulated in the EMPr throughout the operational phase of the mine. Annual audits will be undertaken by an independent person with the relevant environmental expertise.

33.1.8. Responsible persons

- i. Noise monitoring
The appointed Environmental Control Officer will monitor noise levels in the mine on a quarterly basis and / or when complaints have been received. The results will be reported to the Mine Manager for management action.

ii. Air quality monitoring (Dust fall-out)

Appointed Environmental Control Officer will monitor dust fall-out at the mine on a quarterly basis and / or when complaints have been received. The results will be reported to the Site Manager for management action.

iii. Visual Intrusion of Mining Activities

Site manager to ensure compliance with the guidelines as stipulated in the EMPr throughout the operational phase of the mine. Annual audits will be undertaken by an independent person with the relevant environmental expertise.

iv. Spillages of any hazardous substances such as fuel and chemicals

Site manager to ensure compliance with the guidelines as stipulated in the EMPr throughout the operational phase of the mine. Annual audits will be undertaken by an independent person with the relevant environmental expertise.

v. Inadequate Storm water and erosion

Site manager to ensure compliance with the guidelines as stipulated in the EMPr throughout the operational phase of the mine. Annual audits will be undertaken by an independent person with the relevant environmental expertise.

33.1.9. Time period for implementing impact management actions

All impact management actions, and monitoring will continue to be implemented throughout the operational phase and annual audit will be undertaken by an Independent person with an Environmental expertise.

33.1.10. Mechanism for monitoring compliance

i. Noise monitoring

The Appointed Occupational Hygienist will measure the noise levels and such readings are then compared to charts indicating acceptable levels of noise.

ii. Air quality monitoring (Dust fall-out)

The dust buckets measure fall-out dust by placed on a pedestal 2m above the ground. The locations of the dust buckets are discretely selected to measure impacts most probably caused by the dust created by the mining activities not closer than 150m from and not further than 4 km from the mine workings. The dust buckets are located to measure impacts of all 4 wind directions.

iii. Water quality monitoring

Water monitoring will be implemented on any water body that the mine may impact on. The parameters to be monitored will be selected, based on the elements within the operation, and DWS requirements.

33.2. EA & EMP Performance Assessments

The EA & EMPr would be assessed on an annual basis for compliance from the date of issuing of the mining permit. The EA & EMPr will be measured against the latest changes in any new legislation that could affect it. The Mitigating measures would be evaluated to establish if they still address the impacts and compared with latest technology of world best practices. The actual mine workings and mining practices will be evaluated to determine if it does comply with the EA & EMPr. Any shortcomings or non-compliances would be highlighted as an action plan to be rectified.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Mining operation	Noise Monitoring	Mandatory Occupational Hygiene Noise Level monitoring	The Owner and the Mine Manager must comply with NEMA and MPRDA and MHSA	Quarterly
	Air Quality Monitoring	Fall-out Dust Buckets installed at strategic locations	The dust fall-out results would be analysed at an accredited laboratory against SANS 1929: 2005	Quarterly
	Water Quality Monitoring	Clean / Sterile water bottles for samples	The Owner and the Mine Manager must comply with NEMA and NWA	Quarterly where applicable
	EA & EMP Performance Assessments	Evaluation of suitability of EMPr and EA to latest changes in legislation. Evaluation of mitigating measures to latest technology and world's best practices. Evaluation of mine workings and mining activities to the EA & EMPr.	The ECO conducts the assessment and report to the Mine Manager and Mine Owner for action	Annually

i. **Indicate frequency of the submission of performance assessment/environmental audit**

An independent competent person with relevant environmental expertise will conduct the environmental audit and the report thereof, will be submitted to the DMR on an annual basis.

ii. **Environmental Awareness Plan**

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

The applicant, **D.K. Pring Earthworks** undertakes to make every person entering the mine aware of the potential environmental impacts associated with their roles and how they can be mitigated through the implementation of the correct management procedures. This training should reduce the potential of occurrence of environmental negative incidents.

Responsibility: The Mine Manager is responsible for ensuring that the environmental awareness training is implemented to all employees and sub-contractors on the site. Environmental awareness training needs should be identified before the project commences, based on the available and existing capacity of site and project personnel (including the applicant and Contractors) to undertake the required EMP management actions and monitoring activities. It is vital that all personnel are adequately trained to perform their designated tasks to an acceptable standard. In addition to these parties, general environmental awareness must be fostered among the general workforce to encourage the implementation of environmentally sound practices. This ensures that environmental accidents are minimized and environmental compliance maximized. Environmental awareness could be fostered by induction course for all workers on site, before commencing work on site, as well as during regular “toolbox talks”. Workers should also be alerted to particular environmental concerns associated with their tasks for the area/habitat in which they are working. Courses must be given by suitably qualified personnel and in a language and medium understood by workers/employees.

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

Employees will undertake an environmental awareness training programme which will focus on the following specific aspects and be undertaken monthly in “Tool box talk” topics in order to deal with the risks :

- ✓ Protected – and exotic vegetation
- ✓ Fauna: All employees will be informed that poaching is illegal and taught to recognise snares, which are to be removed if and when found.

- ✓ Hazardous chemicals: All employees will be trained on the handling, use and disposal of the chemicals / hazardous substances used, and also the actions and reactions in the event of an accident.
- ✓ Soil contamination / pollution and remediation: All employees will be trained how to clean and dispose of accidental spillages.
- ✓ Water contamination / pollution and remediation
- ✓ Dust management;
- ✓ Noise nuisance;

34. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

The application undertakes to review and update the financial provision annually indicating work that would have been completed and the money used for rehabilitation for review and approval by the DMR.

35. UNDERTAKING BY EAP

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) The acceptability of the project in relation to the finding of the assessment and level of mitigation proposed;



Signature of the Environmental Assessment Practitioner (EAP):

LWETHUMA ENVIRONMENTAL CONSULTANTS

Name of Company:

10 July 2026

Date:

36. UNDERTAKING BY APPLICANT

I, **DENHAM PRINGLE**, The undersigned and duly authorized, hereby undertake to implement all the aspects contained in the BAR and ~~EIR~~/EIA and EMPr and accept full responsibility therefore.

(Delete whichever is not applicable)

SIGNED at BEDFORD this 10th JULY day 2026

SIGNATURE

WITNESSES:

1.

2.

Official use

APPROVAL

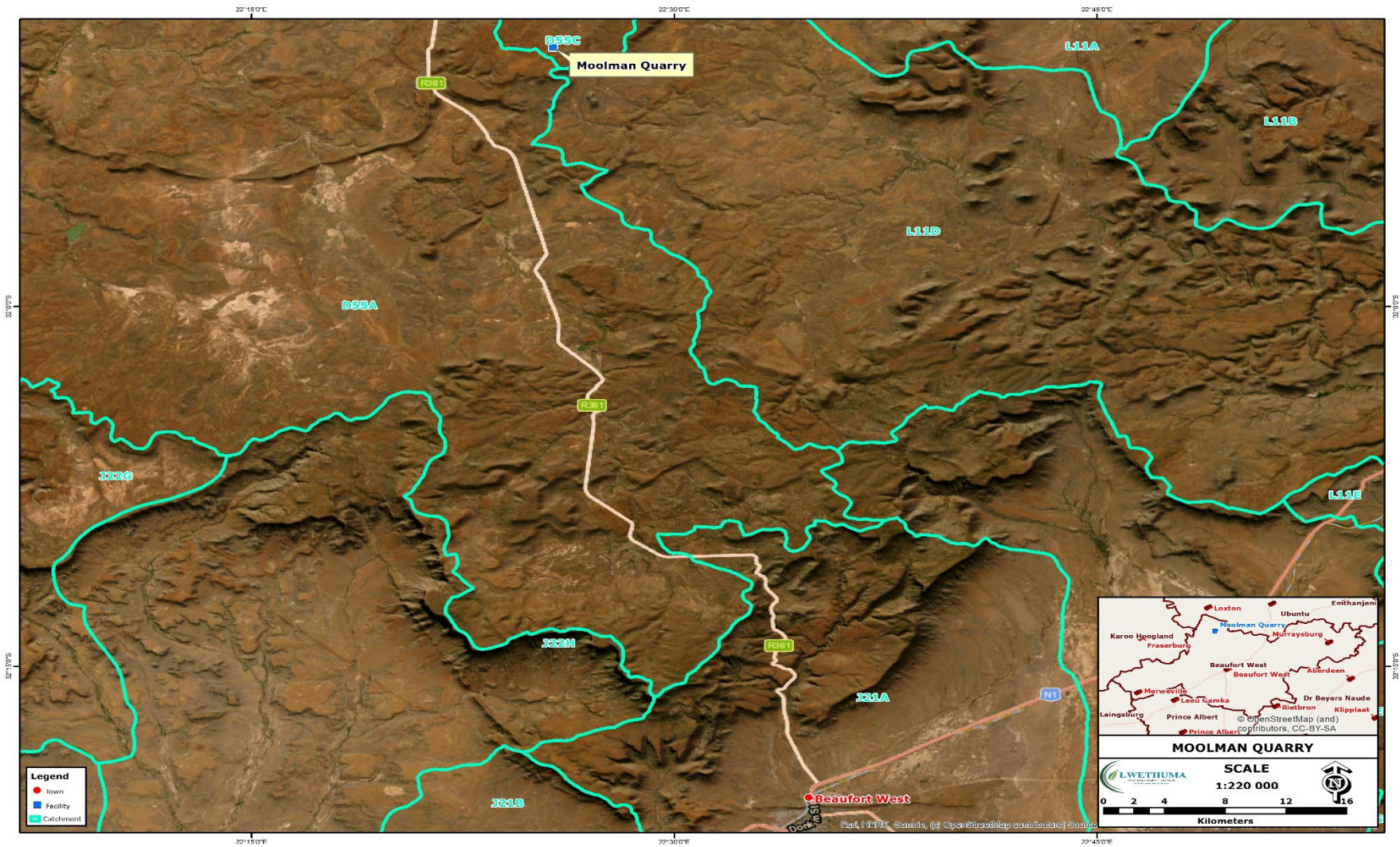
Approved in terms of the *National Environmental Management Act* (NEMA) 1998 (Act 107 of 1998), as amended; and the Amended NEMA *Environmental Impact Assessment* (EIA) 2017 Regulations.

SIGNED at this day 20.....

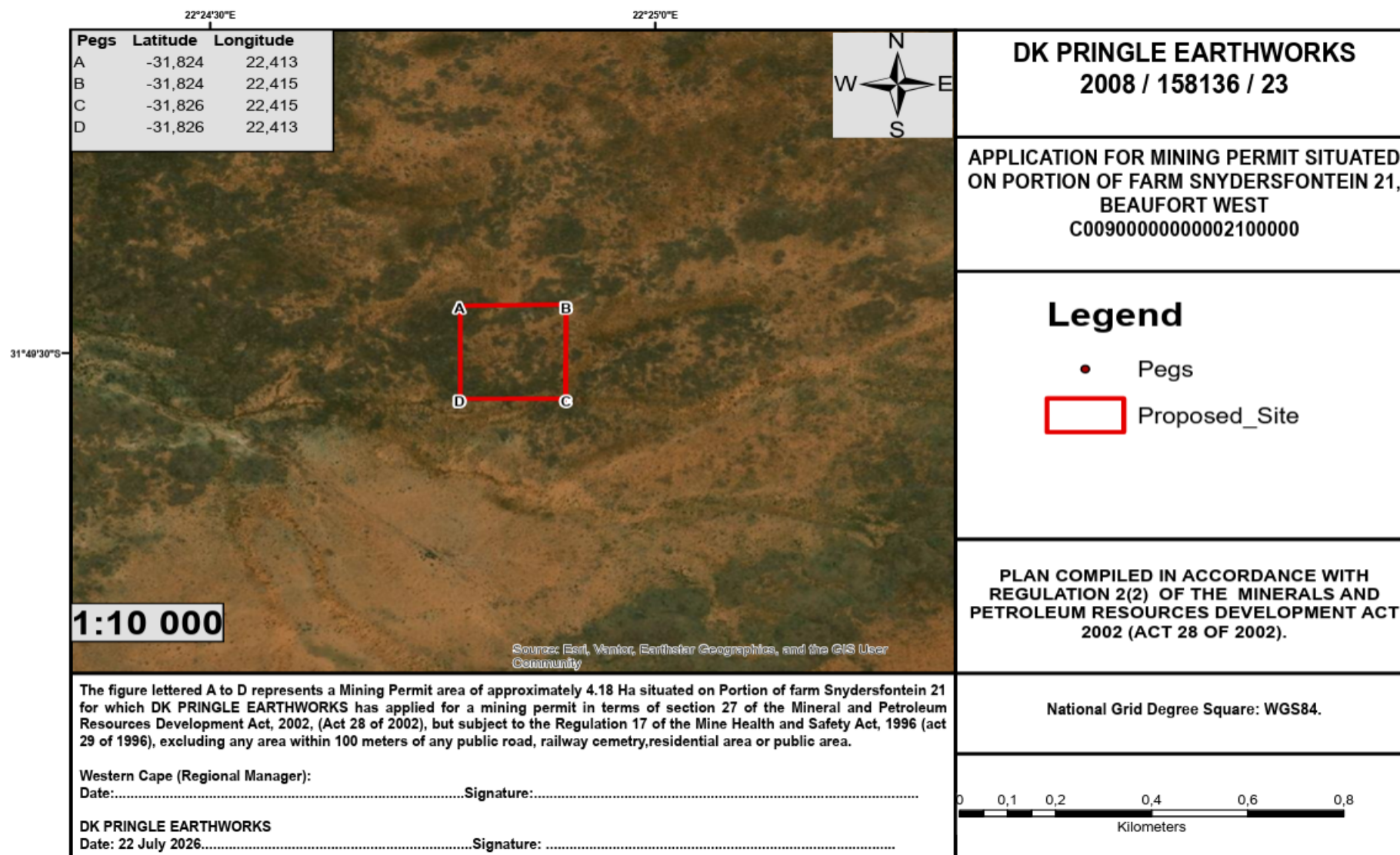
REGIONAL MANAGER

WESTERN CAPE PROVINCE

37. LIST OF APPENDICES**37.1. APPENDIX A: LOCALITY MAP**



37.2. APPENDIX B: REGULATION 2.2 PLAN



37.3. APPENDIX C: RESULT OF CONSULTATION

- Background Information Document (BID)
- Site Advert
- Newspaper Advert
- Landowner comments
- Comments of Organs of State
- Comments from other I&APs

37.3.1. BACKGROUND INFORMATION DOCUMENT (BID)

BACKGROUND INFORMATION DOCUMENT (BID) FOR THE PROPOSED MINING ON PORTION OF FARM SYNDERSFONTEIN 21 IN BEAUFORT WEST DISTRICT WITHIN BEAUFORT WEST LOCAL MUNICIPALITY, WESTERN CAPE.

Prepared By Lwethuma Environmental Consultant for D.K. Prinlge Earthworks .

Ref No: WC19/1/3/1/04MP

June 2026

PURPOSE OF THIS DOCUMENT

This background information (BID) has been prepared to provide information to potential interested and affected parties (I&APs), with respect to the proposed mining operation activity as described above. It also seeks to meet the consultation requirements of the Mineral and Petroleum Resources Development Act, 28 of 2002 and the EIA Regulation of 07 April 2017, as promulgated in terms of the National Environmental Management Act, 107 of 1998 respectively. This BID will provide information pertaining to the proposed project, identified site/location, information on the legal requirements as well as procedure of I&APs participation thereof.

APPOINTMENT OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Lwethuma Environmental Consultant has been appointed as independent EAP by D.K. Prinlge Earthworks , to undertake the EIA process and application for a Mining permit with the Department of Mineral Resources and Energy (DMRE). The EIA process for this project requires Basic Assessment study. The proposed mining operation will take place within a privately owned farm, that is currently not in use. The area is surrounded by commercial farms that mainly specialises in livestock farming and game farming.

PROJECT SITE DESCRIPTION

D.K. Prinlge Earthworks proposes to mine for stone aggregate on portion of Farm Syndersfontein 21, division of Beaufort West, under the Beaufort West Local Municipality, in the Western Cape Province. The original characteristics of the project site is that of Gamka Karoo and patches of Southern Karoo Riviere of the Nama-Karoo Biome.

The geology of the project area is dominated by the occurrence of mainly sandstone with intercalated finer-grained silt- and mudstone of Permian (Karoo) age of the Beaufort group (Karoo).

Beaufort West characterised by a local steppe climate. During the year, there is little rainfall in Beaufort West. This location is classified as BSk by Köppen and Geiger. The average temperature in Beaufort West is 17.9 °C.

The identified project site is located on portion of Farm Syndersfontein 21, magisterial district of Beaufort West in the Western Cape province.

It is about 79km north of Beaufort West and about 55km Southeast from Loxton (Northern Cape Province. Coming from Beaufort west, it can be accessed through R381 towards Loxton, by turning right into a district dirt road and travel about 9km to the site on the right-hand side from the dirt road.

The project site falls within the Breede-Gouritz Water Management Area (WMA) on quatenanry catchment D55A. It borders Krom River on the Northern side. The project site is not regarded as critical biodiversity area as the species found on site are not listed as critically endangered, vulnerable or protected species as per the RED Data List and National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004). Given the history of the Western Cape, it is of vital importance to undertake heritage and archaeological impact assessment study, to verify presence of any heritage significance artifacts in the area. The central GPS co-ordinates are:

Longitude: 22.427926°

Latitude: -31.818723°

PROPOSED PROJECT SCOPE OF WORK

The proposed mining activity entails mining of dolerite hard rock for the stone aggregate production within an area extent of 4.95Ha. Mining methodology will include removal of topsoil to be used during rehabilitation stage, The type of saw used depends on the speed and type of finish required. Once the hard rock is cut into slabs or blocks, it is then cut into smaller slabs and/or trimmed to shape. Modern trimming machines automatically measure and cut the slabs to size with great precision. The proposed project area does already have an access road that will be used during the mining operation and may be maintained during throughout the life of the mine. The proposed mining operation triggers GNR 327 Listing Notice 1, Activities No; 21(a)(b), 22(i), (ii), 24 and 27 of the 07 April 2017 EIA Regulation promulgated in terms of the National Environmental Management Act, 107 of 1998. The triggered activities require a Basic Assessment Process.

Triggered Listed Activities:

GN R.327:

Activity 21(a)(b):

Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002

(Act No. 28 of 2002), including —

(a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource.

(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.

An application for Mining Permit and Environmental Authorisation for Mining, has been lodged with the Department of Mineral Resources and Energy (DMRE), and issued the following reference number; **Reference Number:** WC19/1/3/1/04MP.

The proposed mining methodology will be open cast mining where the following will be undertaken;

- **Site Establishment:** Pegging of approved mine area, removal of topsoil and vegetation clearance.
- **Operation phase:**
 - Primary extraction of material and stockpiling thereof.
 - Mined material will be constantly transported offsite to the market.
- **Decommissioning phase:**
 - Upon completion of mining operation, applicant will finalise rehabilitation process and apply for closure certificate to the DMRE.

BASIC ASSESSMENT PROCESS AND TIMEFRAME

As in flow chart **Appendix C**, Public participation is the basis of any Environmental Impact Assessment (EIA) process. The principles of the National Environmental Management Act, NEMA, 107 of 1998, govern most aspects of the EIA process, including public participation process.

These include the ongoing provision by the EAP of any relevant information throughout the duration of the project to all registered interested and affected parties (I&APs). During the Public Participation Process, input from the proponent, technical expert, Government authorities, and the general public will be gathered to foster a better understanding of the project for all involved and facilitate better-informed decision-making throughout the process.

The key objective Public Participation during the EIA process is for I&APs to raise issues of concern and suggestions that need to be considered in the EIA process.

I&APs will be provided with a 14-calender day comment period in which to raise issues or concerns

in response to the content of the Background Information Document (BID). A draft Basic Assessment Report and final Basic Assessment Report, before it is submitted to the DMR for consideration.

HOW TO GET INVOLVED

All potential interested and affected parties (I&APs) are invited to register in order to participate in this project. Please note that communications regarding the process and the availability of reports will only be sent to register I&APs. To receive further communication regarding this project, please register by sending the signed registration sheet attached herein, together with your contact details and nature of interest, to Lwethuma Environmental Consultant.

APPENDIX A –Locality Map

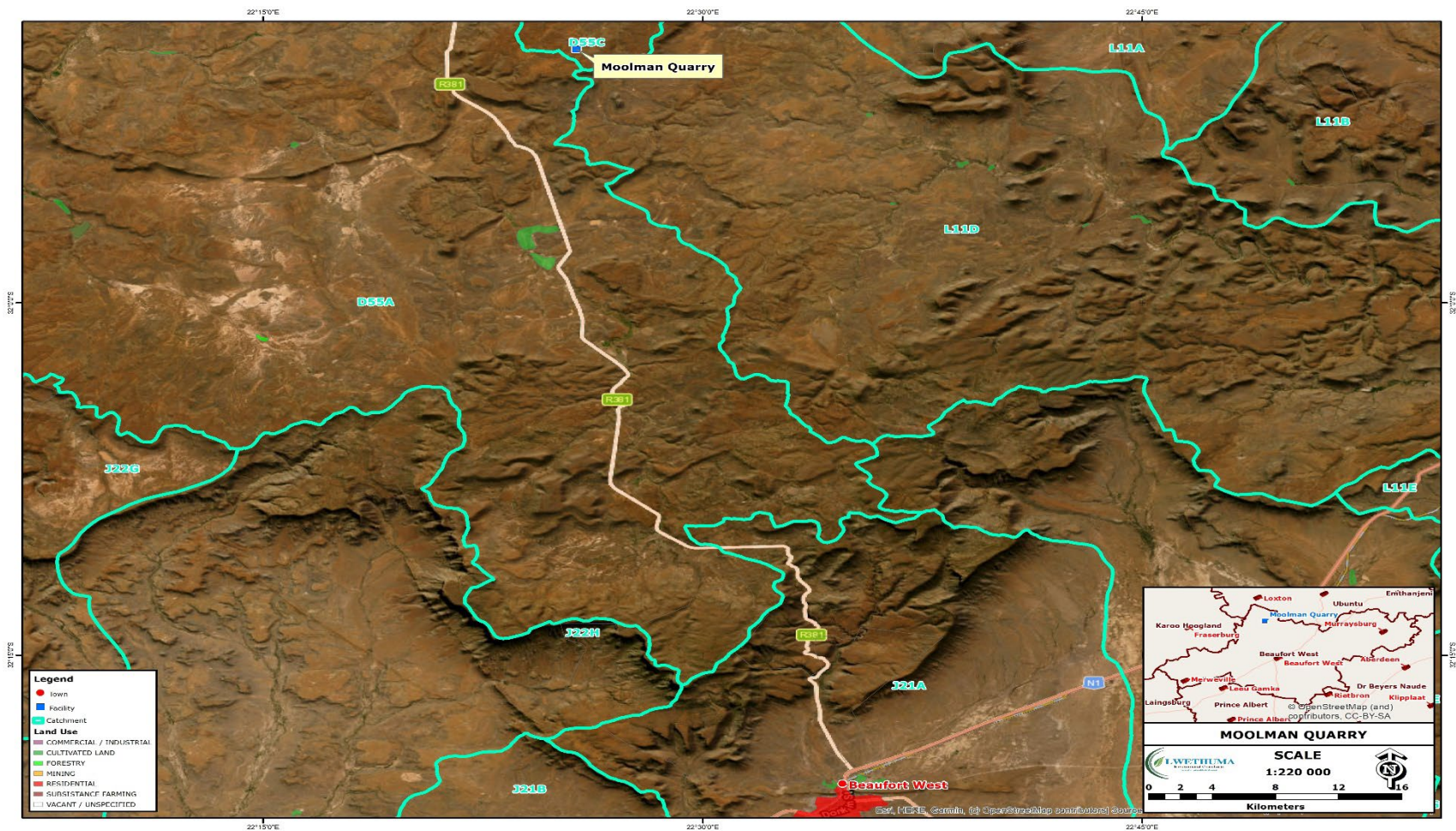
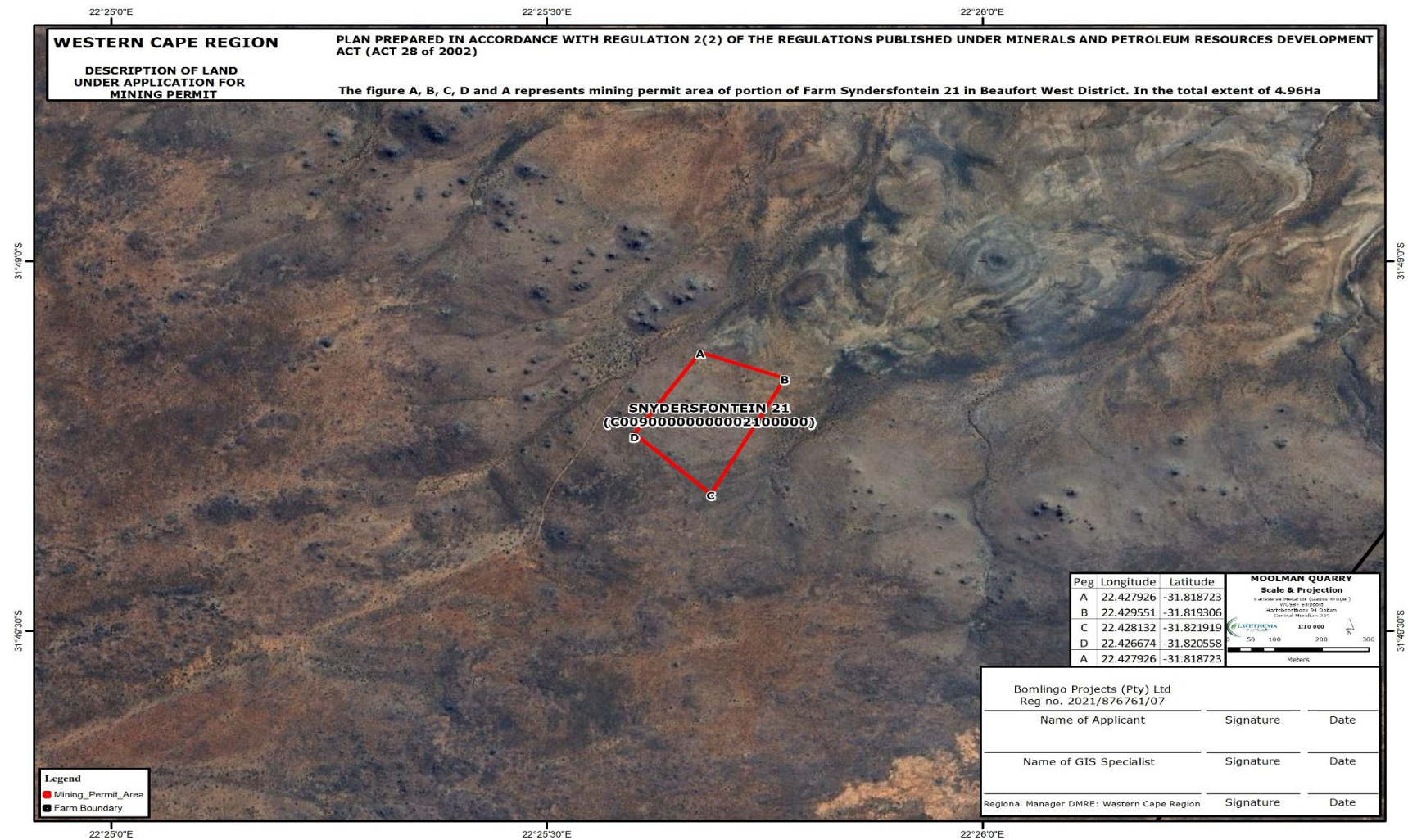


Figure 1: Moolman Quarry



APPENDIX B- EIA process flow chart

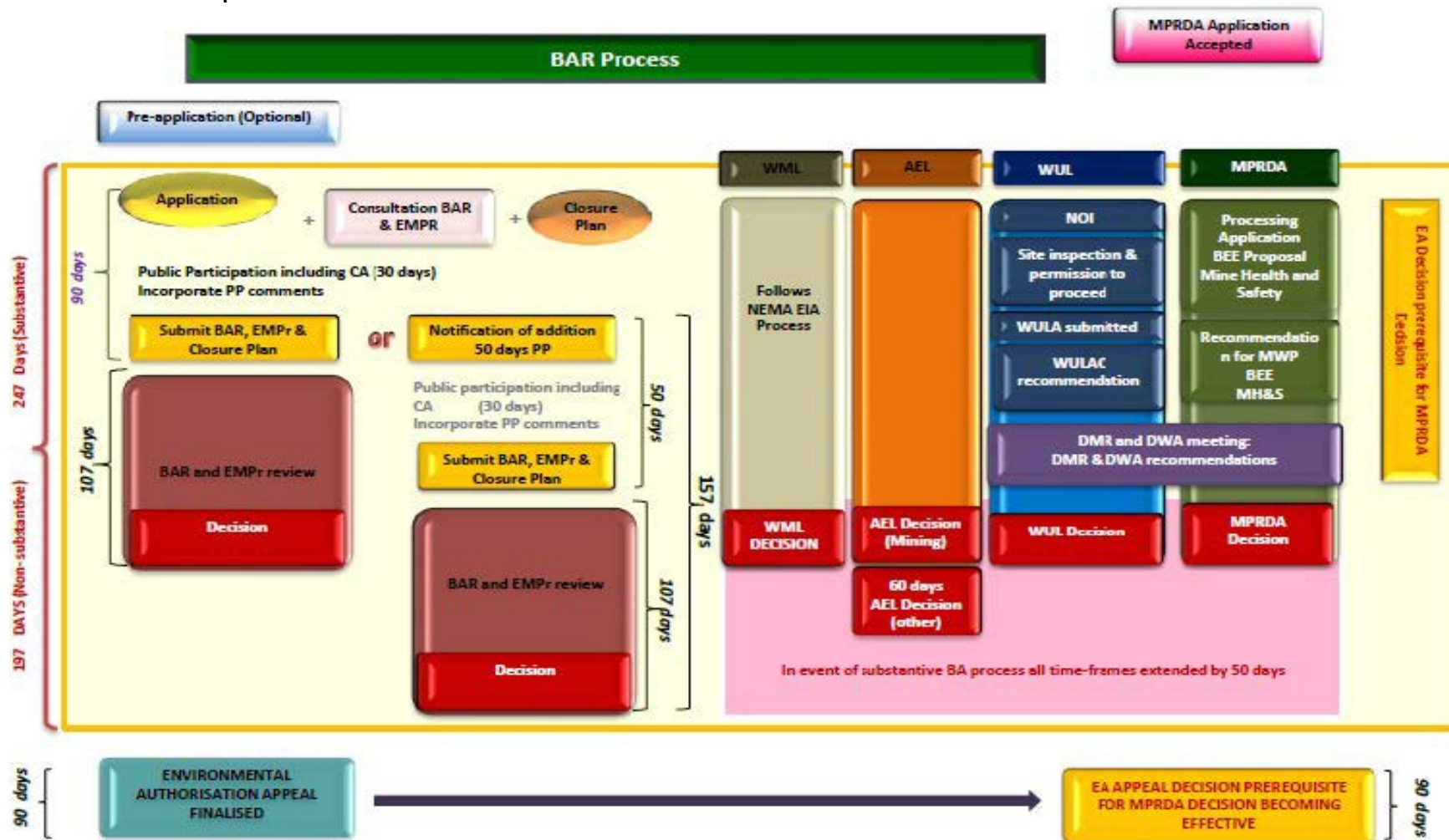


Figure 3: EIA flow chart process.

REGISTRATION & COMMENT SHEET

Proposed Moolman Quarry portion of Farm Syndersfontein 21, Division of Beaufort West, within Beaufort West Local Municipality, Western Cape.

I want to register as an interested and affected party (I&AP)/ or bring to the attention of Lwethuma Environmental Consultant the following comments. (please use additional sheet of paper if required)

Attention: McDonald Mhluli

Fax: 086 710 1099

Email: info@lwethuma.com

Name and Surname		Title	
Company/Organisation			
Nature of Interest			
Postal Address			
Telephone No			
Fax			
Cell Number			
Email Address			

Comments:

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Signature:.....

Date:.....

37.3.2. NEWSPAPER ADVERT

37.3.3. SITE ADVERT

37.3.4. LANDOWNER'S COMMENTS

37.3.5. COMMENTS FORM ORGANS OF STATE

37.3.6. COMMENTS FROM OTHER I&AP

CURRICULUM VITAE: McDonald Mdhuli

McDonald is an Environmentalist with over 14 years' experience. He has an interest in various Environmental Management spectrums that ranges from Environmental Impact Assessment (EIA), Integrated Environmental Management (IEM), Social Impact Assessment (SIA), etc. He currently holds a Postgrad Diploma in Social Impact Assessment, BSc Honours in Environmental Management and Bachelor's degree in Environmental Sciences respectively. He also has a special interest in Heritage management, thus he is currently reading for BA Honours in Archaeology to become a professional archaeologist.

He was involved in various archaeology projects during his undergrad studies; this includes participating in the Heritage Impact Assessment for Coal of Africa, Musina in 2009 and excavations for the Mapungubwe Cultural Landscape in Mapungubwe World Heritage site in 2009 and 2010 respectively. McDonald worked for the Department of Mineral Resources as an Assistant Director, within the sub-directorate mine environmental management, where he was responsible of evaluating applications for environmental authorization for mining. He also worked for a consulting firm before joining the DMR as a senior environmentalist where he was responsible of executing EIA projects.

McDonald has been mentored by great and respected professionals in both Environmental management and Archaeology field. He is currently registered as a Certificated Natural Scientist (*Cert.Sci.Nat.119046*) with the South African Council for Natural and Scientific Profession (SACNASP) and with the International Association for Impact Assessment South Africa (IAIASa. 6304).

Personal information

Name	: McDonald
Surname	: Mdhuli
Sex	: Male
Marital Status	: Married
D.O.B	: 25 May 1986
Nationality	: South Africa
Languages	: English, Afrikaans, IsiXhosa, isiZulu, SiSwati, Sesotho, and Xitsonga.
Health	: Excellent
Office Address	: 12 Tainton Avenue Bonnie Doon East London 5241
Cell numbers	: 079 242 1312 060 371 6877
E-mail	: mcdonald@lwethuma.com / madalamdluli@gmail.com

ACADEMIC AND PROFESSIONAL QUALIFICATIONS

- ✓ **UNISA**
2019 (In progress)
BA Honours in Archaeology
- ✓ **University of Johannesburg**
Completed: 2018
PostGrad Diploma in Social Impact Assessment
- ✓ **UNISA**

Completed: 2017

BSc Honours in Environmental Management

Research Topic: Evaluating the environmental management process (EIA) as applied in small scale mining in Mthatha, Western Cape Province.

✓ **University of Venda**

Bachelor of Environmental Sciences

Completed: 2010

✓ **Rhodes University**

2006

Bachelor of Science (Foundation)

OTHER TRAINING COMPLETED

✓ **Institution:** South African Bureau of Standards [SABS]

Course: ISO 14001:2014:

Completed: 2016

✓ **Institution:** University of Pretoria

Course: Environmental Mineral Resources Inspector [EMRI]

Completed: 2016

MEMBERSHIPS OF PROFESSIONAL ASSOCIATIONS

✓ South African Council for Natural and Scientific Profession (SACNSP)

✓ Certificated Natural Scientist (*Cert.Sci.Nat.119046*)

WORK EXPERIENCES

✓ **Employer:** Department of Mineral Resources [2016 February to 2017 June]

Position: Acting Deputy Director: Mine Environmental Management (whenever DD: MEM is not available)

✓ **Employer:** Department of Mineral Resources [2014 December to 2017 June]

Position: Assistant Director: Mine Environmental Management

✓ **Employer:** Department of Mineral Resources [2012 November to 2014 November]

Position: Environmental Officer

✓ **Employer:** All Green Environmental Consultants [2010 September – 2012 November]

Position: Environmental Consultant

✓ **Employer:** University of Venda [2009 September - December 2009]

Position: Assistant Heritage impact Assessor (HIA) for the Vele Colliery Mine.

✓ **Employer:** University of Venda, Library Department [2008 – 2010]

Position: Library Assistant

LIST OF WORK UNDERTAKEN THAT BEST ILLUSTRATE CAPACITY TO HANDLE TASKS ASSIGNED

List of various EIA Projects that I have conducted

SKILLS AND ATTRIBUTES

- Outstanding computer skills, proficient in Microsoft Project, Word, Excel, PowerPoint, Internet, E-mail/outlook and Ms Access.
 - Proven aptitude for community-based work, good team player and team builder
 - Experience in capacity building, training, and community mobilization
 - Good identification skills for flora/environmental botany
 - Excellent public speaking, presentation and group facilitation skills.
 - Self-starter requiring minimum or no supervision
 - Good leadership skills
 - Determined, dedicated and disciplined sports person
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37.5. APPENDIX D: SPECIALIST STUDIES

No Specialist study Conducted

37.6. APPENDIX E: OTHER INFORMATION

- Screening Tool Report
- Species Sensitivity Verification Report