Proposed clearance of vegetation for the purpose of Macadamia Farming adjacent to Nkomazi Game Reserve, Near Tjakastad, Mpumalanga Province

Draft Scoping Report

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CORE Environmental Services

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Professional Registration -
SACNASP: 300067/15
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ABBREVIATIONS

BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
EA	Environmental Authorisation
GNR	General Notice Regulation
I&AP	Interested and Affected Party
MDARDLEA	Mpumalanga Department of Agriculture, Rural Development, Land and Administration
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
PPP	Public Participation Process
SACAA	South African Civil Aviation Authority

1. OVERVIEW OF THE PROJECT

1.1 Introduction

Nkomazi Game Reserve (Pty) Ltd is proposing to clear vegetation to establish an agricultural area for the purpose of macadamia farming.
The project will include the following:

- Clearance of approximately 2000 hectares of indigenous vegetation.
- Construction of 3 dehusking plants

In accordance with the National Environmental Management Act 107 of 1998, GNR 983 of 2014 (as amended in 2017), an Environmental Authorisation (EA) is required before any clearance activities can take place. Nkomazi Game Reserve (Pty) Ltd subsequently appointed **Core Environmental Services** to apply for the EA by means of conducting a Scoping and Environmental Impact Assessment process as regulated within General Notice Regulation 982, 2014 (as amended in 2017).

1.2 Location

The proposed site is located along the R541 near Badplaas, Mpumalanga Province on the following farm names and portion numbers:

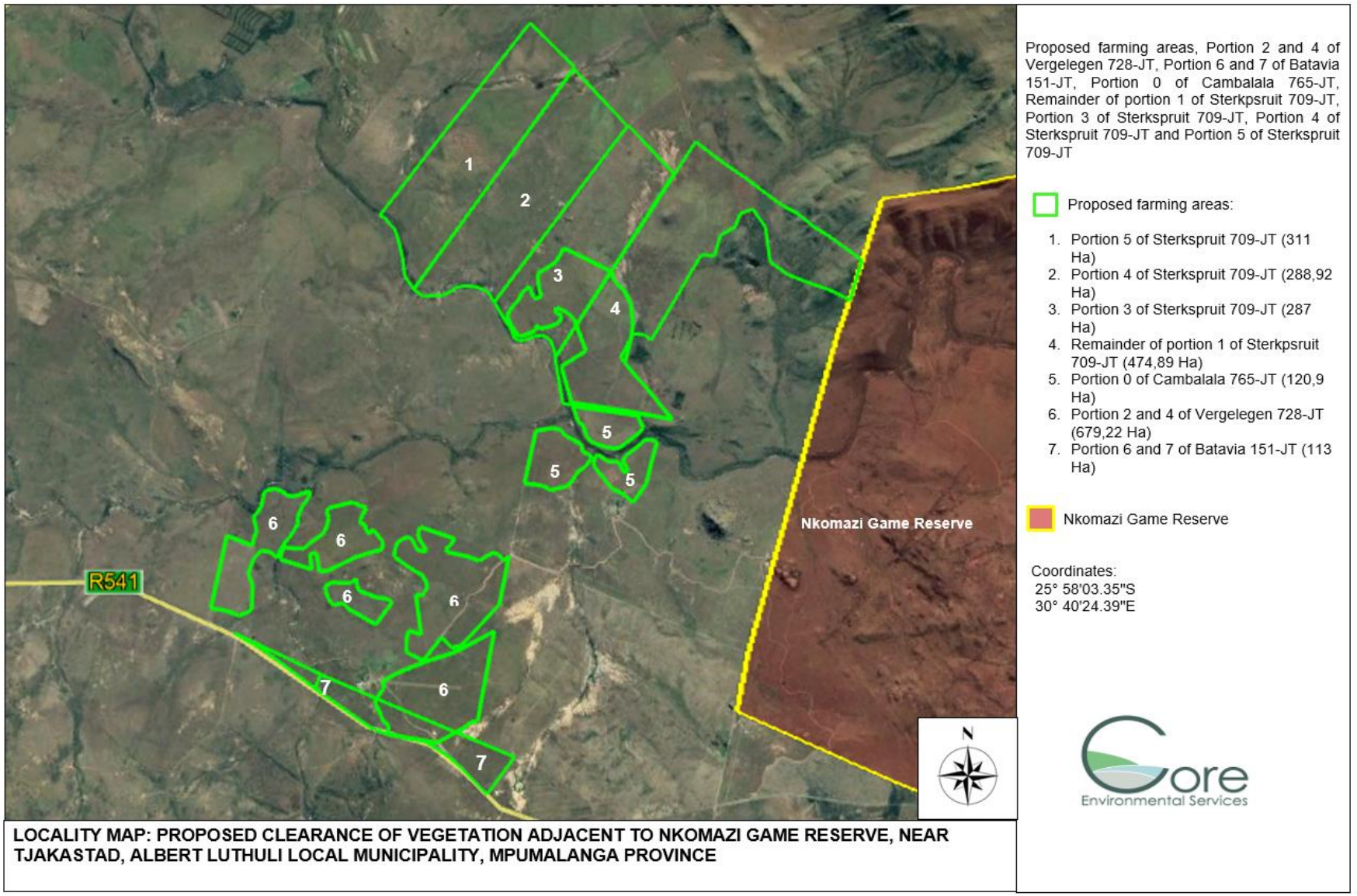
- Portion 2 and 4 of Vergelegen 728-JT
- Portion 6 and 7 of Batavia 151-JT
- Portion 0 of Cambalala 765-JT
- Remainder of portion 1 of Sterkpsruit 709-JT
- Portion 3 of Sterkspruit 709-JT
- Portion 4 of Sterkspruit 709-JT
- Portion 5 of Sterkspruit 709-JT

21-digit Surveyor General codes:

- T0JT00000000072800002
- T0JT00000000072800004
- T0JT00000000015100006
- T0JT00000000015100007
- T0JT00000000076500000
- T0JT00000000070900001
- T0JT00000000070900003
- T0JT00000000070900004
- T0JT00000000070900005

Central coordinates of the site are:
25° 58'03.35"S
30° 40'24.39"E

Please refer to the locality map below, Figure 1.



LOCALITY MAP: PROPOSED CLEARANCE OF VEGETATION ADJACENT TO NKOMAZI GAME RESERVE, NEAR TJAKASTAD, ALBERT LUTHULI LOCAL MUNICIPALITY, MPUMALANGA PROVINCE

Proposed farming areas, Portion 2 and 4 of Vergelegen 728-JT, Portion 6 and 7 of Batavia 151-JT, Portion 0 of Cambalala 765-JT, Remainder of portion 1 of Sterkpsruit 709-JT, Portion 3 of Sterkspruit 709-JT, Portion 4 of Sterkspruit 709-JT and Portion 5 of Sterkspruit 709-JT

Proposed farming areas:

1. Portion 5 of Sterkspruit 709-JT (311 Ha)
2. Portion 4 of Sterkspruit 709-JT (288,92 Ha)
3. Portion 3 of Sterkspruit 709-JT (287 Ha)
4. Remainder of portion 1 of Sterkpsruit 709-JT (474,89 Ha)
5. Portion 0 of Cambalala 765-JT (120,9 Ha)
6. Portion 2 and 4 of Vergelegen 728-JT (679,22 Ha)
7. Portion 6 and 7 of Batavia 151-JT (113 Ha)

Nkomazi Game Reserve

Coordinates:
25° 58'03.35"S
30° 40'24.39"E

Core Environmental Services

FIGURE 1: LOCALITY MAP – PROPOSED PROJECT AREA

1.3 Details of the EAP

Ms. Anne-Mari White, is an Environmental Specialist, who started her studies at the North-West University (NWU) and completed her Bachelor of Science: Environmental Management at the University of South Africa (UNISA) in 2007. Ms. White is registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA Reg No: 2020/602) as well as the South African Council for Natural Scientific Professionals as a Certificated Natural Scientist (Reg. No 300067/15). In addition to her qualification, she completed short courses in soil classification and wetland delineations (Terrasoil Science), Geographic Information Systems (University of KwaZulu-Natal), and Environmental Impact Assessments (NWU).

1.4 Policy, Legal and Administrative Framework

TABLE 1: LEGISLATION APPLICABLE TO THE PROJECT

Applicable legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments considered	Project application and type (permit / licence / authorisation / comment)
The Constitution of South Africa, Act No. 108 of 1996	**Nkomazi Game Reserve (Pty) Ltd** will be required to adhere to the Environmental Management Programme (EMPr) requirements to ensure that social and environmental management considerations are considered and implemented. As per Section 25 the Constitution, a public participation process (PPP) was and will continue to be undertaken, as this is considered to be an essential mechanism for informing stakeholders of their rights and obligations in terms of the project.
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Environmental Authorisation will subsequently be applied for by means of conducting a Scoping and Environmental Impact Assessment process as regulated within GNR982 of 2014 (as amended in 2017).
National Biodiversity Act, 2004 (Act No. 10 of 2004)	The act provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resource; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith.

	The National Biodiversity Act, 2004, must therefore be considered prior to the clearance of vegetation to minimise the impact on the terrestrial biodiversity.
Occupational Health and Safety Act, 1998 (Act No. 85 of 1998)	The Act provides for the health and safety of people at work and for the health and safety of people using plant and machinery. During establishment, work must be conducted with strict adherence to the Occupational Health and Safety Act 85 of 1998.
National Heritage Resources Act, 1999 (Act No 25 of 1999)	This legislation aims to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that it may be bequeathed to future generations. Due to the proximity of the World Heritage Site, a Heritage Specialist will investigate the areas proposed for cultivation. The Heritage Impact Assessment Report will be submitted to SAHRA as well as the Department of Agriculture, Forestry and Fisheries for comment.
Albert Luthuli Local Municipality Integrated Development Plan (IDP) (2017 - 2022)	The primary objectives of the IDP is to foster economic growth that creates jobs and improve infrastructure within the Province. Job opportunities will be created by the proposed agricultural activities which supports economic growth within the area.

1.5 National Environmental Management Act 107 of 1998

The Scoping and Environmental Impact assessment process has been undertaken in accordance with the requirements of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), EIA Regulations, 2014 (as amended in 2017). Activities identified in terms of the Environmental Regulations 2014 (as amended in 2017), may not commence without obtaining Environmental Authorization from the competent authority, **DARDLEA**, and in respect of which the investigation, assessment and communication of activities must follow the EIA procedure as regulated. As per the National Environmental Management Act 107 of 1998 (NEMA 107, 1998), GNR 983, GNR 984 and GN 985 of 2014 (as amended in 2017), the following listed activities are being applied for:

GNR 984, Activity 15:
The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for – (i) The undertaking of a linear activity; or Maintenance purposes undertaken in accordance with a maintenance management plan.

The applicant is proposing to clear approximately 2000 hectares of vegetation for cultivation purposes.

GNR 985, Activity 12(f):
The clearance of an area of 300 square meters or more of indigenous vegetation, except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. (ii) Within critical biodiversity areas identified in bioregional plans.

While certain portions proposed for cultivation was previously cultivated, a small portion of the area proposed are identified to be a Critical Biodiversity Area. It must also be noted that the areas proposed for agriculture does not fall within the areas gazetted as a Protected Area.

According the triggered activities, the Applicant is required to conduct a Scoping and Environmental Impact Assessment (Scoping and EIA) for the activities proposed.

1.6 Scoping Phase:

The objective of a scoping phase is to, through a consultative process:

(a) Identify the relevant policies and legislation relevant to the activity;
(b) Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
(c) Identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
(d) Identify and confirm the preferred site through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focussing on the geographical, physical, biological, social, economic and cultural aspects of the environment;
(e) Identify the key issues to be addressed in the assessment phase;
(f) Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks and activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impact to inform the location of the development footprint within the preferred site; and
(g) Identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be manged and monitored.

1.7 EIA Phase:

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

(a) Determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;
(b) Describe the need and desirability of the proposed activity, including the need and desirability of the proposed activity in the context of the preferred location;
(c) Identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic and cultural aspects of the environment;
(d) Determine the –
    i. Nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives;
    ii. Degree to which these impacts –
        1. can be reversed;
        2. may cause irreplaceable loss of resources, and
        3. can be avoided, managed or mitigated;
(e) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
(f) identify, assess and rank the impact the activity will impose on the preferred location through the life of the activity;
(g) identify suitable measures to avoid, manage or mitigate identified impact; and
(h) identify residual risks that need to be managed and monitored

1.8 Description of the project

Nkomazi Game Reserve (Pty) Ltd is proposing to clear approximately 2000 hectares of vegetation to establish an agricultural area for the purpose of macadamia farming. New structures include the construction of three dehusking plants.

In terms of water use, an application for a Water Use License was submitted and obtained from the Inkomati Ushuthu Catchment Management Agency (IUCMA). The applicant is proposing to abstract water from boreholes for the purpose of irrigation.

1.9 Need and Desirability

- Macadamia nuts is a growing market in South Africa and is therefore an attractive and desirable investment opportunity. With a low labour requirement, macadamias are easy to grow, and farmers will therefore get a return on investment in approximately 5 to 7 years.

- China is South Africa's fastest growing market for macadamia nuts as China currently consumes 50% of South African macadamia production and although China is catching up on supplying to their need for macadamia nuts, the need for macadamia nuts remain and continues to grow.
- Macadamia trees covers an area of approximately 28 000 hectares and is growing by an estimated 3900 hectares per year. Mpumalanga is the main macadamia nut growing area in South Africa.
- A total of 12 500 full-time workers are estimated to be employed by the macadamia industry in South Africa with an additional 8100 workers during the peak season.

With the growing demand for macadamias, there is a definite need for more macadamia farms which would in turn provide job opportunities to the surrounding community members.

2. PUBLIC PARTICIPATION PROCESS

The purpose of this chapter is to provide an outline of the public participation process (PPP) to date and the way forward with respect to the Basic Assessment process.

Consultation with the public forms an integral component of the EA process. This process enables Interested and Affected Parties (I&APs) (e.g. directly affected landowners, national-, provincial- and local authorities, and local communities etc.) to raise their issues and concerns regarding the proposed activities, which they feel should be addressed in the BA process. The PPP has thus been structured such as to provide I&APs with an opportunity to gain more knowledge about the proposed project, to provide input through the review of documents/reports, and to voice any issues or concerns at various stages throughout the BA process.

I&APs were identified during the public participation phase of the project. All the parties identified as an I&AP (surrounding landowners, relevant departments, stakeholders, local and district authorities) have automatically been registered in the I&APs database for the project. The registered I&AP list is attached as **Annexure C.1.**

In effort to engage potential stakeholders, different communication methods were used to inform them about the project and how to get involved in the BA process. These methods include:

- Distributing English Background Information Documents (BIDs) to all registered I&APs, proof of which is attached in **Annexure C.2**;
- Placement of media advert in a local newspaper (The Lowvelder) on 23 July 2020 (see **Annexure C.3**).
- Placing of a notice at the proposed site took place on 24 July 2020 (see **Annexure C.4**);

The following comments have been received by I&AP's and is also attached as Appendix C:

Interested and Affected Party / Organ of State	Comment	Response
Mr. Thabo C. Rasiuba **(Water Quality Management: Resource Protection & Waste)**	Irrigation of macadamia plant requires water use authorisation. Kindly ensure that there is water use authorisation in place before starting to irrigate.	Thank you for your response, please note that you have been registered on the database to receive all further communication. The applicant recently obtained a Water Authorisation for the abstraction. I will request a copy and forward to your office.
	<u>Response to email dated 28/07/2020:</u> Hi Anne-Mari If that is the case, the IUCMA will not have any objection to the project, just make sure you forward me the copy of the permit to ensure that everything is in order, please.	

3. CONSIDERATION OF ALTERNATIVES

The EIA process requires the developer to identify and investigate/assess feasible and reasonable alternatives. The project alternatives range from the location where the activity is proposed, type of activity to be undertaken, design the of activity, technology to be used in the activity to the option of not implementing the activity (No-Go Alternative).

The assessment of the alternatives is a complicated and multi-faceted issue, which is essential to the success of this application and ultimately to the proper, responsible and sustainable operation of the proposed project.

3.1 Alternative Selection

3.1.1 Location alternatives

No other site alternative was considered for the establishment of this agricultural area as the applicant, Nkomazi Game Reserve (Pty) Ltd, has carefully selected the different portions of the properties proposed for cultivation. The selected properties were the least sensitive in terms of ecology as some of these areas proposed were previously cultivated.

3.1.2 Layout alternatives

An Ecological and Heritage Impact Assessment will be conducted as part of the Environmental Impact Assessment process, to identify any sensitivities within the project area to be of ecological or heritage significance. Any sensitivities identified within the specialist reports, will subsequently impact the layout of the proposed areas.

3.1.3 No-Go alternative

The no-go alternative would be to not authorise the application for the clearance of vegetation for agricultural purposes. Should this alternative be favourable, the project area will not be cleared and used for agriculture, however, as various portions within the areas proposed were previously cultivated, no impact was identified to be so severe in order for the no-go alternative to be further investigated.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The description of the affected environment below draws on existing knowledge from published data, previous studies, specialist investigations, site visits to the area and is used to understand the possible effects of the proposed project on the environment.

4.1 Topography

The topography of the of the proposed project areas, vary between approximately 1068m - 937m above mean sea level. A slightly elevated ridge line is located on the northern corner of the site as well as the southern corner of the site, however, this area is still arable. The project area slopes slightly from the north western side of the properties to the south eastern side but is mostly flat and fit for agricultural purposes.

4.2 Climate

Mpumalanga is a province where the climate varies due to is topography. Tjakastad is located on the Lowveld Region and has a tropical climate with warm sub-tropical temperatures and experiences high summer rainfalls.

The study area experiences a humid and hot weather during summer seasons. The climatic trends of the area suggest summer season precipitation and dryer periods during winter. The area receives a total of about 800-1000 mm of rain over 12 months.

4.3 Ecology

The site is located within the Savannah Biome. The Savanna Biome is the largest Biome in southern Africa, occupying 46% of its area, and over one-third the area of South Africa. It is well developed over the lowveld and Kalahari region of South Africa. It is characterized by a grassy ground layer and a distinct upper layer of woody plants. The vegetation type is classified as the Swaziland Sour Bushveld.

Terrestrial Ecology: According to the Mpumalanga Biodiversity Sector Plan, 2014, the site falls within a Protected Area (National Parks and Nature Reserve). It must however be noted that the areas proposed for cultivation was never proclaimed as a Protected Area in terms of the Development Facilitation Act 67 of 1995 or the Mpumalanga Nature Conservation Act 10 of 1998. Some of the portions does however fall within areas classified as Critical Biodiversity Areas (CBA) in terms of the Mpumalanga Biodiversity Sector Plan, 2014. An Ecological Assessment will be conducted to determine the sensitivity of the areas proposed for agriculture.

Freshwater Ecology: The area is classified as an Ecological Support Area (Important Sub catchment). The MTPA requirements for an Ecological Support Area (important sub catchment) are quoted as follows: This sub-category includes National Freshwater Ecosystems Priority Areas (FEPA) sub-catchments and Fish Support Areas. A river FEPA is the river reach that is required for meeting biodiversity targets for river ecosystems and threatened fish species. In managing the condition of a river FEPA, it is important to manage not only the river itself, but also the network of streams and wetlands as well as land-based activities in the sub-catchment that supports the river FEPA. A

proportion of tributaries and wetlands need to remain healthy and functional in order for the river FEPA to be kept in a good ecological condition. This requires that management activities are focused on maintaining water quantity and quality and the integrity of natural habitat in the sub-catchment.

4.4 Surface and Groundwater

The Komati River separates the northern and southern areas proposed for agriculture. Various drainage lines traverse the proposed areas and drains towards the Komati River.

In terms of wetlands within the proposed area, there are various wetlands classified as channeled valley bottom wetlands in accordance with the National Freshwater Ecosystem Priority Areas (NFEPA).

As part of the Environmental Impact Assessment process, the wetlands will be delineated, identified and included within the Environmental Impact Assessment Report.

4.5 Land use

According to the Mpumalanga Biodiversity Sector Plan of 2014, the proposed project area falls within an Informal Protected Area (NPAES). However, according to the farm and portion numbers proclaimed as a Protected Area in the Mpumalanga Provincial Gazette No 819, 817 and 750, the areas proposed for agricultural purposes does not form part of the proclaimed Protected Area. Although the areas proposed are not proclaimed as part of the Nature Reserve, the areas do currently form part of the fenced Nkomazi Game Reserve.

As mentioned, various sections within the areas proposed for agriculture, was previously used for cultivation.

The project area also forms part of the Barberton Makhonjwa Mountains World Heritage Site. The agricultural activities are however proposed on the most south-western corner of the World Heritage Site with the lowest altitude compared to the remainder of the area declared as a World Heritage Site. The locations of all geo-sites located within Nkomazi Game Reserve was received and from the information received, it is noted that one important location traverses the proposed agricultural area. This area will therefore be excluded and protected from the area proposed for agriculture.

4.6 Geology and Soils

The mountains within the Nkomazi Game Reserve lie on the eastern edge of the Kaapvaal Craton. The range is best known for having some of the oldest exposed rocks on Earth, estimated to be between 3.2 and 3.6 billion years old. The range is also known for its gold deposits and a number of komatiites, an unusual type of ultramafic volcanic rock named after the Komati River.
The major soil types present within the project area are shallow soils with minimal development. These soil types include Mispah, Dresden and Glenrosa, which are less than 25cm deep before hitting an impervious layer that prevents further root growth

4.8 Heritage

A Heritage Impact Assessment will be conducted to determine whether the transformation of the proposed land will have any impact on heritage resources or artefacts.

The findings of this study will be included within the Environmental Impact Assessment Report.

4.9 Socio-Economic Environment

Tjakastad is located within the Gert Sibande District. The population consist of 12711 individuals that live in peri-urban and rural areas.

Gert Sibande District currently has an unemployment rate of 29.7% with 45.1% of the people living below the poverty line. The levels of skill and qualifications of the population is also fairly low which is problematic for future economic development. The socio-economic context of the surrounding environment can therefore be described as a community with a low percentage of education and high unemployment rate.

5. METHODOLOGY OF ASSESSING THE SIGNIFICANCE OF IMPACTS

This section outlines the method used for assessing the significance of the potential environmental impacts during the construction/establishment, operational and decommissioning phases.

For each impact, the EXTENT (spatial scale), MAGNITUDE and DURATION (time scale) would be described, as shown in **Table 2**. These criteria are then used to determine the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the Report represents the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.

The following tables show the scale used to assess these variables and defines each of the rating categories.

TABLE 2: ASSESSMENT CRITERIA FOR THE EVALUATION OF IMPACTS

Criteria	Category	Description
Extent or spatial influence of impact	**Regional**	Beyond a 30km radius of the candidate site.
	Local	Within a 30km radius of the candidate site.
	Site-specific	On site or within 100 m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	**High**	Natural and/ or social functions and/ or processes are *severely* altered
	Medium	Natural and/ or social functions and/ or processes are *notably* altered
	Low	Natural and/ or social functions and/ or processes are *slightly* altered
	Very low	Natural and/ or social functions and/ or processes are *negligibly* altered
	Zero	Natural and/ or social functions and/ or processes remain *unaltered*
Duration of impact	**Long-term**	More than 10 years after construction
	Medium-term	Up to 5 years after construction
	Construction-term	Up to 3 years

The SIGNIFICANCE of an impact is derived by taking into account magnitude, duration and extent of each impact. The criteria employed in arriving at the different significance ratings is shown in Table 3.

TABLE 3: DEFINITION OF SIGNIFICANCE RATINGS

Significance ratings	Level of criteria required
High	• High magnitude with a regional extent and long-term duration • High magnitude with either a regional extent and medium-term duration or a local extent and long-term duration • Medium magnitude with a regional extent and long-term duration
Medium	• High magnitude with a local extent and medium-term duration • High magnitude with a regional extent and construction period or a site-specific extent and long-term duration • High magnitude with either a local extent and construction period duration or a site-specific extent and medium-term duration • Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Low magnitude with a regional extent and long-term duration
Low	• High magnitude with a site-specific extent and construction period duration • Medium magnitude with a site-specific extent and construction period duration • Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Very low magnitude with a regional extent and long-term duration
Very low	• Low magnitude with a site-specific extent and construction period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	• Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the **PROBABILITY** and **CONFIDENCE** of this impact are determined using the rating systems outlined in **Table 4** and **Table 5.** The significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the **REVERSIBILITY** of the impact is estimated using the rating system outlined in **Table 6.**

TABLE 4: DEFINITION OF PROBABILITY RATINGS

Probability ratings	Criteria
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

TABLE 5: DEFINITION OF CONFIDENCE RATINGS

Confidence ratings	Criteria
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

TABLE 6: DEFINITION OF REVERSIBILITY RATINGS

Reversibility ratings	Criteria
Irreversible	The activity will lead to an impact that is in all practical terms permanent.
Reversible	The impact is reversible within 2 years after the cause of the impact is removed.

6. Impacts and Risks

Within this section, the impacts and risks to be assessed during the Environmental Impact Assessment Phase, is identified. The table below identifies all aspects to be assessed during the EIA phase of the project:

Activity	Impact / Risk	Nature	Extent	Duration	Probability	Significance	Degree to which impact:		
							Can be reversed	May cause irreplaceable loss of resources	Can be avoided, managed or mitigated
Alternative 1 (Preferred alternative)									
Site Clearance and construction activities	Floral habitat and diversity. Impact through vegetation clearance	Medium - negative	Site-specific	Long-term	Definite	Medium (-)	Unlikely	Probable	Yes – Sensitive areas will be demarcated
	Fragmentation and destruction of habitats	High - negative	Local	Long term	Highly Probable	Medium (-)	Unlikely	Probable	No – permanent impact on habitat
	Increase in establishment of alien invasive plant species	Medium - negative	Site-specific	Long-term	Probable	Medium (-)	Yes	Improbable	Yes - mitigated
	Soil erosion	High - negative	Site specific	Short term	Probable	Medium	Yes	Improbable	Yes - mitigated
	Dust generation	Moderate - negative	Site-specific	Short-term	Probable	Low (-)	Yes	Improbable	Yes – managed and mitigated
	Contribute to climate change and non-renewable resource use	Medium - negative	National	Medium-term	Improbable	Low (-)	Mostly	Probable	Yes –managed, and mitigated

	Soil contamination - by hydrocarbon spillages	Moderate - negative	Site-specific	Short-term	Probable	Low (-)	Yes	Improbable	Yes – avoided
	Surface and groundwater pollution	High-negative	Site Specific	Short-term	Probable	Medium (-)	Yes	Improbable	Yes- avoided
	Impact on World Heritage Site	Medium - negative	Site Specific	Long-term	Unlikely	High (-)	No	Improbable	Yes - avoided
Operational activities (activities associated with agriculture)	Increase in establishment of alien invasive plant species	Medium - negative	Site specific	Long term	Probable	Medium (-)	Yes	Probable	Yes – managed and mitigated
	Ground and surface water pollution	High - negative	Local	Long-term	Probable	High (-)	Yes	Improbable	Yes – avoided
	Soil contamination	Moderate - negative	Site-specific	Short-term	Probable	Low (-)	Yes	Improbable	Yes – avoided, mitigated
	Impact on the livelihood of community	High - positive	Local	Long term	Definite	High (+)	Yes	Improbable	Yes – mitigated
No-go alternative									
Associated Impacts if agricultural activity is not approved	Socio-economic impact Loss of job opportunities	High - negative	Local	Long term	Definite	Neutral (no possible positive impact)	Yes	Improbable	Yes (if application is approved)

	Ecological Impact on the proposed development area	Medium - negative	Site specific	Long term	Define	Medium (-)	Yes	Probable	Yes

7. Mitigation Measures

Impact/Risk	Mitigation Measure	Level of residual Risk
Impact on floral habitat and diversity through removal of indigenous vegetation and spreading of alien vegetation	• Implement alien vegetation control; • Keep vegetation clearing to a to the development area and exclude any sensitivities from the proposed area; • Ensure that no fauna located on site are harmed;	Medium
Dust generation during clearance of vegetation and other construction activities within and adjacent to site	• Clearance of vegetation must be done in phases as per the construction programme; • Areas may not be disturbed and left for unattended for long periods of time; • Heavy moving vehicles and other vehicles must adhere to a speed limit of 40km/h;	Low
Surface and groundwater contamination	• Employee training and awareness; • Spillages of any potentially hazardous materials should be cleaned immediately to avoid contamination of runoff; • No hazardous materials may be stored within 100m from the edge of any watercourse; • Compaction of rock to establish the water crossing must be closely monitored and all machinery used must be in a good working condition; • Water abstraction must be regulated and monitored in accordance with the Water Use License issued;	Medium

Soil erosion due to areas disturbed and soil contamination caused by hydrocarbon spillages	• Employee training and awareness • Spillages of any potentially hazardous materials should be cleaned immediately to avoid contamination; • Erosion abatement measures should be installed in areas prone to erosion	Very Low
Impact on World Heritage Site	• Avoid any disturbance with identified geo-sites within the perimeter of the site. All important geo-sites must be protected from any activity proposed to be conducted	Medium

8. Plan of Study

This Plan of Study for Environmental Impact Assessment (PoS for EIA) has been compiled in terms of the content requirements listed in Appendix 2 to the EIA Regulations of 2014 (Government Notice No. R 982 of 2014) under the National Environmental Management Act (Act No. 107 of 1998) (NEMA). The detailed PoS is provided in Table 2.

Table 2 | Plan of Study for the EIA phase

Content as required by NEMA
A plan of study for undertaking the environmental impact assessment process to be undertaken, including:
(i) A description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;
No other sites were considered for agricultural activities as most of the different portions identified were previously cultivated and subsequently impacted. Specialist assessments will however be conducted as part of the EIA process and any sensitive areas (wetlands, watercourses, heritage and archaeological findings) will be identified to be excluded from the proposed development area. The no-go alternative would be to not authorise the application for the clearance of vegetation for agricultural purposes. Should this alternative be favourable, the project area will not be cleared and used for agriculture, however, as large portions of the proposed project site were previously used for agriculture, it is unlikely that any impact would be so severe for the no-go alternative to be further investigated. The respective impacts of each of the alternatives will be assessed in detail in the Environmental Impact Assessment phase.
(ii) A description of the aspects to be assessed as part of the environmental impact assessment process;
During the screening process various potential impacts on the biophysical and socio-economic environment were identified by the EAP. These include: • Impact on terrestrial biodiversity, comprising fauna and flora; • Impact on the nearby water resources; • Impact on heritage resources, including archaeological and palaeontological (including the world heritage site); • Visual impacts; • Social impacts; • Noise impacts; and • Dust impacts.

(iii) Aspects to be assessed by specialists;

An Ecological Assessment and Wetland Delineation will be conducted and will include the following:

- Assessment of the terrestrial ecology of the 2000 hectares proposed for agriculture;
- Delineating all wetlands within the proposed project site;
- Identifying the ecological sensitivity of the proposed area;
- Providing recommendations and mitigation measures for the agricultural activities proposed;

A Heritage assessment will also be conducted by a Heritage Specialist to assess the following:

- Assessment of the 2000 hectares proposed for agriculture;
- Identifying any possible heritage or archaeological sensitivities and providing recommendations with regards to the preservation of any possible findings

(iv) A description of the proposed method of assessing the environmental aspects, including aspects to be assessed by specialists;

The methodology used to assess the impacts is summarised below.

This section outlines the method used for assessing the significance of the potential environmental impacts during the construction/establishment, operational and decommissioning phases.

For each impact, the EXTENT (spatial scale), MAGNITUDE and DURATION (time scale) would be described, as shown in Table 2. These criteria are then used to determine the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the Report represents the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.

The following tables show the scale used to assess these variables and defines each of the rating categories.

TABLE 2: ASSESSMENT CRITERIA FOR THE EVALUATION OF IMPACTS

Criteria	Category	Description
Extent or spatial influence of impact	**Regional**	Beyond a 30km radius of the candidate site.
	Local	Within a 30km radius of the candidate site.
	Site-specific	On site or within 100 m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	**High**	Natural and/ or social functions and/ or processes are *severely* altered
	Medium	Natural and/ or social functions and/ or processes are *notably* altered
	Low	Natural and/ or social functions and/ or processes are *slightly* altered
	Very low	Natural and/ or social functions and/ or processes are *negligibly* altered
	Zero	Natural and/ or social functions and/ or processes remain *unaltered*
Duration of impact	**Long-term**	More than 10 years after construction
	Medium-term	Up to 5 years after construction
	Construction-term	Up to 3 years

(v) A description of the proposed method of assessing duration and significance;

The SIGNIFICANCE of an impact is derived by taking into account magnitude, duration and extent of each impact. The criteria employed in arriving at the different significance ratings is shown in Table 3.

TABLE 3: DEFINITION OF SIGNIFICANCE RATINGS

Significance ratings	Level of criteria required
High	• High magnitude with a regional extent and long-term duration • High magnitude with either a regional extent and medium-term duration or a local extent and long-term duration • Medium magnitude with a regional extent and long-term duration
Medium	• High magnitude with a local extent and medium-term duration • High magnitude with a regional extent and construction period or a site-specific extent and long-term duration • High magnitude with either a local extent and construction period duration or a site-specific extent and medium-term duration • Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Low magnitude with a regional extent and long-term duration
Low	• High magnitude with a site-specific extent and construction period duration • Medium magnitude with a site-specific extent and construction period duration • Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Very low magnitude with a regional extent and long-term duration
Very low	• Low magnitude with a site-specific extent and construction period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	• Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the PROBABILITY and CONFIDENCE of this impact are determined using the rating systems outlined in Table 4 and Table 5. The significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the REVERSIBILITY of the impact is estimated using the rating system outlined in Table 6.

TABLE 4: DEFINITION OF PROBABILITY RATINGS

Confidence ratings	Criteria
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

TABLE 5: DEFINITION OF CONFIDENCE RATINGS

Probability ratings	Criteria
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

Table 6: Definition of reversibility ratings

Reversibility ratings	Criteria
Irreversible	**The activity will lead to an impact that is in all practical terms permanent.**
Reversible	**The impact is reversible within 2 years after the cause of the impact is removed.**

(vi) An indication of the stages at which the competent authority will be consulted;

Consultation with Competent Authority:

Comment on DSR: The MDARDLEA will be requested to provide comments on the Draft Scoping Report (DSR) in terms of Regulation 7(5) of GN R982 of 2014, when the DSR is made available for public comment. This is to ensure that the Final Scoping Report (FSR) contains sufficient information for the MDARDLEA to make an informed decision and to ensure these reports satisfy the content requirements listed in the 2014 EIA Regulations. In terms of these regulations, the MDARDELA is required to submit comments within 30 days of the request for comment.

Once the 30-day PPP of the DSR has been completed, a Comment and Response Report (CRR) will be compiled and will incorporate any comments received and responses thereto. The DSR will be finalised, taking cognisance of any comments received. The FSR, including the CRR, will be submitted to the MDARDLEA for review. This CRR will be continuously updated throughout the project, until the Final EIR is submitted.

Comment and decision on FSR: In terms of Regulation 22 of GN R 982, the Competent Authority (DEA) must, within 43 days of receipt of the FSR, consider it, and in writing – Accept the report and advise the EAP to proceed with the tasks contemplated in the Plan of Study for EIA. Refuse Environmental Authorisation if the proposed activity is in conflict with a prohibition contained in legislation. Or if the Scoping Report does not substantially comply with the objectives and content requirements for scoping reports in terms of the 2014 EIA Regulations and the applicant cannot ensure compliance with these regulations within the prescribed timeframe.

Comment on Draft EIR: Should the FSR and Plan of Study for the EIA phase be accepted by the competent authority, the Draft EIR will be compiled. The MDARDLEA will be requested to provide comments on the Draft EIR in terms of Regulation 7(5) of GN R982 of 2014 when it is made available for public comment. This is to ensure that the that the Final EIR contains sufficient information for the MDARDLEA to make an informed decision and to ensure these reports satisfy the content requirements listed in the 2014 EIA Regulations. The MDARDLEA will be required to submit comments within 30 days of the request for comment.

Comment and decision on the Final EIR: In terms of Regulation 24 of GN R982, the MDARDLEA must within 107 days of receipt of the EIR and EMPr, in writing – Grant environmental authorisation in respect of all or part of the activity applied for. Or refuse environmental authorisation.

The above consultation opportunities with the MDARDLEA are based on the requirements of the EIA Regulations. However, additional consultation with the MDARDLEA may be required, depending on the outcome of the PPP.

(vii) Particulars of the public participation process that will be conducted during the environmental impact assessment process; and

In total three opportunities for public participation during the EIA process have been and will be provided, namely:

Initial comment period: Background Information Documents (BIDs) and notification letters were provided to affected and neighbouring landowners and other stakeholders. A site notice was placed on the site perimeter on 24 July 2020, and a newspaper advertisement was placed in the Lowvelder on 23 July 2020.

Scoping Phase comment period (30 days): The DSR will be released for comment for an official 30-day public comment period. I&APs will be given the opportunity to submit comments on the DSR and the Plan of Study for EIA. The DSR will be placed on Core Environmental Services' website during this period.

EIA Phase comment period (30 days): Similar to the DSR, the Draft EIR will be subjected to a 30-day public comment period, during which all I&APs will be offered an opportunity to comment on the proposed project

Throughout the EIA process, I&APs have the opportunity to contact the EAP to discuss the project and raise any issues or concerns they might have.

(viii) A description of the tasks that will be undertaken as part of the environmental impact assessment process;

The following tasks are proposed to be undertaken during the EIA Process:

Appointment of specialists: Should additional specialist studies be required as a result of comments and information received from I&APs, organs of state, commenting authorities and/or the Competent Authority, the relevant specialists will be appointed to undertake these studies.

Compilation of Draft EIR: The compilation of the Draft EIR will take cognisance of any comments received from I&APs, organs of state, commenting authorities, and/or the Competent Authority during the Scoping Phase. The Draft EIR will incorporate these comments and the necessary changes will be made to the report, where applicable. The Draft EIR will also incorporate the findings from any additional specialist assessments undertaken.

All comments received during public comment period on the Draft EIR will be compiled into a CRR. Responses to comments received will also be included.

A Draft EMPr will incorporate mitigation measures identified and obtained during the Scoping and EIA Phases, with the proviso that non-feasible mitigation measures will be discussed but will be clearly identified as being non-feasible. The EMPr will be used to enforce the mitigation measures and ensure that the impacts of all phases of the proposed project are properly managed and addressed. The EMPr will meet all the requirements of Appendix 4 of GN R982 of 2014.

30-day PPP on the Draft EIR: As mentioned in (viii) above, the Draft EIR will be subjected to a 30-day public comment period, during which all registered I&APs will be offered an opportunity to comment on the proposed project.

Compilation of Final EIR for submission: The compilation of the Final EIR will take cognisance of any comments received from interested and affected parties, organs of state, commenting authorities, and/or the Competent Authority. The Final EIR will incorporate these comments and the necessary changes (if any) will be made to the report. All comments received will be compiled into a CRR.

The Draft EMPr will be finalised to include any comments received during the PPP and submitted to the Competent Authority for consideration and decision.

(ix) Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

Suitable mitigation measures that can be adopted to reduce or avoid negative impacts and improve positive impacts for the project will be identified in detail during the EIA-phase. These mitigation measures will be included in the EIR and will be incorporated into the EMPr during the EIA Phase. Some high-level mitigation measures have been identified in the Scoping phase:

1. **Impact on Fauna and Flora**

It must be ensured that vegetation removal is restricted to the proposed agricultural area. Operational activities shall be restricted to the development footprint. An alien and invasive vegetation control plan should be developed and implemented to inhibit alien plant establishment and proliferation. Vegetation removed may not be pushed into drainage lines or watercourses.

Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used; and footprint areas should be kept as small as possible when removing alien plant species. Should any protected plant species be encountered within the subject property in the future, the following should be ensured: ensure effective relocation of individuals to suitable offset areas; and all rescue and relocation plans should be overseen by a suitably qualified specialist. Ensure that operational related activities are kept strictly within the footprint area.

2. **Impact on Surface Water**

Any area where active erosion is observed must be immediately rehabilitated in such a way as to ensure that the hydrology of the area is re-instated to conditions which are as natural as possible. Ensure that operational activities do not affect watercourses on the site. Wetland areas must be protected and a buffer area must be imposed on such areas. Water consumption are to be regulated as per the requirements of the Water Use License.

3. **Social Impacts**

Continue to recruit local labour and contractors as far as feasible. Employ labour-intensive methods where feasible.

4. **Visual Impacts**

The visual impact is very low as the surrounding land owners live far from the area proposed for development.

5. **Dust Impacts**

Dust will mostly be generated during the removal of vegetation and therefore measures must be taken to reduce this impact during this phase of development.

6. **Impacts of Hazardous Substances**

The management and protection of the environment would be achieved through the implementation of the EMPr, which, specifies the storage details of hazardous compounds and the emergency procedures to follow in the event of a spillage.

Typical mitigation measures include storage of the material in a bunded area, with a volume of 110% of the largest single storage container or 25% of the total storage containers whichever is greater, refuelling of vehicles in designated areas that have a protective surface covering and utilisation of drip trays for stationary plant.

For each impact assessed, mitigation measures will be proposed to reduce and / or avoid negative impacts and enhance positive impacts. The mitigation measures identified will be incorporated into the EMPr during the EIA Phase to ensure that they are implemented throughout the lifecycle of the proposed project. The EMPr would become a legally binding document should this project receive EA.

9. REFERENCES

National Environmental Management Act 107 of 1998 (NEMA 107, 1998)

General Notice Regulation 982, 983, 984 and 985 of 2014 (as amended in 2017)

Mpumalanga Biodiversity Conservation Plan, 2014

National Water Act 36, 1998

IUCN World Heritage Evaluations, 2018