



GEOHYDROLOGY

GEOTECHNICAL

ENVIRONMENTAL

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## Consultation Scoping Report

L20 096 E



### CONSULTATION SCOPING REPORT FOR THE PROPOSED CLEARANCE OF ± 430 HA OF INDIGENOUS VEGETATION FOR CROPLANDS AND ORCHARDS ON THE FARM VOORSPOED 836 MS IN THE WEIPE AREA, MUSINA LOCAL MUNICIPALITY, VHEMBE DISTRICT, LIMPOPO

January 2021

Prepared for: Factaprops 128 (Pty) Ltd  
Compiled by: JH Botha & L Wendel  
Document version 1.0 – Draft



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## 1 GENERAL INFORMATION

AGES Limpopo (Pty) Ltd was appointed by **Factaprops 128 (Pty) Ltd** to conduct an Environmental Impact Assessment in order to obtain the necessary environmental authorisation for the clearance of  $\pm$  400 ha of indigenous vegetation for new orchards and croplands.

### 1.1 Project Objective

This Scoping Report was done with the objective to supply the Limpopo Department of Economic Development, Environment and Tourism (LEDET) with the necessary environmental information to make an informed decision regarding the approval of the Scoping Report and the Plan of Study for environmental impact assessment.

This Scoping Report was done to comply with the requirements of the environmental regulations promulgated on 04 December 2014 as amended on 07 April 2017.

These regulations are promulgated in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

- **The following activities require a full Environmental Impact Assessment (EIA) process in terms of Regulation 984 of 4 December 2014 (as amended) of the NEMA and authorization by LEDET:**
  - Activity 13 - The physical alteration of virgin soil to agriculture of 100 hectares or more.”
  - Activity 15 - The clearance of an area of 20 hectares or more of indigenous vegetation.  
**During the EIA process, the areas suitable for agricultural development will be identified.  
Approximately 430 ha of the study area will be cleared for new croplands and orchards.**
- **The following activities require a Basic Environmental Impact Assessment (BA) process in terms of Regulation 985 of 4 December 2014 (as amended) of the National Environmental Management Act, and authorization by LEDET:**
  - Activity 12(e)(ii) - The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan within critical biodiversity areas identified in bioregional plans.  
**The area to be cleared is situated within an area classified largely as an Ecological Support Area 1 (ESA1).**
- **According to the National Forests Act, 1998 (Act No. 84 of 1998) and the Limpopo Environmental Management Act, 2003 (Act No. 7 of 2003) permits will be required for the removal of any of the protected trees on site.**

## **2 PROJECT DESCRIPTION**

### **2.1 Project locality**

The proposed land clearance will take place on the farm Voorspoed 836 MS, located approximately 48 km west-northwest of Musina, directly north of the Pontdrift road (R572). This farm has recently been consolidated and was known as Newmark 121 MS prior to its consolidation.

See attached locality map – Appendix 1.

Alternative 1 (only option) is situated at the following coordinates:

**22°12'21.08"S      29°36'10.72"E**

### **2.2 Nature of activity**

The proposed project will entail the following (see attached map in Appendix 1):

- Clearance of approximately 430 ha of indigenous vegetation for croplands and orchards.
- Water for irrigation will be sourced from the existing lawful use owned by the farming company who will manage these croplands and orchards.
- Areas designated for croplands will allow for crop rotation.
- Construction of pipelines from the storage dam/s and/or boreholes to the croplands and orchards. These pipes will have a diameter of less than 360 mm with routes to be determined and indicated in the EIA reports to follow.

### **2.3 Need for new croplands and orchards**

The production of cash crops during the winter months rely completely on the availability of irrigation water, while the citrus orchards require a sustainable source of irrigation water throughout the year. The Limpopo River is the only reliable source of good quality irrigation water to provide enough water and water is abstracted according to the existing lawful water use owned by the farming company who will manage these croplands and orchards.

The Water Balance Calculation indicated in Figure 1 shows that sufficient water is available for the proposed development from the existing lawful water use owned by the farming company who will manage these croplands and orchards.



<b>Annual water balance - Voorspoed 836 MS</b>			
<b>Sources of water in m<sup>3</sup></b>			<b>Totals (m<sup>3</sup>)</b>
Legal water use from boreholes			8 436 894
Legal water use from rivers			8 436 894
			-
Total			<b>16 873 788</b>
	<b>Ha</b>	<b>Need m<sup>3</sup>/ha/year</b>	<b>Totals (m<sup>3</sup>)</b>
Current croplands	250	12 000	3 000 000
Current orchards (citrus)	550	12 000	6 600 000
Current orchards (citrus)	50	12 000	600 000
Future croplands	100	7 000	700 000
Future orchards (citrus)	330	8 000	2 640 000
Totals	1280		13 540 000
Surplus / Deficit (-)			<b>3 333 788</b>

**Table 1. Water Balance Calculation**

There is a constant growth in demand for citrus both locally and as exports to earn foreign exchange. The existing citrus orchards on the surrounding farms owned by the applicant has reached the end of its productive lifespan and must be replaced with young trees. The new orchards will ensure that the farming operation remains viable with continued production, contributing to food security, job creation and stimulation of the economy and the croplands will provide income in the short term while the citrus orchards mature into production.

### 3 CONSIDERATION OF ALTERNATIVES

In the EIA process, the consideration of alternatives is always important, should the proposed site not fit into the parameters of the EIA framework. The alternatives can be categorised as follows.

- Location alternatives
- Process alternatives
- No-Go alternative

### 3.1 Location alternatives

The entire farm was investigated – Figure 1.

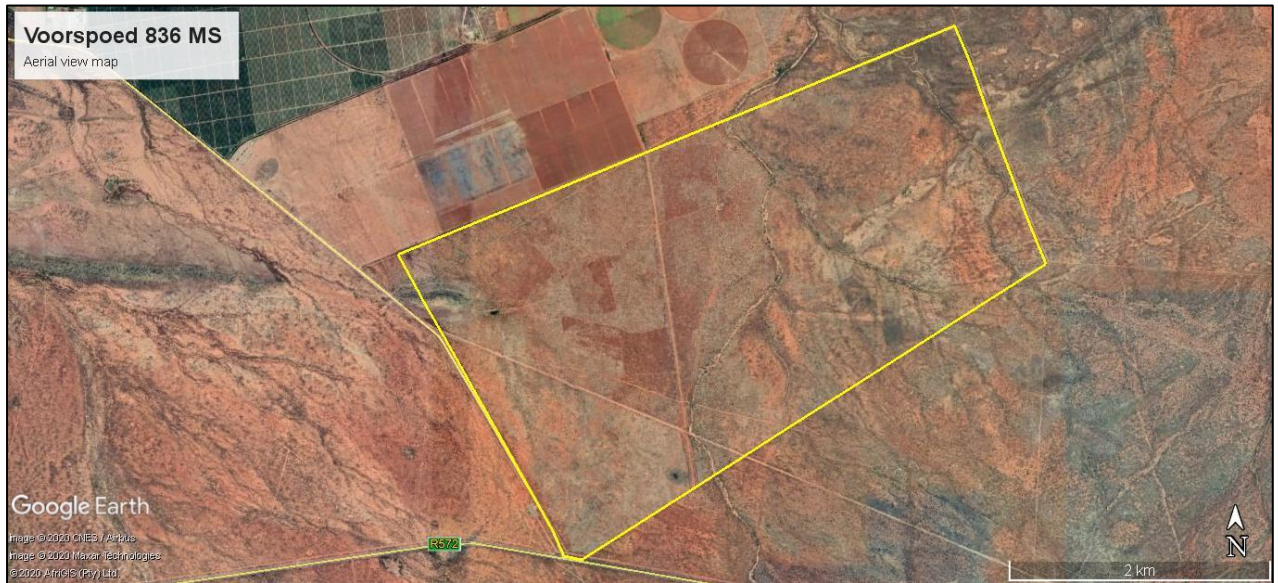


Figure 1. Aerial view of study area

Following the ecological, archaeological and palaeontological assessments the following areas were determined suitable for croplands and/or orchards development – Figure 2.

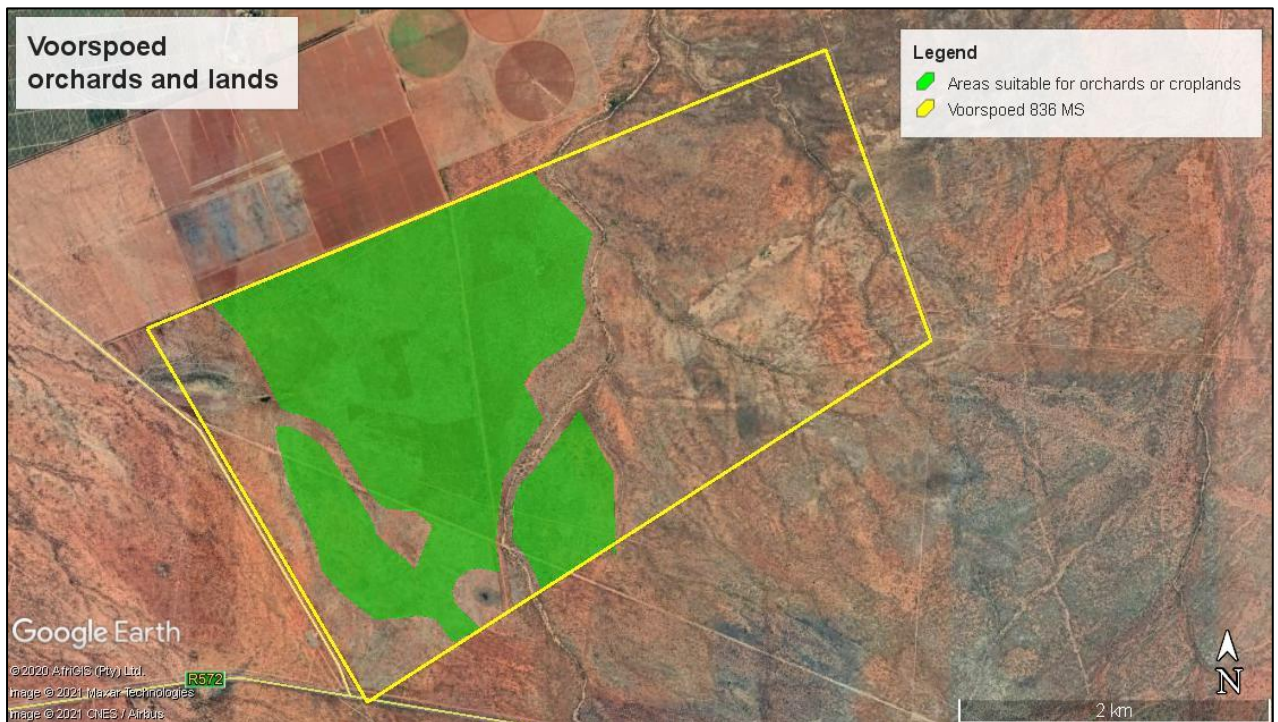


Figure 2. Areas suitable for croplands or orchards

### **3.2 Process alternative**

The following alternatives are being investigated to minimise the impact on the environment:

- Soil analysis will be used to determine the best farming options.
- The use of organic compost will be investigated as well as minimum use of chemicals and insecticides as required by GLOBALG.A.P accreditation.
- Alternatives like different irrigation methods, etc., will be investigated to minimise the impact on the environment.

### **3.3 No go alternative**

This option will be addressed in the EIAR.

## 4 ENVIRONMENTAL SCREENING REPORT

The following environmental sensitivities are identified for the project area – Appendix 6:

### Renewable Energy Development Zones (REDZs) and Strategic Transmission Corridors

The project site is situated within the Strategic Transmission Corridors/**International Corridor** as demarcated by the National Department of Environmental Affairs (<https://egis.environment.gov.za/redz>) however the proposed development is outside the current transmission lines and crop production on suitable soils with sufficient water outweighs the opportunity cost of a loss of a possible solar plant.

### South African Conservation Areas Database

According to the Screening Tool Report map the site is situated within a Conservation Area. The SANBI BGIS viewer however shows no conservation area overlapping with the site, and that the Limpopo Valley Game Reserve is situated to the south and southeast of the site (<http://bgisviewer.sanbi.org>).

### Agriculture Theme

Sensitivity - Medium

The proposed land use is in line with the agricultural theme and the soils in the project study area are suitable for crop farming under irrigation.

### Animal Species Theme

Sensitivity – Medium

A Terrestrial Biodiversity Assessment (Appendix 3) has been conducted, indicating that the following species may occur on site and that the biodiversity assessment should focus on these species during the field work:

- *Acinonyx jubatus* (cheetah) – Medium Sensitivity
- *Lycaon pictus* (wild dog) – Medium Sensitivity

The predicted impacts on these species possibly occurring in the area will be low, provided that mitigation and management actions proposed, are actioned.

### Aquatic Biodiversity Theme

Sensitivity - Very high

The Terrestrial Biodiversity Assessment has identified river channels, riparian woodland and open water habitats with a high sensitivity. As these habitat types will be avoided during the proposed development it is unlikely that the species utilising these habitat types will be impacted on. This report indicates the areas to be excluded from development.

### Plants species Theme

Sensitivity - Medium

A vegetation survey was conducted and the following red listed and endemic succulents might potentially occur in the area namely *Hoodia currorii* subsp. *lugardii* and *Adenia fruticosa*.

Five tree species listed as protected under the national list of declared protected tree species were observed in the project area (*Adansonia digitata*, *Boscia albitrunca*, *Combretum imberbe*, *Philenoptera violaceae* & *Sclerocarya birrea*). Permits should be obtained from DEFF/LEDET for the eradication of the protected species *on the development sites*.

### **Terrestrial Biodiversity Theme**

Sensitivity - Very High

Addressed in the Terrestrial Biodiversity Assessment Report. The proposed croplands and orchards are located largely in an ESA1 area and development can be considered a compatible land-use, provided management and mitigation measures are actioned.

### **Civil Aviation Theme**

Sensitivity - High

According to the Screening Tool the project area is in a restricted airspace. Various civil aerodromes are located southeast (30 km), southwest (38 km) and west (50 km) respectively.

*The proposed project will not have any impact on civil aviation.*

### **Archaeology and Heritage Theme**

Sensitivity - High – in close proximity to the Mapungubwe Cultural Landscape World Heritage Site

*A Phase 1 Heritage Impact Assessment was conducted and findings, recommendations and mitigation measures will be discussed in the EIAR.*

### **Paleontological Theme**

Sensitivity – Very High

*A Palaeontological Impact Assessment was conducted but no red flags were raised.*

### **Defence Theme**

Sensitivity - Low

## **5 DESCRIPTION OF THE AFFECTED ENVIRONMENT**

### **5.1 Land Use**

The Limpopo River flows, at its closest point approximately 4 km north of the study area. Land use surrounding the study area is game farming with croplands and orchards to the north.

### **5.2 Topography**

The study area is defined as extremely irregular plains to slightly undulating plains. The topography of the area is a mixture of terrains, ranging from flat to moderately undulating plains, outcrops, bottomlands (drainage channels) and moderately undulating hills.

The regional topography is classified as undulating plains while the land slopes down towards the Limpopo River to the north.



### 5.3 Climate

The study area is located in the summer rainfall region of South Africa, with precipitation generally occurring as short, heavy, thunder showers mainly in the period between November and April. The annual average rainfall measured over 30 years at Goeree 10 km east of the farms is 295 mm, occurring mostly in the summer months. Rainfall is very irregular.

The project area should expect hot temperatures, with a maximum above 30°C in summer and 25 to 28°C during winter months. This is an indication of very hot environment. The minimum temperature ranges from 20 to 22°C in summer and 7 to 10 °C in winter months. The winter temperature is mild and signifies that the area does not experience frost. The variation between the maximum and minimum temperatures increases significantly from summer to winter. This is typical of continental type of climate. This is generally a frost-free area.

### 5.4 Regional geology & soils

Most of the area is underlain by the Archaean Beit Bridge Complex, except where it is covered by much younger Karoo sandstones and basalts. The area is mainly underlain by metaquartzite, magnetite quartzite, and leucocratic quartzo-feldspathic gneiss of the Mount Dowe Formation of the Beit Bridge Complex. A small portion of the area is underlain by serpentinite, metapyroxenite and hornblendite of the Messina Suite of the Beit Bridge Complex. Dolerite dykes orientated in a NE-SW direction are prominent in the area, and mirror the orientation of the local geology. An alluvium cover, and deeper soils, particularly along the non-perennial river courses is prominent.

Drainage is towards the north the Limpopo River with occasional north flowing dry riverbeds eroded narrow to wide water gaps through the ridges. Dolerite dykes intruded into the gneissic rock, as either distinct east-west striking, or north- northeast striking features. The larger drainage features are usually filled with sandy to gravelly soils of various thicknesses.

Deeper sandy to sandy-loam soils are associated with flat topography whilst shallow, rocky soils are associated with the undulating hills and rocky outcrops. As a result of the irregular undulating rocky areas, fairly steep rocky slopes, shallow rocky nature of the soils and intensity of rainfall the study area is very susceptible to water erosion, especially on roads and areas denuded of vegetation with a poor herbaceous basal cover. Valley floors are covered by predominantly Oakleaf soils with localized pockets of Clovelly and Hutton soils.

### 5.5 Terrestrial biology

A survey was conducted and Terrestrial Biodiversity Impact Assessment Report compiled by Dr BJ Henning – Appendix 3. The project area lies within the Savanna biome which is the largest biome in Southern Africa. The most recent classification of the area by Mucina & Rutherford (2006) shows the site to be part of the Musina Mopane Bushveld, Limpopo Ridge Bushveld and the Subtropical Alluvial vegetation types.

The Musina Mopane Bushveld vegetation unit (type) is the most diverse Mopane veld type in South Africa with only 2% statutorily conserved and roughly 3% transformed and a least threatened conservation status. The landscape is characterized by undulating to very irregular plains, with some hills. The gravelly hillsides and lower plains form moderately closed to open woodland dominated by *Colophospermum mopane* and *Terminalia prunioides*, while areas with deep sandy soils are characterized by moderately open savanna dominated by *Colophospermum mopane*, *Adansonia digitata*, *Commiphora mollis*, *Grewia flava* and *Combretum apiculatum*.

The Limpopo Ridge Bushveld has a least threatened conservation status with some 18% statutorily conserved in the vegetation type. Only about 1% of this vegetation type is transformed, mainly for cultivation and mining. The landscape varies from slightly undulating plains to moderately undulating hills bisected by drainage channels.

The following vegetation units were identified during the survey:

- Rocky outcrops / ridges
- Rugged *Colophospermum mopane* - *Terminalia prunoides* undulating hills;
- *Colophospermum mopane* woodland on plains:
  - *Colophospermum mopane* sandveld;
  - *Colophospermum mopane* - *Boscia albitrunca* woodland on coarse gravelly soils;
  - *Colophospermum mopane* – *Grewia* woodland on red apedal soils;
  - *Colophospermum mopane* alluvial plains;
  - Very open *Colophospermum* woodland on shallow, gravelly soils (stunted)
- Drainage features:
  - River channels & riparian woodland;
  - Exorheic depression (man-made dam).

## 5.6 Surface drainage

The study area is located within Quaternary Catchment Area (QCA) A71L that forms part of the Northern Limpopo River Catchment Management Area (CMA). The Limpopo River forms the boundary between the site in South Africa and Zimbabwe to the north of the Limpopo River and as such is a shared water resource. The water abstraction from the Limpopo River during high flow periods will be according to the legal registered water use.

The area is generally drained by means of surface run-off (i.e.: sheetwash), with storm water collecting along footpaths, unpaved roads and gullies associated with non-perennial streams, to eventually drain into the regionally important Limpopo River that flows north of the study area. It must be noted that surface flow along the non-perennial streams generally occur only during and directly after heavy precipitation events. Flow along these streams is assumed to mainly represent storm water runoff, with little or no groundwater seepage.

The drainage lines and water courses are indicated on the map in Appendix 3, p.40, Figure 5.

## 5.7 Visual environment

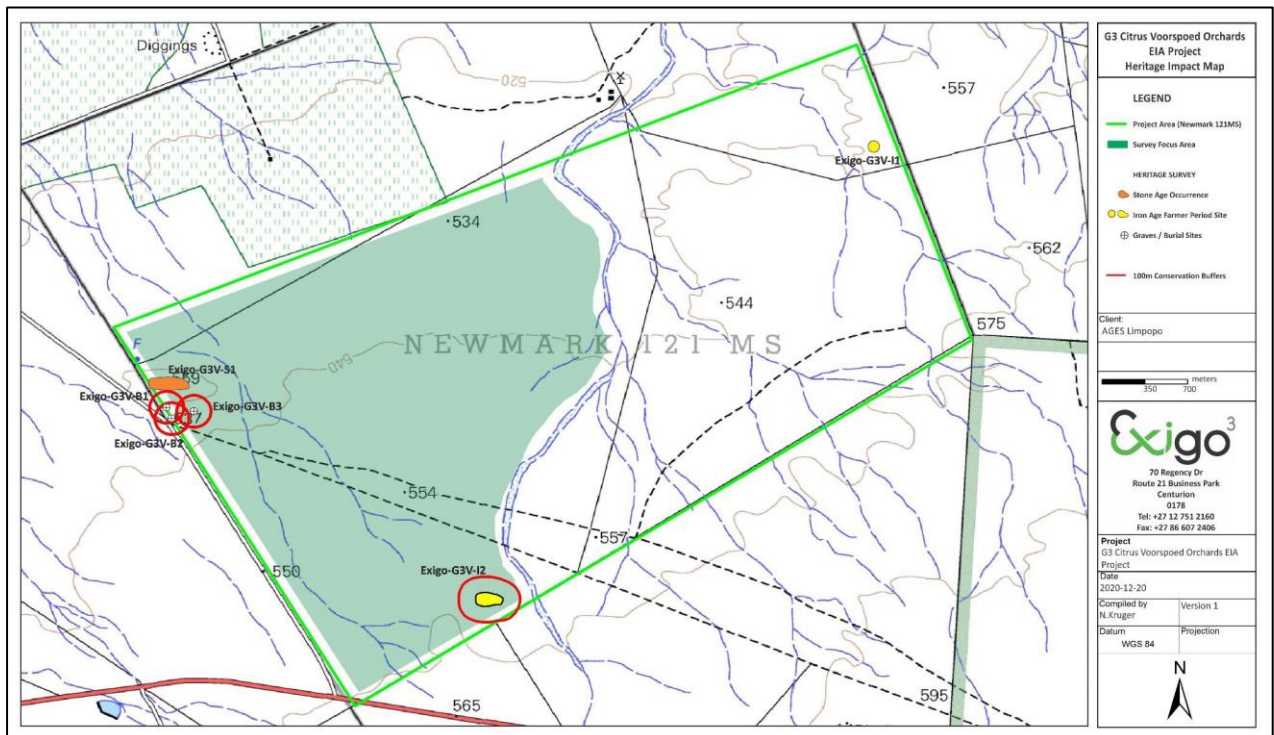
The development of the croplands and orchards is compatible with other land uses in the area.

### 5.8 Air quality and noise

During the construction phase noise and dust will be a factor. Impacts of and mitigation measures for these impacts will be addressed in the draft EIAR.

### 5.9 Archaeological and historical attributes

A survey was conducted and Archaeological Impact Assessment Report (Appendix 4) compiled by Mr N Kruger. Recommendations by the specialist have been considered in determining the areas suitable for croplands and orchards development.



**Figure 3. Topographic map indicating the location of heritage occurrences and proposed conservation buffers as discussed in the text (Appendix 4, p.65, Figure 5-24.**

### 5.10 Palaeontological Assessment

A survey was conducted and Palaeontological Impact Assessment Report compiled by Dr H Fourie – Appendix 5. A walk over survey was done by Dr H Fourie, a palaeontologist in November 2020.

**No fossils were found during the walk-through.** The potential impact of the development on fossil heritage is **VERY HIGH** for the Clarens, Beaufort and Eccia Groups and **MODERATE** for the Quaternary soils and Dwyka Group, therefore a field survey or further mitigation or conservation measures were deemed necessary for this development (according to SAHRA protocol). A Phase 2 PIA and/or Mitigation are only recommended if the Phase 1: Field Study finds fossils (macro) or should fossils be exposed during excavating.

There is some concern with the project due to the presence of the Karoo Supergroup rocks and its fossil wealth. The depth of the Formation can be verified with geological cores. The topsoil, subsoil



and overburden must be surveyed for fossils and Mitigation is needed for the shale layer if fossils are present. The project includes alternatives for the development of the croplands and orchards within the study area.

**Mitigation** is proposed in order to rescue representative fossil material from the study area to allow and record the nature of each locality and establish its age before it is destroyed and to make samples accessible for future research. It also interprets the evidence recovered to allow for education of the public and promotion of palaeontological heritage.

Details of the location and distribution of all significant fossil sites or key fossiliferous rock units are often difficult to be determined due to thick topsoil, subsoil, overburden and alluvium. Depth of the overburden may vary a lot.

The **threats** of the proposed development include:

earth moving equipment/machinery (for example haul trucks, front end loaders, excavators, graders, dozers) during construction;

the sealing-in or destruction of fossils by development, vehicle traffic, planting and human disturbance.

There is **no objection** to the development, but it was necessary to request a Phase 1 Palaeontological Impact Assessment: Field Study to determine whether the development will affect fossiliferous outcrops as the palaeontological sensitivity is regarded as **VERY HIGH**. A Phase 2 Palaeontological Mitigation is only required if the Phase 1 Palaeontological Assessment identified a fossiliferous formation or surface fossils or if fossils are found during excavating or blasting. A *Protocol for Chance Find and Management Plan* is attached to the palaeontological report for the ECO.

### **Conclusions from the palaeontological report**

- All the land involved in the development was assessed and none of the property is unsuitable for development (see Recommendation B).
- All information needed for the Phase 1 Palaeontological Impact Assessment and Field scope was provided by the Consultant. All technical information was provided by AGES Limpopo (Pty) Ltd.
- Areas that would involve mitigation and may need a permit from the South African Heritage Resources Agency are discussed.
- The following should be conserved: if any palaeontological material is exposed during clearing, digging, excavating, drilling or blasting, SAHRA must be notified. All development activities must be stopped and a palaeontologist should be called in to determine proper mitigation measures, especially for shallow caves.
- Condition in which development may proceed: It is further suggested that a Section 37(2)

agreement of the Occupational, Health and Safety Act 85 of 1993 is signed with the relevant contractors to protect the environment (fossils) and adjacent areas as well as for safety and security reasons.

### **5.11 Services**

Details regarding all services will be addressed in the draft EIAR. The service sections below provide an indication of how the specific services are proposed to function at the development.

- **Solid waste management**

The construction of the croplands and orchards will mainly produce household and construction waste. All elements that cannot be re-cycled will be accommodated at the existing landfill in Musina.

- **Access Roads**

The existing access road will be used.

- **Storm water**

A storm water management plan will be compiled for management of stormwater on the development site.

- **Water pipelines**

Pipelines to pump water from the storage dam/s and/or boreholes on adjacent farms managed by G3 Citrus to the croplands and orchards will be constructed. These pipes will have a diameter of less than 360 mm each. Routes will be determined and will be indicated in the CEIAR.

- **Electricity**

Electricity as well as solar power will be used to pump water from the dam/s and/or boreholes to the croplands and orchards.

## **6 LEGAL AND POLICY REQUIREMENTS**

The following is a broad overview of the relevant policy and legal requirements, applicable *but not limited to* the proposed project.

### **Constitution of South Africa (Act no 108 of 1996)**

Section 24 of this Act recognise not only that everyone has a right to an environment that is not harmful to their health or well-being, but it also recognises the notion of sustainable development and its supporting principles.

### **National Environmental Management Act (Act no 107 of 1998)**

This Act defines the concept of sustainability, to ensure that any social or economic development will take place in such a way as to preserve the Environment for present and future generations. This Act also takes into account the pollution principles.

### **National Water Act (Act no 36 of 1998)**

Section 19 of the National Water Act, Act 36 of 1998 requires that all reasonable measures be taken to prevent any water pollution from occurring, continuing or recurring. The Act further describes a number of water-uses and requires that a water use License must be obtained for the specified water uses.

### **National Heritage Resources Act (Act no 25 of 1999)**

The Act makes provision for the undertaking of heritage resources impact assessments for various categories of development as determined by Section 38.

### **Environmental Impact Assessment Regulations (Act no 107 of 1998) – 4 December 2014**

Regulations and guidelines for the implementation of Environmental Impact Assessments.

## 7 KEY ENVIRONMENTAL IMPACTS

The following possible environmental impacts were identified:

<b>ENVIRONMENTAL ISSUES</b>	<b>POSSIBLE CAUSE</b>	<b>POTENTIAL IMPACTS Positive (+) and negative (-)</b>
<b>Air pollution and noise</b>		
Dust	<ul style="list-style-type: none"> <li>Construction machines and vehicles during land clearance and construction of croplands and orchards</li> </ul>	<ul style="list-style-type: none"> <li>Health problems</li> <li>Air pollution</li> <li>Public nuisance</li> </ul>
Noise	<ul style="list-style-type: none"> <li>Construction machines and vehicles during land clearance and construction of croplands and orchards</li> </ul>	
<b>Water quality</b>		
Salt water	<ul style="list-style-type: none"> <li>Irrigation with water with a high salt content</li> </ul>	<ul style="list-style-type: none"> <li>Water quality</li> <li>Lowered yields (crop production)</li> </ul>
Pollution of water sources	<ul style="list-style-type: none"> <li>Spillages of fuel &amp; oil from vehicles</li> <li>Pollution from temporary toilets (chemical toilets and/or pit latrines) &amp; sanitation works</li> <li>Pollution from solid waste</li> <li>Impact from human activity at construction camp</li> </ul>	<ul style="list-style-type: none"> <li>Pollution of surface and groundwater</li> <li>Health risk to humans</li> <li>Lower water quality</li> <li>Soil degradation</li> </ul>
Silt deposition in surface water drainage lines	<ul style="list-style-type: none"> <li>Erosion from cleared areas during construction</li> <li>Erosion risk due to increased run-off from access roads</li> </ul>	
Pollution from temporary sanitation system	<ul style="list-style-type: none"> <li>Leakages of system and incorrect maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Water &amp; soil pollution</li> <li>± Increased / decreased health risk to humans</li> <li>Risk to animals and plants</li> </ul>
<b>Water quantity</b>		
Impact on amount of water resources available	<ul style="list-style-type: none"> <li>Use of water during land clearance and construction of croplands and orchards</li> </ul>	<ul style="list-style-type: none"> <li>Use of a scarce resource</li> </ul>
<b>Land/Soil degradation</b>		
Protect soil quality	<ul style="list-style-type: none"> <li>Irrigation with fresh water from Limpopo River</li> </ul>	<ul style="list-style-type: none"> <li>+ Improved soil quality</li> <li>+ Higher crop production</li> </ul>
Salination of soils	<ul style="list-style-type: none"> <li>Irrigation with saline water</li> </ul>	<ul style="list-style-type: none"> <li>- Degradation of soils</li> <li>- Lower yields (crop production)</li> </ul>

<b>ENVIRONMENTAL ISSUES</b>	<b>POSSIBLE CAUSE</b>	<b>POTENTIAL IMPACTS Positive (+) and negative (-)</b>
Soil contamination and degradation	<ul style="list-style-type: none"> <li>• Spillages of oil, chemicals from machinery and vehicles</li> <li>• Sewerage spillage</li> <li>• Vegetation clearing during construction</li> </ul>	<ul style="list-style-type: none"> <li>- Pollution of soil</li> <li>- Soil degradation</li> <li>- Loss of topsoil</li> </ul>
<b>Biodiversity</b>		
Decline / improvement in fauna and flora diversity	<ul style="list-style-type: none"> <li>• Impact of land clearance and construction of croplands and orchards on biodiversity</li> <li>• Fragmentation and isolation of natural faunal corridors</li> </ul>	<ul style="list-style-type: none"> <li>- Loss of biodiversity and habitat on croplands and orchards footprint</li> <li>± Negative impact on rare / endangered / endemic species and habitats</li> <li>+ Positive impact on biodiversity and habitat</li> </ul>
<b>Cultural/Heritage</b>		
Loss of confirmed heritage sites	<ul style="list-style-type: none"> <li>• Damage during construction of croplands, orchards and pipelines</li> <li>• Destruction of heritage sites</li> </ul>	<ul style="list-style-type: none"> <li>- Possible loss of cultural heritage sites</li> </ul>
<b>Visual impact</b>		
Impact of the croplands and orchards on sense of place	<ul style="list-style-type: none"> <li>• The presence of the croplands and orchards in the dry landscape</li> </ul>	<ul style="list-style-type: none"> <li>± Impact on landscape quality character</li> <li>± Impact on sense of place</li> </ul>
<b>Socio-economic impacts</b>		
Job creation and skills development	<ul style="list-style-type: none"> <li>• Increase in temporary/seasonal employment opportunities during the construction and operational phases</li> <li>• Secure permanent employment because of water availability for irrigation of crops</li> <li>• Possible expansion of lands</li> </ul>	<ul style="list-style-type: none"> <li>+ Socio-economic benefit</li> <li>+ More sustainable farming</li> </ul>

These key areas of impacts will be further explored and described in the environmental impact assessment report to detail the impacts, the impact ratings and mitigation measures.

The following specialist investigations have been conducted and used in assessing the environmental impacts of the different activities which form part of the development:

- Terrestrial Biodiversity Impact Assessment
- Archaeological Impact Assessment
- Palaeontological Impact Assessment

## 8 ENVIRONMENTAL IMPACT DETERMINATION AND EVALUATION

An environmental impact is defined as a change in the environment, be it the physical/chemical, biological, cultural and or socio-economic environment. Any impact can be related to certain aspects of human activities in this environment and this impact can be either positive or negative. It could also affect the environment directly or indirectly and the effect of it can be cumulative.

### 8.1 Methodology to assess the impacts

To assess the impacts on the environment, the process will be divided into two main phases namely the Construction phase and the Operational phase. The activities, products and services present in these two phases will be studied to identify and predict all possible impacts.

In any process of identifying and recognising impacts, one must recognise that the determination of impact significance is inherently an anthropocentric concept. Duinker and Beanlands, (1986) in DEAT 2002 and Thompson (1988), (1990) in DEAT 2002 stated that the significance of an impact is an expression of the cost or value of an impact to society.

However, the tendency is always towards a system of quantifying the significance of the impacts so that it is a true representation of the existing situation on site. This will be done by using legal and scientific standards which are applicable.

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 consequence matrix use parameters like severity, duration and extent of impact as well as compliance to standards. Values of 1-5 are assigned to the parameters that are added and averaged to determine the overall consequence. The same process is followed with the likelihood that consists of two parameters namely frequency and probability. The overall consequence and the overall likelihood are then multiplied to give values ranging from 1 to 25. These values as shown in the following table are then used to rank the significance. It must be said however that in the end, a subjective judging of an impact can still be done, but the reasons for doing so must be qualified.

**Table 1: Significance ratings (Plomp 2004)**

Significance	Low	Low-Medium	Medium	Medium-High	High
Overall Consequence X Overall Likelihood	1-4.9	5-9.9	10-14.9	15-19.9	20-25

Significance	Low +	Low-Medium +	Medium +	Medium-High +	High +
Overall Consequence X Overall Likelihood	1-4.9	5-9.9	10-14.9	15-19.9	20-25

## Description of the parameters used in the matrixes

### Severity:

Low	Low cost/high potential to mitigate. Impacts easily reversible. Non-harmful Insignificant change/deterioration or disturbance to natural environments.
Low-medium	Low cost to mitigate. Small/potentially harmful. Moderate change/deterioration or disturbance to natural environment.
Medium	Substantial cost to mitigate. Potential to mitigate and potential to reverse impact. Harmful Significant change/deterioration or disturbance to natural environment.
Medium-high	High cost to mitigate. Possible to mitigate. Great/Very Harmful. Very significant change/deterioration or disturbance to natural environment.
High	Prohibitive cost to mitigate. Little or no mechanism to mitigate. Irreversible. Extremely Harmful. Disastrous change/deterioration or disturbance to natural environment.

### Duration:

Low	Up to one month
Low-medium	One month to three months
Medium	Three months to one year
Medium-high	One to ten years
High	Beyond ten years

### Extent:

Low	Farm Voorspoed 836 MS (previously Newmark 121 MS)
Low-medium	Within surrounding area
Medium	Within local municipality area
Medium-high	Within Vhembe Region
High	Within Limpopo catchment area

### Frequency:

Low	Once/more a year or once/more during operation
Low-medium	Once/more in 6 months
Medium	Once/more a month
Medium-high	Once/more a week
High	Daily

### Probability:

Low	Almost never/almost impossible
Low-medium	Very seldom/highly unlikely
Medium	Infrequent/unlikely/seldom
Medium-high	Often/Regularly/Likely/Possible
High	Daily/Highly likely/definitely

### Compliance:

The following criteria are used during the rating of possible impacts:

Low	Best Practise
Low-medium	Compliance
Medium	Non-compliance/conformance to policies etc. - internal
Medium-high	Non-compliance/conformance to legislation etc. - external
High	Directive, prosecution for closure or potential for non-renewal of licences or rights

## **9 PUBLIC PARTICIPATION PROCESS – APPENDIX 2**

### **9.1 Newspaper Notice**

The proposed project was advertised in the *Zoutpansberger* on 13 November 2020 to inform people about the proposed croplands and orchards and request them to identify environmental issues of concern. An example of this notice is attached in Appendix 2.

### **9.2 Site Notice**

Site notices in English were fixed at the entrance to the farm on 02 November 2020. An example of this notice as well as photos of the displayed notice is attached in Appendix 2.

### **9.3 Background Information Notices**

Background Information Documents (BID's) were e-mailed or sent by mail to neighbours and interested & affected parties.

Background information documents were also sent to:

- Musina Local Municipality
- Vhembe District Municipality
- Department of Water and Sanitation
- National Department of Agriculture, Land Reform and Rural Development
- Provincial Department of Agriculture
- Department of Rural Development and Land Reform

An example of the Background Information Document is included in Appendix 2 as well of proof of the distribution thereof.

### **9.4 Issues and Responses**

The following parties registered their interest in the project:

- Mr Francois Dillman, Noordgrens Landgoed

Concerns raised:

- Quantity of legal water available to be used for proposed development
- Rehabilitation of old orchards

### **9.5 Scoping Report and Plan of Study for EIA**

The Consultation Scoping Report and Plan of Study for EIA will be made available for a 30-day review period (29 January 2021 – 01 March 2021) to relevant government departments and registered I&AP's.



## **10 PLAN OF STUDY FOR ENVIRONMENTAL IMPACT ASSESSMENT**

The environmental impact assessment process will be based on the actions and findings of the scoping phase.

### **10.1 Tasks to be undertaken**

- The impacts of the physical, biological, social, economic and cultural aspects that were identified in the scoping process will be addressed in detail in the Environmental Impact Assessment Reports.
- All specialist investigations have been conducted (attached to this report) and findings and recommendations will be used for the identification and rating of identified impacts according to the methodology in Section 8 above.

### **10.2 Consultation with the competent authority**

The competent authority will be consulted at the following stages:

- Submission of Consultation Scoping Report (CSR) and plan of study for EIA
- Submission of Final Scoping Report (FSR) and plan of study for EIA
- Submission of application
- Site visit
- Submission of EIAR (Draft & Final)

### **10.3 Methodology to assess environmental issues and alternatives**

This methodology has been described in detail in section 7 of this Consultation Scoping Report (CSR) and will be followed to assess environmental impacts, issues and alternatives.

### **10.4 Public Participation Process**

Any comments or inputs received during or after the 30-day comment period will be included in the Final Scoping Report (FSR) which will be made available for a review-period of 30 days to registered I&APs and will thereafter be submitted to LEDET for approval.

After approval of the Scoping Report, the Consultation Environmental Impact Assessment Report (CEIAR) will be compiled and made available to Registered Interested and Affected parties for a 30-day comment period. It will include proof of all the public participation processes as well as copies of all the specialist reports.

A Final Environmental Impact Assessment Report (FEIAR) will be submitted to LEDET for review and decision-making. It will also be available for a period of 30 days to registered I&AP's.

## 11 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this report is to provide the relevant authority with sufficient information regarding the potential impacts and scope of the development to make an informed decision regarding the approval of the Plan of Study for Environmental Impact Assessment.

The Department is therefore respectfully requested to evaluate and consider this Scoping Report, as part of an application that has been lodged in terms of section 24(5) of the National Environment Management Act, 1998, (Act no 107 of 1998), in respect of the following listed activities:

R984 of 04 December 2014 as amended on 7 April 2017	Listing notice 2, activity 13	<i>"The physical alteration of virgin soil to agriculture of 100 hectares or more."</i>
R984 of 04 December 2014 as amended on 7 April 2017	Listing notice 2, activity 15	<i>"The clearance of an area of 20 hectares or more of indigenous vegetation."</i>
R985 of 04 December 2014 as amended on 7 April 2017	Listing notice 3, activity 12(e)(ii)	<i>"The clearance of an area of 300 square metres or more of indigenous vegetation."</i>

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