ecosphere

Environmental Management Services

Draft EIA Report

Fresca Farms

September 2022

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PART A: EIR

Chapter 1: Details of the Environmental Assessment Practitioner

1 Name and Contact details of the Environmental Assessment Practitioner (EAP)

Table 1: Details of the Environmental Assessment Practitioner (EAP).

Business name of EAP:	**Ecosphere Environmental Management Services**		
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2 Names and Expertise of Representatives of the EAP

Table 2: Details of the representatives of the EAP.

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Christelle Greyling	**MSc Environmental Management**	**SACNASP**	**9**
Annika Cilliers	**Honours in B.Sc. Environmental Science**		**1**

Chapter 2: Introduction

Ecosphere Environmental Management Services has been appointed by Fresca Farms to assist in obtaining Environmental Authorisation for a proposed development that entails the removal of indigenous vegetation and transformation of land for crop production.

The proposed development is set to take place across five farm portions. Fresca Farms is currently renting the five farm portions and in the process of buying them and has obtained landowner consent from the existing landowners. The proposed development footprint will result in the transformation of 148 ha of indigenous vegetation to agricultural land for crop production.

It is important to note that Fresca Farms has recently undertaken two section 24G Applications for partial and complete removal of indigenous vegetation that took place on three on the five farm portions. Ecosphere was appointed by Fresca farms to complete the S24G Applications and undertake the appropriate EA process (Scoping and Environmental Impact Assessment Process) to obtain authorisation for the proposed development.

The proposed development falls within the Madibeng Local Municipality and extends across five farm portions located near Lethlabile Township and 9.7 kilometres from Brits. The proposed development footprint falls within an area that used to form part of a game farm years ago and largely consist of bushveld. It is anticipated the proposed development will result in job creation and contribute to local and national food security.

The Environmental Impact Assessment report aims to provide a detailed overview of the proposed project whereby the proposed activity is described, alternatives are considered the natural and social environment within and around the proposed project are assessed, environmental impacts are identified and details regarding the Public Participation Process (PPP) is provided.

1 Project Description

1.1 Property Details

The project area is situated 9.7 km North of Brits and approximately 0.4 km southwest of Lethlabile in the North West Province (Figure 1). The project area falls under the Madibeng Local Municipality. Table 3 indicates the project GPS location/s and Surveyor General 21 digit codes.

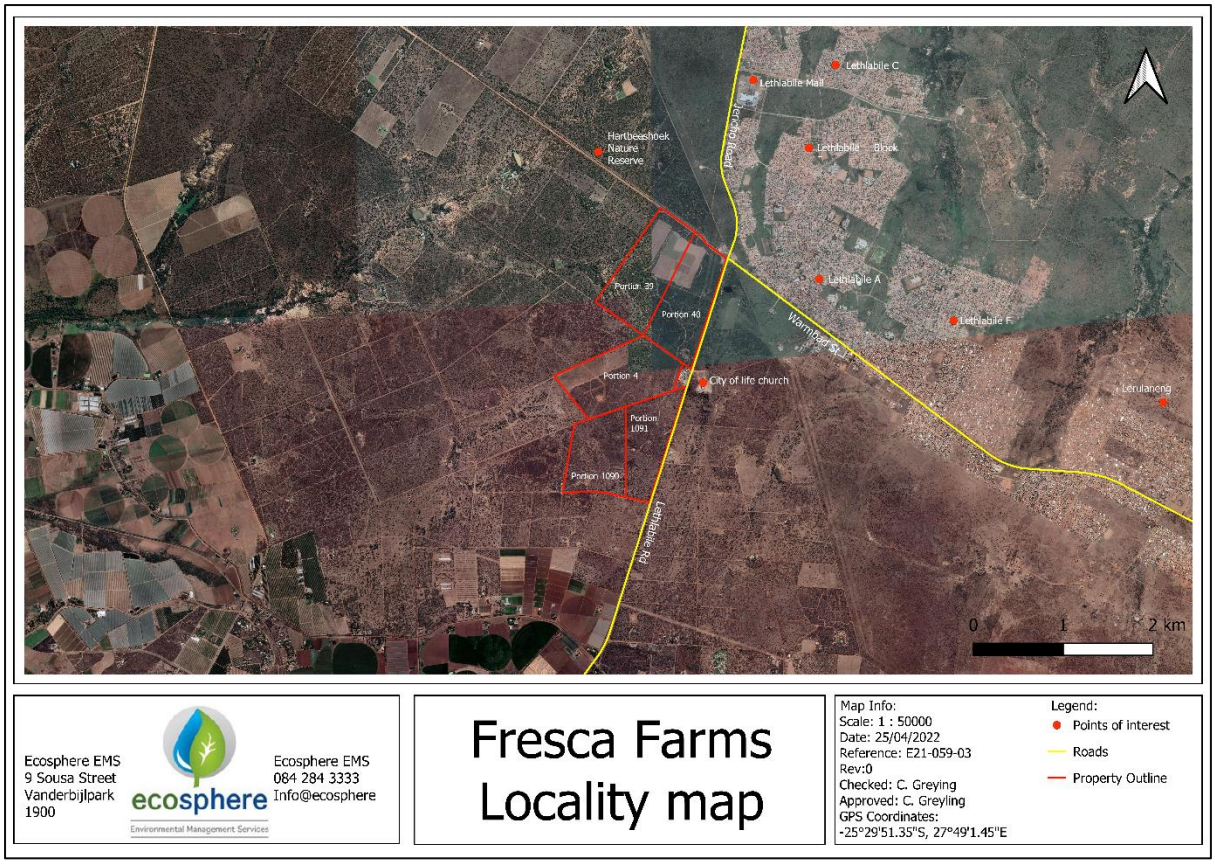


Figure 1: Location of the proposed development

The proposed project entails the transformation of indigenous vegetation for crop production. Fresca Farms intend to transform a few areas located across 5 different farms portions (Table 3) namely:

- Portion 1090, of Farm 419 Hartebeestpoort C
- Portion 1091, of Farm 419 Hartebeestpoort C
- Portion 4, of Farm 241 Blaauwbank
- Portion 39 of Farm 241 Blaauwbank
- Portion 40 of Farm 241 Blaauwbank

Table 3: Provides the property details of the farm portions relevant to the proposed project.

Farm Name	Farm No	Portion	Latitude (S)	Longitude (E)	SG codes
Hartebeestpoort C	419	1090	25°30'14.4S	27°49'8.19E	T0JQ00000000041901090
Hartebeestpoort C	419	1091	25°30'19.64S	27°48'48.23E	T0JQ00000000041901091
Blaauwbank	241	4	25°29'51.51S	27°48'57.47E	T0JQ00000000024100004
Blaauwbank	241	39	25°29'13.69S	27°49'7.44E	T0JQ00000000024100039
Blaauwbank	241	40	25°29'13.69S	27°49'7.44E	T0JQ00000000024100040

1.2 Property Ownership

Fresca Farms is currently renting the five farm portions and is the process of buying them. The current owners of each property can be seen in Table 4.

Table 4: Property ownership

Farm Name	Farm No	Portion	Owner
Hartebeestpoort C	419	1090	Blaauwbank Landgoed Trust
Hartebeestpoort C	419	1091	Blaauwbank Landgoed Trust
Blaauwbank	241	4	Blaauwbank Landgoed Trust
Blaauwbank	241	39	DM Smit Family Trust
Blaauwbank	241	40	DM Smit Family Trust

1.3 Surrounding Land uses

The proposed project area is situated 9.7 km North of Brits and 2.1 km southwest of Lethlabile in the North West Province The proposed development is consistent with the activities within the larger surrounding environment. The immediate area surrounding the proposed development site consist of a natural bushveld and a game farm as well as Lethabile informal settlement. The following land uses are located around the development:

- River, stream, and wetlands
- Dam or reservoirs
- Natural veld
- Agricultural fields
- Game Farms
- Informal residential areas
- Service stations
- Church
- Retail
- Offices
- Secondary roads

2 Scope of the Project

The area within which the project falls formed part of a game farm years ago but has during subsequent years not been utilised as such. The area consists of small shrubs, scattered trees and a variety of grasses. The proposed project entails the transformation of indigenous vegetation for crop production. Fresca Farms intend to transform a few areas located across 5 different farms portions namely:

- Portion 1090, of Farm 419 Hartebeestpoort C
- Portion 1091, of Farm 419 Hartebeestpoort C
- Portion 4, of Farm 241 Blaauwbank
- Portion 39 of Farm 241 Blaauwbank
- Portion 40 of Farm 241 Blaauwbank

The approximate extent of the area of indigenous vegetation that will be transformed per farm portion are as follows:

Table 5: Proposed extent of project area per farm portion.

Farm Portion	Project extent (ha)
Portion 1090 of Farm 419 Hartebeestpoort C	59
Portion 1091, of Farm 419 Hartebeestpoort C	
Portion 4, of Farm 241 Blaauwbank	50
Portion 39 of Farm 241 Blaauwbank	91

Portion 40 of Farm 241 Blaauwbank	

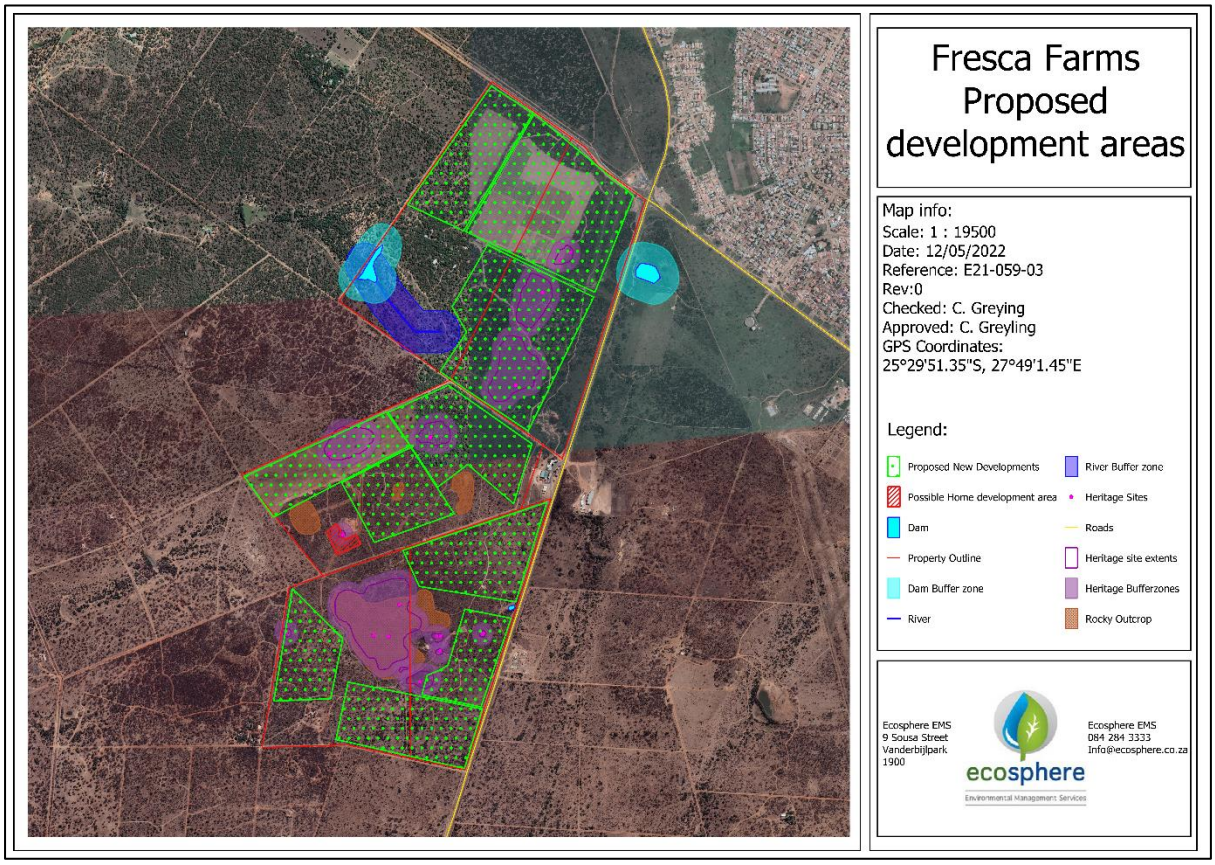


Figure 2: Proposed development layout map

It is important to note that a S24G process is currently underway for sites that were cleared from indigenous vegetation by Fresca Farms within the proposed project area before obtaining environmental authorisation. The extent of the proposed development can be seen in Figure 3.

Table 6:Areas S24G application

Farm Portion	S24G development area (ha)
Portion 1090 of Farm 419 Hartebeestpoort C	N/A
Portion 1091, of Farm 419 Hartebeestpoort C	
Portion 4, of Farm 241 Blaauwbank	19.8
Portion 39 of Farm 241 Blaauwbank	32.13
Portion 40 of Farm 241 Blaauwbank	

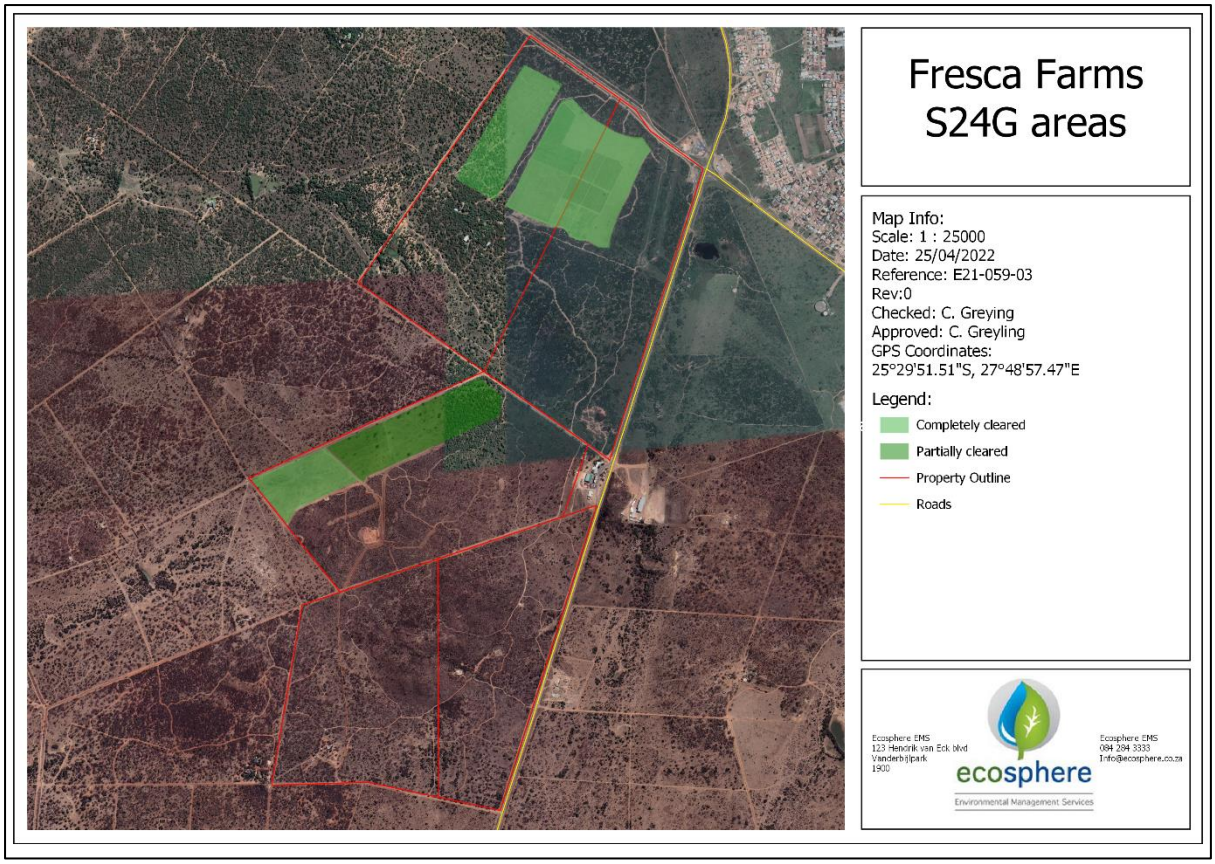


Figure 3: S24G developments map

3 Policy and legislative context

Table 7: Legislation that is applicable to the application as contemplated in the EIA regulations.

Title of legislation, policy, or guideline	Description of applicable document	Administering authority	Date	Relevance to the Proposed Project
Legislation				
The Constitution of the Republic of South Africa (Act No. 108 of 1996)	Everyone has the right to an environment that is not harmful to their health or well-being.	Constitutional court	1996	This EIA is conducted to align with the requirement of the Bill of Rights.
National Environmental Management Act (Act No. 107 of 1998)	Serves as the framework for all environmental legislation in South Africa.	Department of Environmental Affairs	1998	The proposed project will result in the removal of indigenous vegetation and therefore have an environmental impact.
Environmental Impact Assessment Regulations (GN R. 983 of 2014)	Regulates the procedure and criteria as defined in NEMA.	Department of Environmental Affairs	2014	The activity of removing indigenous vegetation will trigger an activity under listing notice 2 and listing notice 3.
The National Water Act (Act No. 36 of 1998)	Forms the basis for the management of South Africa's water resources.	Department of Water Affairs and Sanitation	1998	There are surface water resources in and around the property where the proposed development will take place.

National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Management and conservation of the indigenous biological diversity and the sustainable use of biological resources in South Africa.	Department of Environmental Affairs	2004	Certain species and ecosystems may be impacted on by the removal of indigenous vegetation for the proposed transformation of land for crop production.
Alien and Invasive Species Regulations	This Act aims to eradicate the spread and growth of Alien and Invasive Species	Department of Environmental Affairs	2014	The disturbance caused by the proposed development could favour the spread and establishment of alien and invasive species.
National Environmental Management: Protected Areas Act (Act No. 57 of 2003)	Manage and conserve South Africa's biodiversity (protected areas) within the framework of national legislation.	Department of Environmental Affairs	2003	To consider the proposed development footprint in relation to legislated protected areas.
The Conservation of Agricultural Resources Act (CARA)(Act No. 43 of 1983)	Promote the conservation of soil, water use as well as vegetation and provides requirements for the control of alien and invasive species.	Department of Environmental Affairs	1983	The proposed project is to align itself with CARA to ensure that the applicant's agricultural practices are sustainable when it comes to the use of water, soil and vegetation. Alien and invasive species that may occur within the proposed project area must be managed according to CARA.
National Heritage Resources Act (Act No. 25 of 1999)	Conservation and management of national heritage resources (archaeological and historically significant).	Department of Environmental Affairs	1999	A Heritage Impact Assessment is required for the proposed development, as the proposed development will according to section 38 subsection 1(a) the Heritage Resources Act change the character of the entire site if the development exceed 5000m^2(0.5ha) in extent. A Heritage Impact Assessment was conducted and found that there were areas with heritage importance within the farm portions where the proposed development will take place.
Noise Control Regulations, 1992 (GN R.154)	Governs the way by which noise should be regulated to prevent noise that can cause harm or act as a nuisance.	Madibeng Local Municipality	1992	The act was considered as the proposed development will result in some noise when the area is being cleared of vegetation.
National Forest Act (Act No. 84 of 1998)	Natural forests and woodlands form an important part of the environment and	Department of Agriculture, Forestry and Fisheries	1998	Two permits for tree removal have already been obtained: • Licence/Permit for the disposal of indigenous

	need to be conserved and developed according to the principles of sustainable management. The act protects forests and specific tree species.			trees (Licence no. 03-06-21/23) • Licence/Permit for the disposal of protected trees (Licence no. 02-06-21/23)
National Veld and Forest Fire Act (Act No. 101 of 1998)	The purpose of this Act is to prevent and combat veld, forest and mountain fires throughout South Africa.	Department of Environmental Affairs	1998	The proposed project entails that an area of indigenous vegetation will be transformed to agricultural land for crop production. Firebreaks will be required to ensure that when a fire occurs it doesn't jump from the applicable properties to a neighbouring property. Necessary precautions should be included in the EMPr in case of a fire and the prevention thereof.
Plan				
North West Biodiversity Sector Plan	To provide appropriate overview of environmental resources to allow for appropriate mitigation and avoidance measures to conserve and maintain biodiversity and major ecological structures.. It identifies a network of Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) in the province	The North-West Department of Rural, Environment, and Agricultural Development (READ)	2015	The farm portions on which the proposed project area falls are located within the North West Province and according to the spatial data provided by the Sector Plan and areas within the applicable farm portions fall within the a CBA and ESA.

3.1 Constitution of the republic of South Africa

The Bill of Rights in chapter 2 section 24 of the Constitution of South Africa Act (Act 108 of 1996) makes provisions for environmental issues and declares that:

"Everyone has the right –

i. to an environment that is not harmful to their health or well-being; and
ii. to have the environment protected, for the benefit of present and future
iii. generations, through reasonable legislative and other measures that:

a. prevent pollution and ecological degradation.
b. promote conservation; and
c. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development".

One of the objectives of the proposed development is to ensure that the development takes place in accordance with the Section 24 of the Bill of Right by taking reasonable steps to prevent pollution and ecological degradation as well as support ecological sustainable development and use of resources whilst promoting socio-economic development within the surrounding community.

3.2 National Environmental management Act and the EIA Regulations

The National Environmental Management Act (NEMA)(Act107 of 1998) governs the way in which decisions that impact the environment should be made. The NEMA Environmental Impact Assessment Regulations (2014, as amended) aim to prevent and mitigate detrimental environmental impacts through the provisioning of a criteria and procedure that must be followed with regards to activities that require Environmental Authorisation. The type of Environmental Authorisation required will be dependent on the nature of the proposed development that can be assessed based on the listed activities prescribed in Listing Notice 1 (GN R 327), Listing Notice 2 (GN R 325) and Listing Notice 3 (GN R 324) as amended and published in terms of Section 24 of NEMA. Activities that fall under Listing Notice 1 and Listing Notice 3 requires a Basic Assessment whilst activities under Listing Notice 2 requires a Scoping and Environmental Impact Assessment Process. Activities that have been considered are listed in the table below

3.2.1 Activity description

The proposed project triggers the following listed activities which will require that an Environmental Impact Assessment (EIA) process is undertaken in accordance with the EIA regulations, 2014 (promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as amended in April 2017.The triggered activities are listed in Table 8.

Table 8: Applicable listed activities.

Government Notice	Activity No	Description of listed activity	Comments
Listing Notice 2, GNR984 as amended	15	The clearance of an area of 20 hectares or more of indigenous vegetation.	The Applicant plans to clear over 200ha of vegetation. The applicant intends to transform this area into crop agriculture. An EIA application form must be completed to obtain authorisation for this activity.
Listing Notice 3	12 h (iv)	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	The Applicant plans to clear over 200ha of vegetation. The applicant intends to transform this area into a crop agriculture. The property

		Accordance with a maintenance management plan. (h) North-West. (iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.	falls within a terrestrial CBA.

3.3 The National Heritage Resources Act

The National Heritage Resources Act (Act 25 of 1999) regulates the way in which South Africa's heritage resources are managed.

A Heritage Impact Assessment was conducted for the proposed development, as the proposed development will change the character of the entire site (73.2312 ha). As per the National Heritage Resources Act (No. 25 of 1999), section 38 subsection 1(a), which specifies that:

1. Subject to the provisions of subsection (7), (8) and (9) any person who intends to undertake a development categorised as –
    c. any development or other activity which will change the character of a site—e
        i. exceeding 5 000 m2 (0.5 ha) in extent

3.4 The National Water Act

The DWS is the custodian of South Africa's water resources and therefore assumes public trusteeship of water resources, which includes watercourses, surface water, estuaries, or aquifers. The National Water Act (Act No. 36 of 1998) (NWA) allows for the protection of water resources, which includes:

- The maintenance of the quality of the water resource to the extent that the water resources may be used in an ecologically sustainable way;
- The prevention of the degradation of the water resource; and
- The rehabilitation of the water resource.

A watercourse means:

- A river or spring.
- A natural channel in which water flows regularly or intermittently.
- A wetland, lake, or dam into which, or from which, water flows; and
- Any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks.

The NWA recognises that the entire ecosystem and not just the water itself, and any given water resource constitutes the resource and as such needs to be conserved. No activity may therefore take place within a watercourse unless it is authorised by the DWS. Any area within a wetland or riparian zone is therefore excluded from development unless authorisation is obtained from the DWS in terms of Section 21 (c) and (i).

During the Aquatic ecological Impact assessment, a historical dam was located on the property, this dam does however not fall under the scope of the current project as the development will not have an impact on this freshwater resource and the dam does not trigger any listing notices under NEMA. A 100m buffer was set around the dam and river and if the

buffer set in place cannot be maintained a water use license will need to be applied for under section 21 b, c and i. It is however recommended that Fresca Farms obtains a Water Use license for the unauthorised historic dam.

4 Need and Desirability of the project

There is a need for the proposed transformation of land for agricultural activities as it will contribute to food security and provide various opportunities in the local community. Employment and training opportunities will be created for local farm workers as well as contractors and this will ultimately boost the local economy.

The proposed development will be in line with the IDP and SDF of the Madibeng Local municipality by contributing towards the objectives of job creation and protection of agricultural resources, as the development does not intend to change the existing land use of the property.

Chapter 3: Description of the Affected Environment and Environmental Attributes

1 Biophysical Environment

1.1 Climate

The climate of the Madibeng LM region is classified as a dry, grassy plain, temperate climate. At an average temperature of 23.5 °C, January is the hottest month of the year. The lowest average temperatures in the year occur in July, when it reaches around 12.6 °C. Precipitation is the lowest in July, with an average of 3 mm and the greatest amount of precipitation occurs in December, with an average of 118 mm. Between the driest and wettest months, the difference in precipitation is 115 mm. The variation in temperatures throughout the year is 10.9 °C (Climate-data, 2021).

Table 9: Annual climate data.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Avg Temperature ^{0}C	23.5^0 C	23.4^{0}C	21.9^{0}C	18.9^{0}C	15.8^{0}C	12.8^{0}C	12.6^{0}C	16^{0}C	20^{0}C	22.1^{0}C	22.5^{0}C	23.2^{0}C
Precipitation (mm)	102	95	82	38	17	6	3	7	17	57	87	118
Humidity (%)	60%	57%	58%	58%	51%	49%	43%	36%	33%	41%	51%	59%
Rainy days	11	9	8	5	2	1	0	1	2	6	9	11
Sunny hours	9.7	9.7	9.1	8.6	9.0	8.9	9.1	9.5	9.9	10.1	10.0	10.1

1.2 Topography

The area is about 1200m above sea level. The terrain within which the proposed development falls is relatively flat with a few rocky outcrops and an area that gently slopes towards a drainage line

1.2.1 Gradient of the site

The terrain within which the proposed development falls is relatively flat with a general gradient of 1:50 – 1:20.

1.2.2 Location in the landscape

The proposed development falls under the undulating plain/low hills landscape which means that the area consists of mostly flat land with some gentle wave slopes between 0-2%.

1.3 Heritage and Palaeontology

The Department of Forestry, Fisheries and the Environment' (DFFE's) Web based Environmental Screening Tool spatial data identified that the proposed development site falls within a low sensitivity area in terms of archaeological and cultural heritage and a medium sensitivity area in terms of palaeontology.

This means that the project area has a low potential for archaeological, cultural, heritage and paleontological findings and a medium potential for paleontological findings. Based on Section 38 (1) (c) (iii) of the National Heritage Resources Act 1999 (Act 25 of 1999), a Heritage Impact Assessment (HIA) of the proposed project is required when the proposed development footprint is more than 5000m² in extent. Therefore, a Heritage Impact Assessment was conducted as the development triggers an activity listed in the National Heritage Act (No 25 of 1999).

An archaeological and historical background study was undertaken by PGS Heritage using available sources. Previous archaeological and heritage studies from the study area and surroundings were also accessed using the South African Heritage Resources Information System (SAHRIS) of SAHRA. Furthermore, an assessment was made of the early editions of the relevant topographic maps.

The fieldwork undertaken for this study was undertaken by PGS. The current fieldwork comprised of an intensive field survey of the study area and was undertaken primarily by foot and vehicle over the course of two days by an experienced fieldwork team from PGS consisting of archaeologists (Nicholas Fletcher and Wynand van Zyl). The fieldwork was undertaken between Monday, 26 and 30 August 2021 and various sites (Figure 4) of significance were identified namely:

- Site Le08 which is an EFC Iron Age settlement and is approximately 100m x 150m in size.
- Site Le09 which contained a large concentration of diagnostic ceramics mostly related to the Eiland facies of the first part of the second millennium AD.
- Site Le20 which is a low heritage significance stone wall.
- Sites Le11 and Le12 which form part of the same large Late Iron Age Early Farming Community (EFC) settlement which continues up to points Le13 and Le14 covering a total area of approximately 800m x 200m. These sites include numerous ash middens, low stone walling, grain bin platforms as well as some exposed burned clay floors or the remains of hut rubble.
- A late Iron Age (LIA) large stone walled settlement was also identified and stretches from the east of the study area (Le02,03, 06 and 07) through the central neck of the hill (Le04 and 05) from where it is spreads out in to a western and northern direction on to the high plain area (Le10).

PGS was therefore also appointed by Fresca farms to obtain a permit under S35 of the NHRA for the removal and relocation or destruction of heritage sites that fall under the proposed new development areas. The permit will entail the removal and relocation or destruction of heritage sites Le 13, 14, 12, 08, 09, 01, 02 and 19.

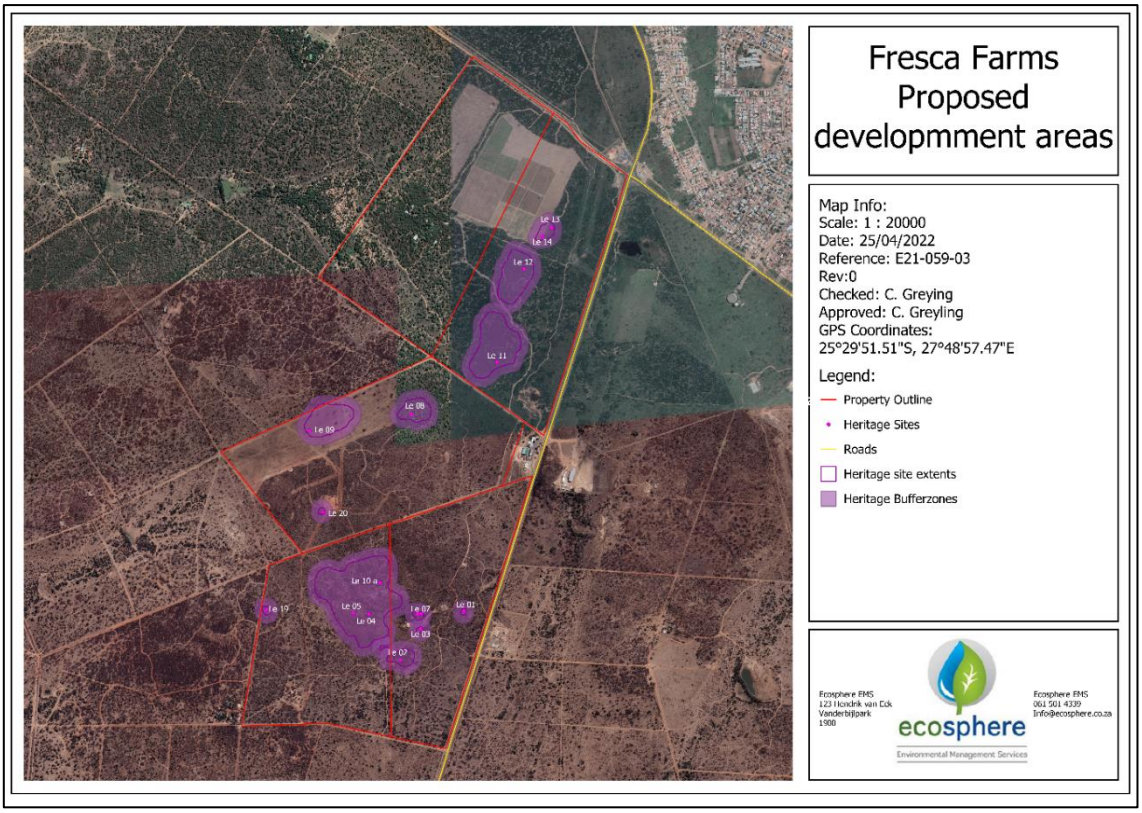


Figure 4: Identified Heritage Sites

1.4 Soil and agricultural potential

According to the National Web based Screening Tool the majority of the proposed development site falls within medium agricultural sensitivity. However, the South-East portions of the proposed development site falls within an area of high agricultural sensitivity. The development also falls under the soils with minimal development, usually shallow, on hard or weathering rock, with or without intermittent diverse soils general soils type, which means that soil may receive water runoff from associated rock; water-intake areas.

The proposed development will be that of crop agriculture/cultivation, falling within the agricultural sector as crop production. Therefore, an Agricultural Potential Impact Assessment will not be necessary.

1.4.1 Groundwater, soil and geological stability of the site

Is the site located on any of the following?

1.	Shallow water table (less than 1.5m deep)	No
2.	Dolomite, sinkhole or doline areas	No
3.	Seasonally wet soils (often close to water bodies)	No
4.	Unstable rocky slopes or steep slopes with loose soil	No
5.	Dispersive soils (soils that dissolve in water)	No
6.	Soils with high clay content (clay fraction more than 40%)	No

7.	Any other unstable soil or geological feature	No
8.	An area sensitive to erosion	No

1.5 Flora and Fauna

1.5.1 Flora

The Vegetation of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006), National Screening tool and SANBI (2019) was used to identify the vegetation type that would have occurred under natural or pre-anthropogenically altered conditions. The Red List of South African Plants (Raimondo et al., 2009; SANBI, 2020) was utilized to provide the most current national conservation status of flora species.

According to the National Web based Environmental Screening Tool the proposed development site falls within a low to medium sensitivity area in terms of plant species and a very high sensitivity in terms of terrestrial biodiversity. The largest part of the proposed development area is covered by Central Sandy Bushveld (Figure 5) and a smaller section is covered by Marikana Thornveld which falls within Central Sandy Bushveld Bioregion within the Savanna biome.

Central Sandy Bushveld is undulating terrain that occurs at altitudes of 850-1450m. These areas are sometimes found between mountains, sandy plains and catenas that support tall, deciduous Terminalia sericea and Burkea africana. This bushveld region supports tall, deciduous woodlands, with deep sandy soils, low broad leaf woodland and a grass dominated herbaceous layer. The vegetation type is considered Vulnerable and has a conservation target of 19 % with less than 3% of the target that is statutorily conserved across various nature reserves (Mucina & Rutherford, 2006). This vegetation type has been found to be heavily populated by rural communities (Environmental Management Framework, n.d.).

The Marikana Thornveld vegetation type is known to be open Acacia karroo woodlands that occurs in valleys and slightly undulating plains. Dense growth of shrubs can be found along drainage lines on termitaria and rocky outcrops. The Marikana Thornveld vegetation unit falls within a summer-rainfall region with very dry winters and frequent winter frosts and is considered endangered. The conservation target is 19%. Less than 1% is conserved in statutory reserves such as Magaliesberg Nature Area and 48% of the vegetation type is transformed, mainly by urbanization and cultivation.

The project area is situated within the Savanna biome. The savanna vegetation of South Africa represents the southernmost extension of the most widespread biome in Africa (Mucina & Rutherford, 2006). Major macroclimatic traits that characterise the Savanna biome include:

a) Seasonal precipitation; and

b) (Sub) tropical thermal regime with no or usually low incidence of frost (Mucina & Rutherford, 2006).

Most savanna vegetation communities are characterised by a herbaceous layer dominated by grasses and open tree layers (Mucina & Rutherford, 2006). Savanna biomes are unique to South Africa and are of conservation importance. The land cover of the proposed development site is largely classed as woodland with very small areas indicated as grassland (Figure 6). The savanna biome is the largest biome in South Africa, extending throughout the east and north-eastern areas of the country. Savannas are characterised by a dominant grass layer, over-topped by a discontinuous, but distinct woody plant layer. At a structural level, Africa's savannas can be broadly categorised as either fine-leaved (microphyllous) savannas or

broad-leaved savannas. Fine-leaved savannas typically occur on nutrient rich soils and are dominated by microphyllous woody plants of the Mimosaceae family (Common genera include Vachellia and Albizia) and a generally dense herbaceous layer.

The International Union for Conservation of Nature (IUCN) identifies 110 plant species of conservation concern (SCC) that may occur on the proposed development site as well as within 25km of the site area. Of these species, 108 are categorized as Least Concern (LC) and 2 are categorized as Data Deficient (DD).

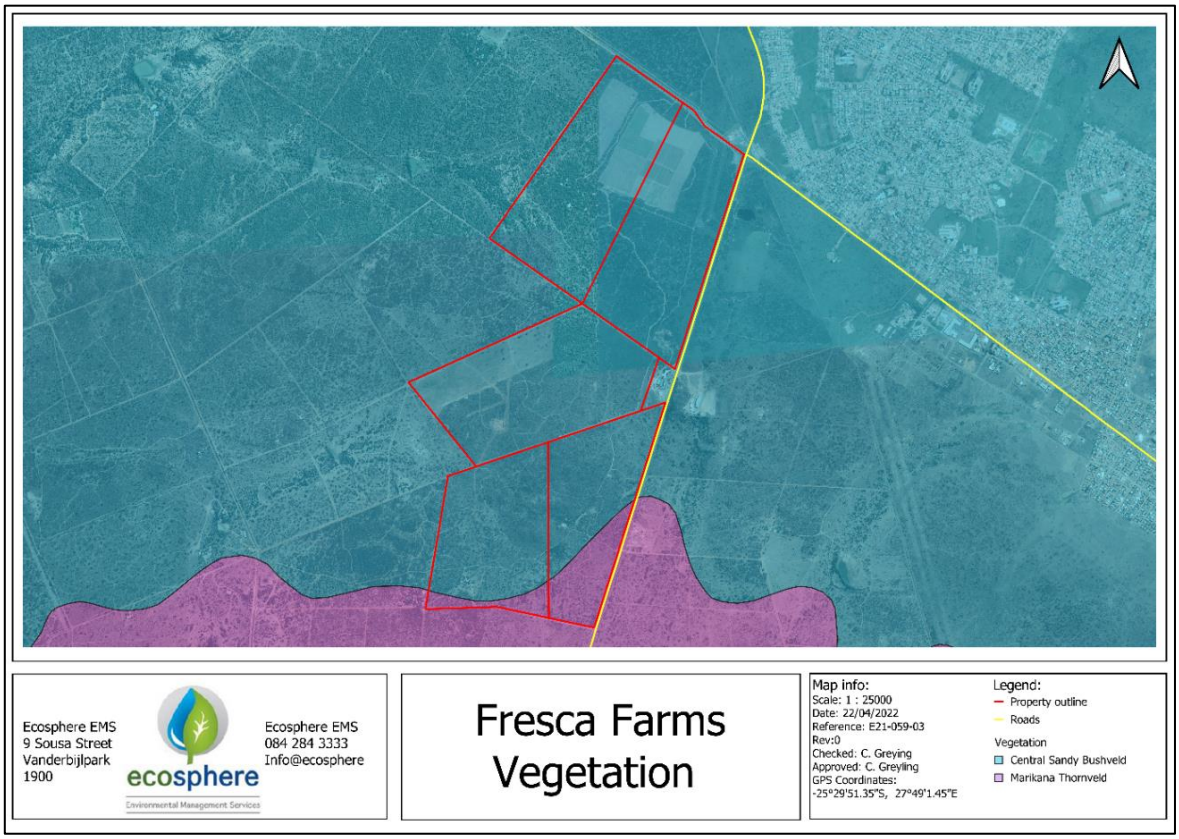


Figure 5: Map showing the vegetation.

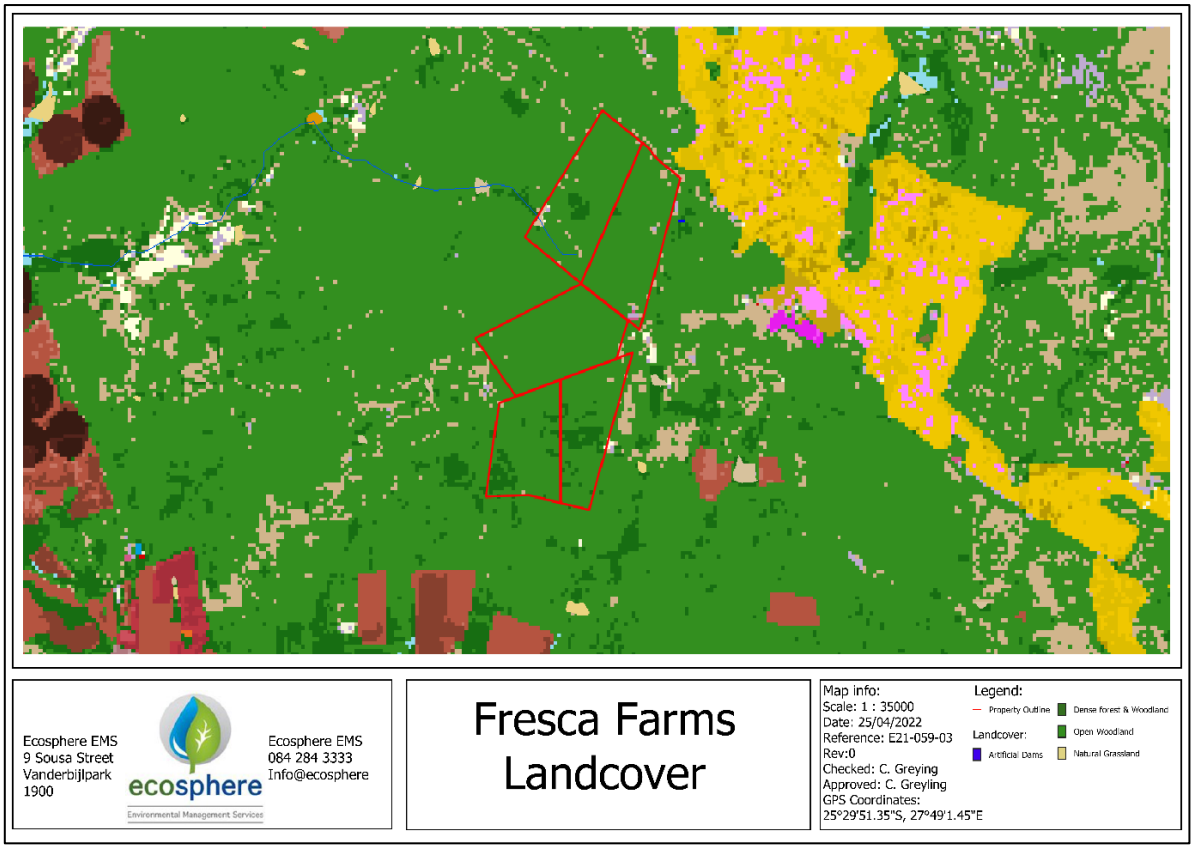


Figure 6: Map indicating the Landcover.

1.5.2 Fauna

According to the National Web based Environmental Screening Tool the proposed development site falls within a medium sensitivity area in terms of animal species and a low sensitivity area in terms if aquatic biodiversity.

The faunal desktop assessment conducted by the Biodiversity company comprised of the following, compiling an expected:

- Amphibian list, generated from the IUCN spatial dataset (2017) and Reptile Map database (Fitzpatrick Institute of African Ornithology, 2021a), using the 2527 quarter degree square;
- Reptile list, generated from the IUCN spatial dataset (2017) and Amphibian Map database (Fitzpatrick Institute of African Ornithology, 2021b), using the 2527 quarter degree square;
- Avifauna list, generated from the Southern African Bird Atlas Project 2 (2525_2745; 2525_2750; 2530_2745; 2530_2750); and
- Mammal list from the IUCN spatial dataset (2017).

The faunal assessment conducted by the Biodiversity company also pertains to herpetofauna (amphibians and reptiles), avifauna and mammals. A single field survey was undertaken in August 2021, which is a dry-season survey, to determine the presence of Species of Conservation Concern (SCC). Effort was made to cover all the different habitat types, within the limits of time and access. The faunal field survey comprised of the following techniques:

- Visual and auditory searches - This typically comprised of meandering and using binoculars to view species from a distance without them being disturbed; and listening to species calls;
- Active hand-searches - are used for species that shelter in or under particular micro-habitats (typically rocks, exfoliating rock outcrops, fallen trees, leaf litter, bark etc.); and
- Utilization of local knowledge.

Various field guides and texts were also consulted for identification purposes included the following:

- Field Guide to Snakes and other Reptiles of Southern Africa (Branch, 1998);
- A Complete Guide to the Snakes of Southern Africa (Marais, 2004);
- Atlas and Red List of the Reptiles of South Africa, Lesotho and Swaziland (Bates et al, 2014);
- A Complete Guide to the Frogs of Southern Africa (du Preez and Carruthers, 2009);
- Smithers' Mammals of Southern Africa (Apps, 2000);
- A Field Guide to the Tracks and Signs of Southern and East African Wildlife (Stuart and Stuart, 2000).

1.5.2.1 Avifauna

The IUCN identifies 411 Ave/bird SCC that may occur on the proposed development site as well as within 25km of the site area. Of these species, 3 are categorized as Critically Endangered (CR), 4 are categorized as Endangered (EN), 4 are categorized as Vulnerable (VU), 10 are categorized as Near Threatened (NT) and 391 are categorized as Least Concern (Table 10).

Table 10: Birds of conservation concern.

Scientific name	Common name	Red List Category
Anthripoides paradiseus	Blue Crane	VU
Anthus hoeschi	Mountain Pipit	NT
Aquila verreauxii	Verreaux's Eagle	LC
Calisris ferruginea	Curlew Sandpiper	NT
Circus macrourous	Pallid Harrier	NT
Coracias garrulus	European Roller	LC
Egrette vinaceigula	Slaty Egret	VU
Falco biarmicus	Lanner Falcon	LC
Falco vespertinus	Red-footed Falcon	NT
Geoclaptes olivaceus	Ground Woodpecker	NT
Glareola nordmanni	Black-winged Pratincole	NT
Gypaetus barbatus	Bearded Vulture	NT
Gyps africanus	White-backed Vulture	CR
Gyps coprotheres	Cape Vulture	EN
Monticola explorator	Sentinel Rock-thrush	NT
Mycteria ibis	Yellow-billed Stork	LC
Necrosyrtes monachus	Hooded Vulture	CR
Numenius arquata	Eurasian Curlew	NT
Oxyura maccoa	Maccoa Duck	VU
Phoeniconaias minor	Lesser Flamingo	NT
Polemaetus bellicosus	Martial Eagle	EN

Rostratula benghalensis	Greater Painted-snipe	LC
Saggittarius serpentarius	Secretary bird	EN
Sagittarius serpentarius	Secretarybird	VU
Torgos tracheliotos	Lappet-faced Vulture	EN
Trigonoceps occipitalis	White-headed Vulture	CR

Coracias garrulous (European Roller) is a winter migrant from most of South-central Europe and Asia occurring throughout sub-Saharan Africa (IUCN, 2017). The European Roller has a preference for bushy plains and dry savannah areas (IUCN, 2017). There is a high chance of this species occurring in the project area as suitable habitat and food sources can be found.

Falco biarmicus (Lanner Falcon) is native to South Africa and inhabits a wide variety of habitats, from lowland deserts to forested mountains (IUCN, 2017). They may occur in groups up to 20 individuals but have also been observed solitary. Their diet is mainly composed of small birds such as pigeons and francolins. The likelihood of incidental records of this species in the project area is rated as high due to the natural veld condition and the presence of many bird species on which Lanner Falcons may predate.

Sagittarius serpentarius (Secretarybird) occurs in sub-Saharan Africa and inhabits grasslands, open plains, and lightly wooded savanna. It is also found in agricultural areas and sub-desert (IUCN, 2017). The likelihood of occurrence is rated as high due to the grasslands and nearby wetland areas in and around the project area.

1.5.2.2 Mammals

The IUCN identifies 121 mammalian SCC that may occur on the proposed development site as well as within 25km of the site area. Of these species, 1 is categorised as Critically Endangered (CR), 2 are categorised as Endangered (EN), 7 are categorised as Vulnerable (VU), 9 are categorised as Near Threatened (NT) and 103 are categorised as Least Concern (Table 11).

Table 11: Mammals of Conservation concern

Scientific name	Common name	Red List Category
Aonyx capensis	*Cape Clawless Otter*	*NT*
Atelerix frontalis	*South Africa Hedgehog*	*LC*
Chrysospalax villosus	*Rough-haired Golden Mole*	VU
Cloeotis percivali	*Short-eared Trident Bat*	*LC*
Crocidura mariquensis	*Swamp Musk Shrew*	*LC*
Dasymys incomtus	*African Marsh rat*	*LC*
Diceros Rhino	*Black Rhine*	CR
Eidolon helvum	*African Straw-colored Fruit Bat*	*NT*
Felis nigripes	*Black-footed cat*	VU
Giraffa camelopardalis	*Giraffe*	VU
Hippopotamus amphibius	*Hippopotamus*	VU
Hydrictis maculicollis	*Spotted-necked Otter*	*NT*
Leptailurus serval	*Serval*	*LC*
Mystromys albicaudatus	*White-tailed Rat*	*EN*
Panthera pardus	*Leopard*	VU
Parahyaena brunnea	*Brown Hyaena*	*NT*
Pelea capreolus	*Grey Rhebok*	*NT*
Poecilogale albinucha	*African Striped Weasel*	*LC*
Redunca fulvorufula	*Mountain Reedbuck*	EN

Rhinolophus blasii	*Blasius's horseshoe bat*	*LC*
Smutsia temminckii	*Temmincks Pangolin*	VU

Atelerix frontalis (South African Hedgehog) has a tolerance of a degree of habitat modification and occurs in a wide variety of semi-arid and sub-temperate habitats (IUCN, 2017). Based on the Red List of Mammals of South Africa, Lesotho and Swaziland (2016), *A. frontalis* populations are decreasing due to the threats of electrocution, veld fires, road collisions, predation from domestic pets and illegal harvesting. Although the species is cryptic and therefore not often seen, there is some suitable habitat in the project area and therefore the likelihood of occurrence is rated as moderate.

Leptailurus serval (Serval) occurs widely through sub-Saharan Africa and is commonly recorded from most major national parks and reserves (IUCN, 2017). The Serval's status outside reserves is not certain, but they are inconspicuous and may be common in suitable habitat as they are tolerant of farming practices provided there is cover and food available. In sub-Saharan Africa, they are found in habitat with well-watered savanna long-grass environments and are particularly associated with reedbeds and other riparian vegetation types. Some areas of natural grasslands are present in the project area and as such the likelihood of occurrence is rated as moderate.

1.5.2.3 Reptiles and amphibians

Based on the IUCN Red List Spatial Data and the ReptileMAP database, 82 reptile species are expected to occur within the area (Appendix C). Three (3) are regarded as threatened (Table 12). Based on the absence of suitable habitat one species were given a low likelihood of occurrence. The specialists also recommended that a detailed herpetological study and assessment on reptiles be conducted before the construction phase or as a condition of the EA.

Table 12: Reptiles of conservation concern.

Scientific name	Common name	Red List Category
Crocodylus niloticus	Nile Crocodile	LC
Homoroselaps dorsalis	Striped Harlequin Snake	LC
Kinixys lobatsiana	Lobatse hinged-back Tortoise	VU

Homoroselaps dorsalis (Striped Harlequin Snake) is partially fossorial and known to inhabit old termitaria in grassland habitat (IUCN, 2017). Most of its range is at moderately high altitudes, reaching 1,800 m in Mpumalanga and Swaziland, but it is also found at elevations as low as about 100 m in KwaZulu-Natal. The likelihood of occurrence was rated as moderate.

Kinixys lobatsiana (Lobatse Hinged Tortoise) is listed as VU on a global scale. This tortoise is a savanna species that inhabits rocky hillsides in habitats of mixed woodlands, tropical Bushveld and Thornveld where vegetation ranges from dense, short shrubland to open tree savanna. In South Africa it is protected by provincial nature conservation ordinances and biodiversity laws at a regional level, but the species is not protected at a national level by the National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004). The likelihood of occurrence of this species in the area is regarded as moderate.

1.5.3 Flora and Fauna of Conservation Concern

Based on the findings of the National Web based Screening Tool that indicated that the proposed development falls within an area where terrestrial biodiversity is very sensitive and considering that various SCC (110 plant species, 411 bird species, 32 reptilian species, 24 amphibian species and 121 mammalian species) are expected to occur within and around the

area of the proposed development it was decided that a Terrestrial Impact Assessment was required.

During the field assessment conducted by the Biodiversity company, 1 species of protected tree was observed: Sclerocarya birrea. subsp. caffra (Marula). The protected tree observed are protected by the List of Protected Tree Species under the National Forests Act, 1998 (Act No. 84 of 1998) (NFA). In terms of the NFA, no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate, or in any other manner acquire or dispose of any protected tree or any product derived from a protected tree, except under a licence or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated. Contravention of this declaration is regarded as a first category offence. During the infield assessment a total of 1 protected species was recorded. These species occurred numerously and naturally spaced throughout the area.

1.6 Biodiversity Site Sensitivity

The 2015 North West Biodiversity Sector Plan (NWBSP) map, as provided by the South African National Biodiversity Institute (SANBI), delineates Protected Areas, Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESAs) and modified lands within the province. SANBI ensures that developments are developed sustainably by providing biodiversity data and policy advice for the country of South Africa. SANBI works hand in hand with environmental legislation to identify sensitive ecosystems and ensure specialist studies are carried out where necessary, and to assure that developments do not severely impact South Africa's biodiversity resources.

CBA areas are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state to ensure the continued existence and functioning of species and ecosystems for the delivery of ecosystem services. ESA areas are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of irreplaceable CBAs and/or in delivering ecosystem services. Other natural areas consist of all those areas in good or fair ecological condition that fall outside the protected area. Moderately or Heavily Modified Areas (sometimes called 'transformed' areas) are areas that have been heavily modified by human activity so that they are by-and-large no longer natural. According to the NWBSP the proposed project area falls across areas classified as: ESA and CBA. (Figure 7).

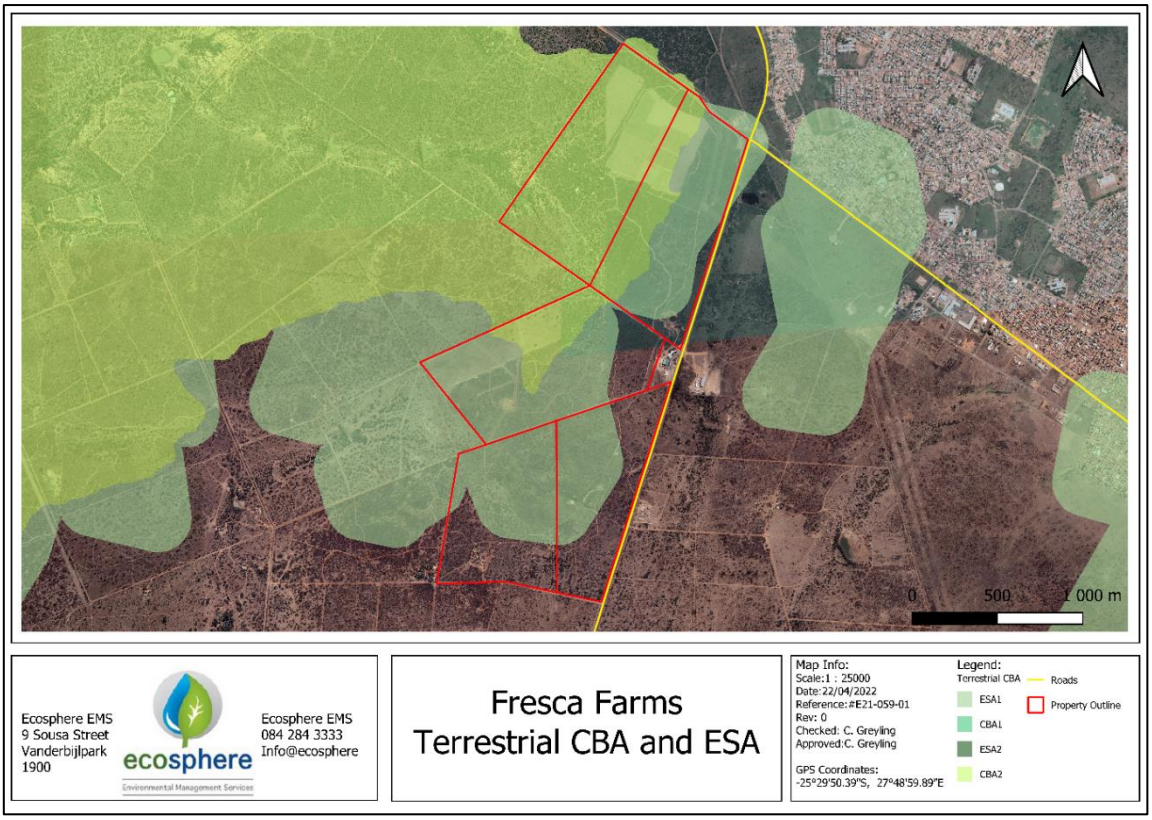


Figure 7: Critical biodiversity sensitive areas

As the proposed development area falls within a CBA 2 and ESA 1, where vegetation will be cleared, a Terrestrial Impact Assessment was required. Critical Biodiversity Area 2 (CBA 2) are areas that are the best option for meeting biodiversity targets, in the smallest area, while avoiding conflict with other land uses. Ecological Support Area 1 (ESA 1) are areas that support the ecological functioning of protected areas or CBAs or provide important ecological infrastructure.

1.7 Habitat Sensitivity

The main habitat types identified across the project area were initially identified largely based on aerial imagery. These main habitat types were refined based on the field coverage and data collected during the survey conducted by the biodiversity company and was identified as:

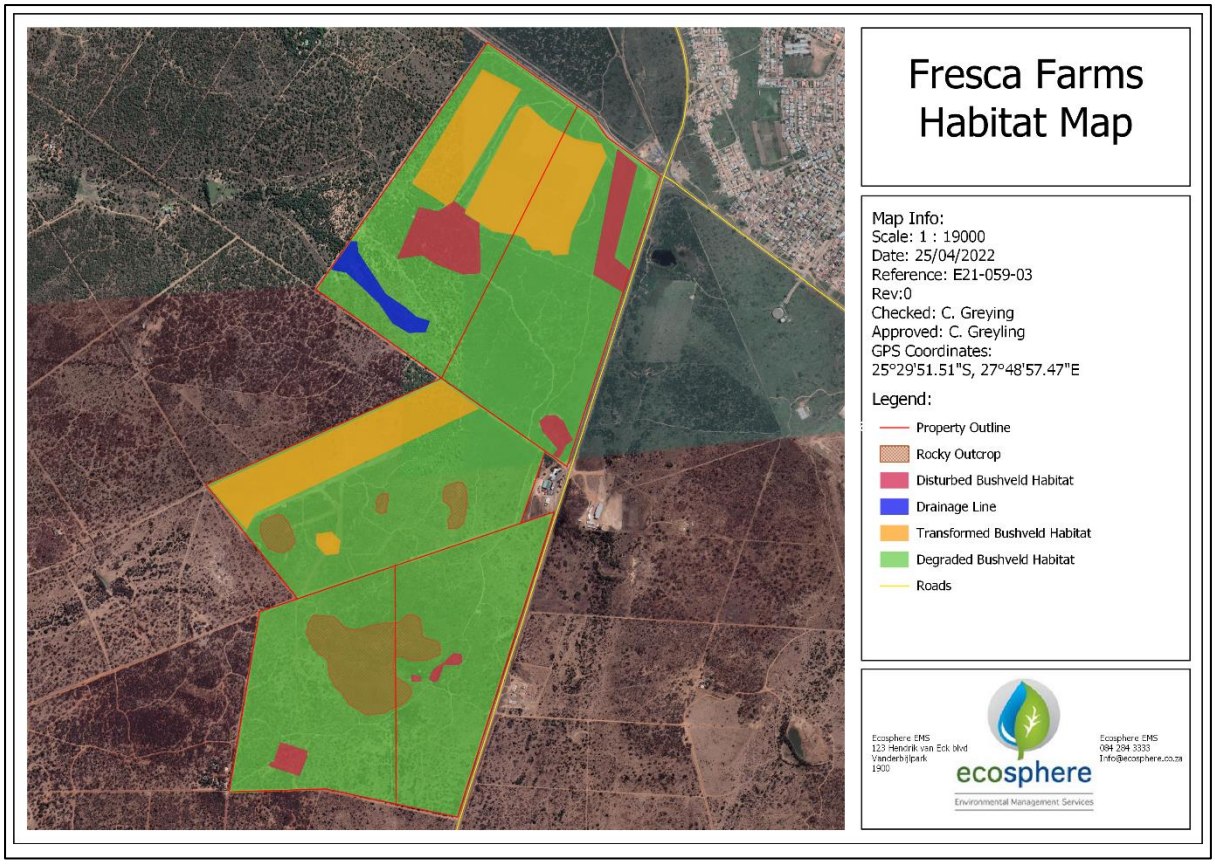


Figure 8: Habitat Sensitivities

1.7.1 Disturbed Bushveld

This habitat is regarded as areas that have been impacted more by direct historic impacts as well from overgrazing by livestock or has degraded over time due to edge effects. This habitat has also been impacted by edge effects of transformed areas as well as impacts from littering, dumping and infringement.

These habitats aren't entirely transformed but in a constant disturbed state as it can't recover to a more natural state due to ongoing disturbances and impacts it receives from the surrounding transformed areas and property owners. These areas are considered to have a low sensitivity due to the fact that these areas may be used as a movement corridor and in many cases form a barrier between the more natural bushveld and the transformed areas.

1.7.2 Rocky Outcrops

Rocky outcrops occur in small portions within the disturbed Bushveld habitat and consist of bedrock protruding from the soil layer, with the associated boulders and large rocks. One rocky outcrop is present in the project area.

The habitat is used by faunal species as fine-scale habitats and is important to consider for mitigation actions when an area is cleared for placement of the infrastructure. These habitats are also hotspots for the protected tree species recorded on site. Due to the high sensitivity of this habitat, it was decided that the areas containing rocky outcrops be excluded from the proposed development.

1.7.3 Degraded Bushveld

This habitat is the remainder of the bushveld that has not be transformed. This habitat type is regarded as semi-natural bushveld, but slightly disturbed due to grazing by livestock, tree cutting for wood and also human infringement. The current ecological condition of this habitat with regard to the main driving forces is intact, which is evident in the amount of, and importance of the species recorded in the faunal assessment, and also to the high species diversity and number of plant species recorded.

This habitat type is regarded as semi-natural bushveld but has been impacted over an extended period of time due historic human community presence and the associated impacts such as livestock. Current human infringement still occurs throughout, especially in areas close to roads. The difference between this habitat and the disturbed grassland is the extent of the disturbance in the disturbed bushveld being more severe.

1.7.4 Drainage Line and artificial dam

These habitats comprise of a dam (artificial system) and drainage channel. The drainage channel is ephemeral, and despite these resources being somewhat disturbed, the ecological integrity, importance and functioning of these areas play a crucial role as a water resource system and an important habitat for various fauna and flora.

The preservation of the channel and directly associated water resources of this system are the most important aspect to consider for the development, even more so due to the high sensitivity of the area according to the various ecological datasets. This habitat needs to be protected and improved due to the role of this habitat as a water resource.

1.7.5 Transformed

This habitat unit represents all areas that have been cleared of natural vegetation for agriculture and other infrastructure, as well as the associated secondary roads. Large portions of the project area were made up of this habitat type.

1.8 Freshwater Resources

Water is one of the North-West Province's most critical and limiting natural resources with only four sources available in the province namely: surface water, groundwater, imported water and re-usable effluent.

According to the North West Biodiversity Sector Plan 2015 for the freshwater biodiversity assessment of the North West Province (SANBI, 2015), the Rosespruit River to the east of the Fresca Farms is considered an Ecological Support Area One. The Ramogatla River which flows in the western edge of the property is however considered a Critical Biodiversity Area One in the channel and a Critical Biodiversity Area Two in the riparian areas. Sections of the surrounding floodplain of the Ramogatla River are considered an Ecological Support Area One (Figure 10). It is noted that the small, isolated patch of ESA in the Hartebeestpoort farm was discovered to be terrestrial habitat and not sensitive as an Aquatic CBA.

CBAs are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services. CBAs are areas of high biodiversity value and need to be kept in a natural state, with no further loss of habitat or species (MTPA, 2014). Thus, if these areas are not maintained in a natural or near natural state then biodiversity targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity compatible land uses and resource uses (SANBI, 2017).

The following water resources were identified by SANBI (Figure 9 & 10):

- An aquatic CBA 1 lies on Portion 39
- An aquatic CBA 2 lies on Portion 39
- An aquatic ESA 1 lies on Portion 39 as well as on Portion 1090 and 1091
- An aquatic ESA 2 lies northeast of the proposed development site.
- A national wetland lies approximately 400m southeast of Portion 4.A Water Use License Application (WULA) as well as Aquatic Impact Assessment is required for a development that falls within 500m of a wetland. However, after further investigation the identified wetland was found to be a dam.
- A national river or NFEPA (start of a drainage line) falls within Portion 39 of the proposed development. A WULA as well as Aquatic Impact Assessment is only required for a development that falls within 100m from a river

The National Freshwater Ecosystem Priority Areas (NFEPA) database forms part of a comprehensive approach to the sustainable and equitable development of South Africa's scarce water resources. This database provides guidance on how many rivers, wetlands and estuaries, and which ones, should remain in a natural or near-natural condition to support the water resource protection goals of the National Water Act (Act 36 of 1998). This directly applies to the National Water Act, which feeds into Catchment Management Strategies, water resource classification, reserve determination, and the setting and monitoring of resource quality objectives (Nel et al., 2011). The NFEPAs are intended to be conservation support tools and envisioned to guide the effective implementation of measures to achieve the National Environment Management Biodiversity Act's biodiversity goals (NEM:BA) (Act 10 of 2004), informing both the listing of threatened freshwater ecosystems and the process of bioregional planning provided for by this Act (Nel et al., 2011).

The Fresca Farm project area crosses the boundaries of three separate Sub-quaternary catchments (SQC) namely: 759 in the north, 949 in the west and 972 in the south. The northern portion of the Fresca Farms enters the 759 SQC however the road forms a boundary and catchment divide with the catchment suspected to be misaligned and any modification to the Wetland FEPA's of the catchment unlikely. The eastern portion of the farms do incorporate the upper reaches of the Ramogatla River which is considered a Phase2 FEPA: River ecosystem type, identified as an Ephemeral - Bushveld Basin - Upper foothill system. Downstream sections of the Ramogatla River are also classified as a channelled valley-bottom wetland FEPA (Central Bushveld Bioregion) by the National Biodiversity Act Wetland layers 2018 (SAIIAE Wetlands). Due to the ephemeral nature of the system its recoverability from modification is hindered and therefore special care should be taken to avoid the loss of habitat within the system. The 972 SQC has no assigned sensitivity however drains into fish support areas downstream of Brits and therefore efforts to minimize modification remain pertinent.

During the Aquatic ecological Impact assessment, a historical dam was located on the property, this dam does however not fall under the scope of the current project as the development will not have an impact on this freshwater resource and the dam does not trigger any listing notices under NEMA. A 100m buffer was set around the dam and drainage line and if the buffer set in place cannot be maintained a water use license will need to be applied for under section 21 b c and i. It is however recommended that Fresca Farms obtains a Water Use license for the unauthorised historic dam.

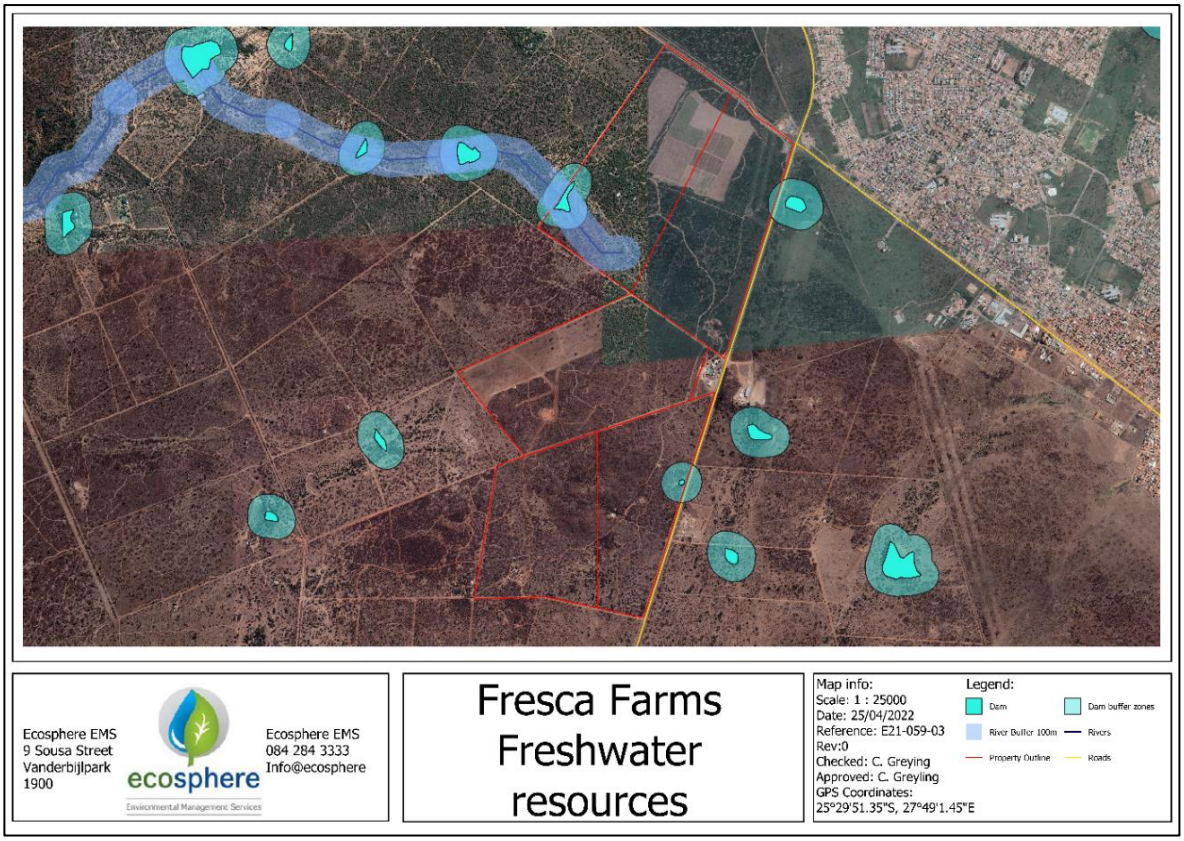


Figure 9: Water resources.

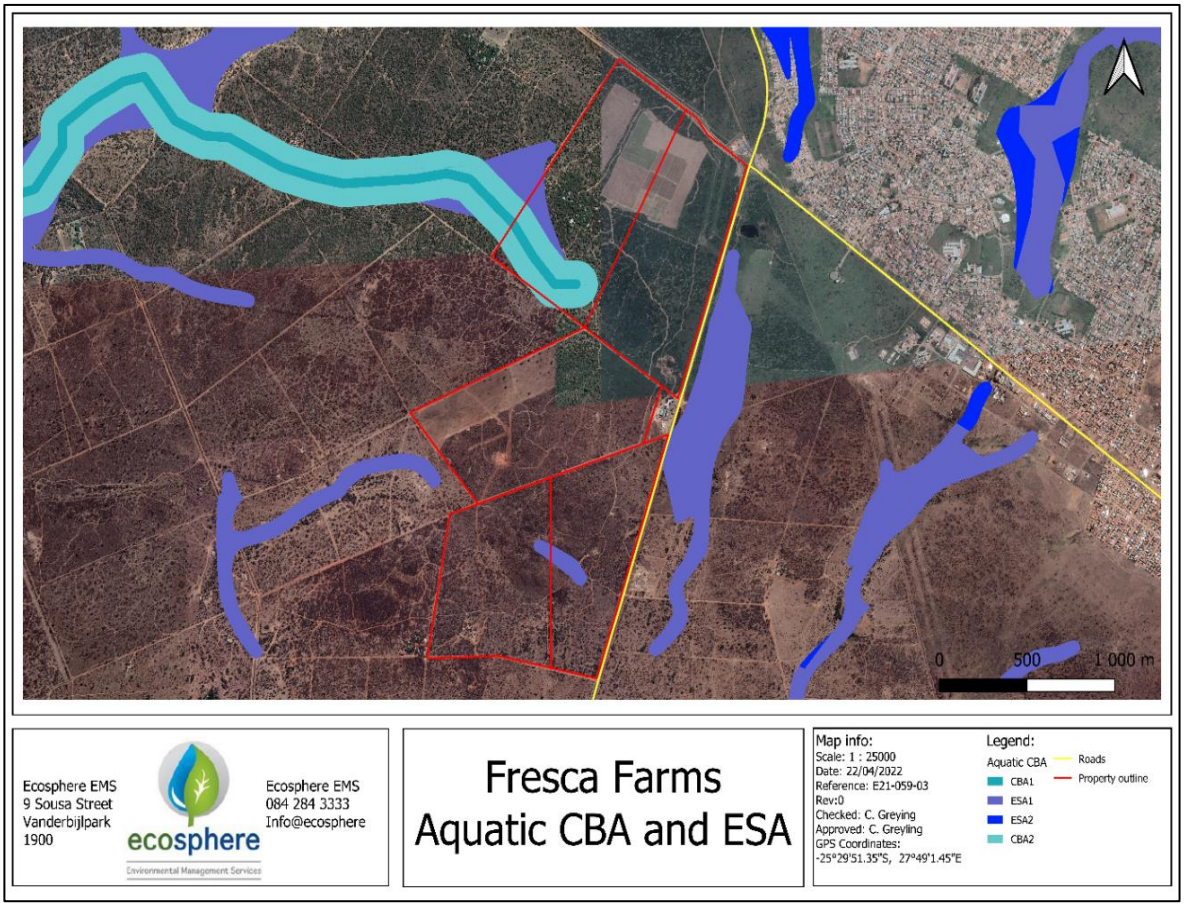


Figure 10: Aquatic CBA and ESA.

2 Socio-Economic Environment

The socio-economic status of the area is an important aspect that should be taken into consideration. The economic profile of the municipality, level of employment, economic indicators and level of education will give an indication of the need and desirability of the project.

Benefits of the proposed development include:

- Job creation.
- Training opportunities.
- Growth for local economy.
- Work opportunities for local contractors.
- Food production.
- Food security.
- Left over produce/crops that are not sold to big markets by the farmer will be given to the local community and sold at affordable prices.

Concerns were raised however that the proposed development will lead to an increase in poaching of wildlife due to the increase in farm workers. Conscientious and good employment practices should therefore be implemented by Fresca farms along with the implementation of access control to reduce poaching.

2.1 Surrounding Land Uses

The proposed project area is situated 9.7 km North of Brits and 2.1 km southwest of Lethlabile in the North West Province The proposed development is consistent with the activities within the larger surrounding environment. The immediate area surrounding the proposed development site consist of a natural bushveld and a game farm as well as Lethabile informal settlement.

2.2 Economic Profile

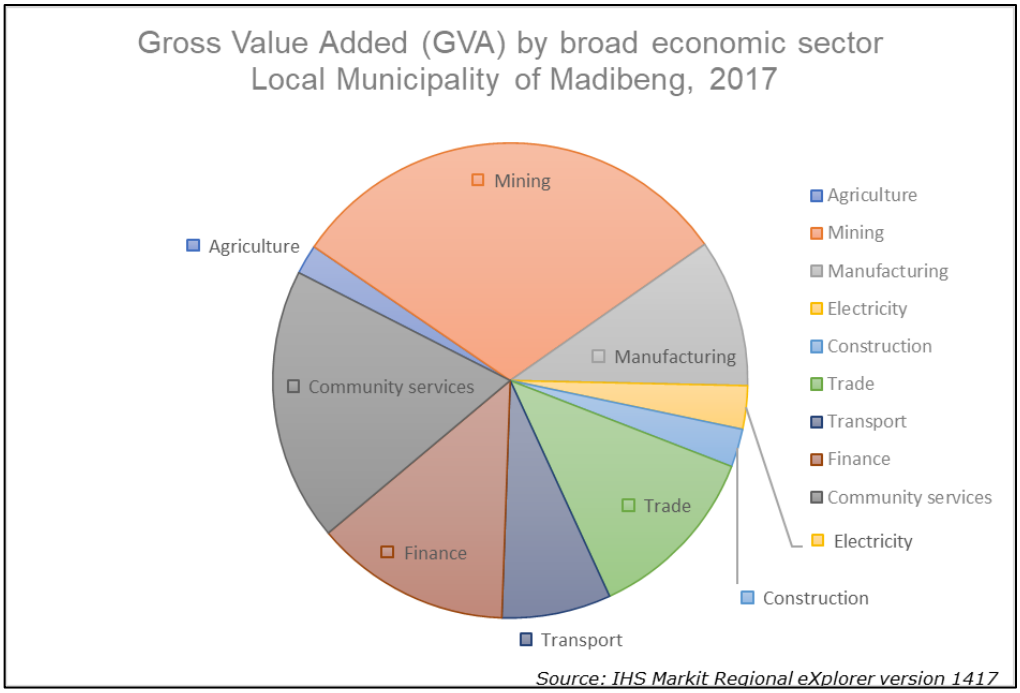
According to the 2011 Census Madibeng Local Municipality consist of an area of 3839,20km and has a population of 477 381 people. Madibeng Local Municipality housed approximately 1.0% of the country's total population in 2017 and the Municipal growth rate between 2007 and 2017 was 3.14% in comparison to the 1,56% of South Africa as a whole. The two main economic contributing areas within the Madibeng Local Municipality (LM) are Brits and Hartbeespoort. The natural hydrology of Madibeng presents economic opportunities along the water bodies. The scenic natural setting around dams makes them popular while the agricultural activities are favoured when they are on riverbanks or within close proximity to a river (IDP, 2020/21)

Agriculture, tourism and mining are the main primary economies. The Agricultural sector, which produces food, is the biggest primary economy and is categorized into four classifications, namely, extensive farming (44% of the Municipal area), intensive agriculture (18%), game farming (10%) and subsistence farming. The mining sector is dominated by platinum and chromium mining as well as quarrying activity. Platinum mining activity is located on the south-eastern side of the side of Brits while quarrying is spread around the municipal area. The primary economic activities have to be managed in such a manner as to make sure that their impact on the natural environment and resources is controlled (IDP, 2020/21). Tourism also plays a major economic role as it is based on the natural systems (11%). Scenic

routes, heritage sites, resorts and nature reserves are some of the main attractions in the tourism sector (IDP, 2020/21).

The development will therefor also benefit the Madibeng local municipality's economic sector as the development will contribute to the agricultural sector and production of food which is the primary economic sector in Madibeng.

The total employment composition, gross value added (GVA) by the broad economic sector for Madibeng Local Municipality are illustrated below (Pie Chart 1) (IDP, 2020/21).



Pie Chart 1: The total employment composition, gross value added (GVA) by the broad economic sector for Madibeng Local Municipality.

2.3 Demographics

2.3.1 Economic Indicators

The development will contribute to food security and provide various opportunities in the local community. As a result of the development employment and training opportunities will be created for local farm workers as well as contractors and this will ultimately boost the local economy.

The economic indicators of the Madibeng LM are indicated below (Table 13)

Table 13: Economic indicators.

Economic Indicator	Percentage / Amount
Unemployment Rate	20%
Employment rate in the formal sector	69%
Employment rate in the informal sector	14%
Housing Owned and fully paid off	63%
Households that are informal dwellings (shacks)	35%
Female Headed Households	30%
Households with heads under 18 years old	54%
Number of Households heads under 18 years old	1 084

Total Population	536 111
Average population age	26

2.3.2 Level of education

The matriculation rate is 34% for the Madibeng Local Municipality area, higher than the average rate in the North-West Province which is 31%. The statistics from 2011 census regarding the education levels of persons older than 20 years can be found in Table 14 below.

Table 14 Level of education in Madibeng Local Municipality

Level of education	Percentage of Population
No Schooling	7.80%
Some primary to secondary schooling	57.30%
Grade 12	7.30%
Higher	27.60%

2.3.3 Ethnic Group

Ethnicity within the Madibeng Local Municipality was grouped into 4 classes namely Black African, Coloured, Indian or Asian, White and other by the South Africa's Census 2011. Table 15 below provides the population group statistics with regards to ethnicity.

Table 15: Ethnic group in Madibeng Local Municipality.

Ethnic group	Percentage of population
Black African	89.28%
Coloured	0.90%
Indian or Asian	0.51%
White	8.94%
Other	0.37%

3 Specialist Studies

3.1 Terrestrial Biodiversity Assessment

The Biodiversity Company was appointed to undertake a fauna and flora baseline assessment in accordance with the amendments to the Environmental Impact Assessment Regulations. 2014 (GNR 326, 7 April 2017) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). It was decided the study was necessary after the National Web based Environmental Screening Tool identified the area within which the development footprint falls as having a high sensitivity with regards to terrestrial biodiversity.

The Terrestrial Biodiversity Assessment found that all future developments may be favourably considered, and no fatal flaws are expected. The future developments must adhere to the prescribed mitigation measures. The findings and recommendations of the assessments were as follows:

3.1.1 Portion 4 of farm Blaauwbank 241 JQ

A summary of the GIS analysis of the relevance of the farm portions to certain ecological important landscape features are provided in Table 16.

Table 16: Summary of relevance of the project to ecologically important landscape features.

Desktop Information Considered	Relevant/Irrelevant
Ecosystem Threat Status	Relevant – Overlaps with a Least Concerned and Endangered ecosystem
Ecosystem Protection Level	Relevant – Overlaps with a Poorly Protected Ecosystem
Protected Areas	Irrelevant – The project area falls 6.1 km from the Thabaphiri Nature Reserve, thus the project area is outside of the protected areas 5 km buffer zones
National Protected Areas Expansion Strategy	Irrelevant – The project area is 8 km from the closest NPAES area
Critical Biodiversity Area	Relevant – The project area overlaps with a CBA2, and an ESA1 area.
Important Bird and Biodiversity Areas	IIrrelevant – Located 15 km from the Magaliesberg IBA
South African Inventory of Inland Aquatic Ecosystems	Relevant - The project area does not overlap with a NBA river or a NBA wetland, it does however come within 240 m from a CR river which means it falls within the 500m regulated area.
National Freshwater Priority Area	Relevant – The project area does not overlap with a FEPA wetland, but does come within 280 m of a unclassified FEPA wetland
Strategic Water Source Areas	Irrelevant- The project area is 96 km from the closest SWSA

The assessment found that the farm portion overlaps with a Critical Biodiversity Support Area (CBA), a CBA 2 and Ecological support Areas (ESA), ESA 1 area. Portions of the project area has been altered both currently and historically. The present land use had a direct impact on both the fauna and the flora in the area, which is evident in the disturbed and transformed habitats. However, the degraded Bushveld habitat and rocky outcrop can be regarded as important, not only within the local landscape, but also regionally as they are used for habitat, foraging and movement corridors. The habitat sensitivity of the rocky outcrops is regarded as high, and the degraded Bushveld habitat sensitivity is regarded as medium. This is due to the species recorded as well as the role of this largely intact habitat to biodiversity within a very fragmented local landscape. The high sensitivity terrestrial areas still:

- Serve as and represent ESA as per the Conservation Plan; and
- Support various organisms and may play an important role in the ecosystem if left to recover from the superficial impacts.

The integrity, importance and functioning of these terrestrial biodiversity areas provide a variety of ecological services considered beneficial, with one key service being the maintenance of biodiversity. The preservation of these systems is the most important aspect to consider for the project.

The biodiversity theme sensitivity, as indicated in the screening report, was derived to be Very High, mainly due to the project area being with a CBA2, ESA1 and the proximity to the protected areas expansion strategy. The completion of the terrestrial biodiversity assessment confirmed the very high sensitivity of certain habitats that overlap with the screening report and therefore corroborates the screening report, i.e., the rocky outcrop habitat.

All future developments may be favourably considered, and no fatal flaws are expected. The future developments must adhere to the prescribed mitigation measures.

3.1.2 Portions 39 and 40 of farm Blaauwbank 241 JQ

A summary of the GIS analysis of the relevance of the farm portions to certain ecological important landscape features are provided in Table 17.

Table 17: Summary of relevance of the project to ecologically important landscape features.

Desktop Information Considered	Relevant/Irrelevant
Ecosystem Threat Status	Relevant – Overlaps with a Least Concerned and Endangered ecosystem
Ecosystem Protection Level	Relevant – Overlaps with a Poorly Protected Ecosystem
Protected Areas	Irrelevant – The project area falls 5.7 km from the Thabaphiri Nature Reserve; thus the project area is outside of the protected areas 5 km buffer zones
National Protected Areas Expansion Strategy	Irrelevant – The project area is 7.2 km from the closest NPAES area
Critical Biodiversity Area	Relevant – The project area overlaps with a CBA2, and an ESA1 area.
Important Bird and Biodiversity Areas	Irrelevant – Located 15.4 km from the Magaliesberg IBA
South African Inventory of Inland Aquatic Ecosystems	Relevant - The project area does overlap with a CR NBA River but not with a NBA wetland. The project area is 1.1 km from a CR wetland.
National Freshwater Priority Area	Relevant – The project area does overlap with an unclassified FEPA wetland as well as a Phase 2 FEPA river
Strategic Water Source Areas	Relevant- The project area is 92 km from the closest SWSA

Portions of the project area has been altered both currently and historically. The present land use had a direct impact on both the fauna and the flora in the area, which is evident in the disturbed and transformed habitats. However, the degraded Bushveld habitat and water resources can be regarded as important, not only within the local landscape, but also regionally as they are used for habitat, foraging and movement corridors. The habitat sensitivity of the water resources is regarded as high, and the degraded Bushveld habitat sensitivity is regarded as medium. This is due to the species recorded as well as the role of this largely intact habitat to biodiversity within a very fragmented local landscape. The high sensitivity terrestrial areas still:

- Serve as and represent CBA2 as per the Conservation Plan; and
- Support various organisms and may play an important role in the ecosystem if left to recover from the superficial impacts

The integrity, importance and functioning of these terrestrial biodiversity areas provide a variety of ecological services considered beneficial, with one key service being the maintenance of biodiversity. The preservation of these systems is the most important aspect to consider for the project.

The biodiversity theme sensitivity, as indicated in the screening report, was derived to be Very High, mainly due to the project area being with a CBA2, ESA1 and the proximity to the protected areas expansion strategy. The completion of the terrestrial biodiversity assessment confirmed the very high sensitivity of certain habitats that overlap with the screening report

and therefore corroborates the screening report, i.e., the drainage line and artificial dam habitat.

All future developments may be favourably considered, and no fatal flaws are expected. The future developments must adhere to the prescribed mitigation measures.

3.1.3 Portions 1090 and 1091 of farm Hartebeespoort C419 JQ

A summary of the GIS analysis of the relevance of the farm portions to certain ecological important landscape features are provided in Table 18.

Table 18: Summary of relevance of the project to ecologically important landscape features.

Desktop Information Considered	Relevant/Irrelevant
Ecosystem Threat Status	Relevant – Overlaps with a Least Concerned and Endangered ecosystem
Ecosystem Protection Level	Relevant – Overlaps with a Poorly Protected Ecosystem
Protected Areas	Irrelevant – The project area falls 6.7 km from the Thabaphiri Nature Reserve; thus, the project area is outside of the protected areas 5 km buffer zones
National Protected Areas Expansion Strategy	Irrelevant – The project area is 8.6 km from the closest NPAES area
Critical Biodiversity Area	Relevant – The project area overlaps with an ESA1 area.
Important Bird and Biodiversity Areas	Irrelevant – Located 13.8 km from the Magaliesberg IBA
South African Inventory of Inland Aquatic Ecosystems	Relevant - The project area does not overlap with an NBA River nor a NBA wetland. The project area is 950 m from a CR river.
National Freshwater Priority Area	Relevant – The project area does not overlap with a FEPA wetland or FEPA river; it does however come within 332 m of an unclassified Wetland. This means that it does falls within the 500 m regulated area.
Strategic Water Source Areas	Irrelevant- The project area is 95.6 km from the closest SWSA

Portions of the project area has been altered both currently and historically. The present land use had a direct impact on both the fauna and the flora in the area, which is evident in the disturbed and transformed habitats. However, the degraded Bushveld habitat and rocky ridge can be regarded as important, not only within the local landscape, but also regionally as they are used for habitat, foraging and movement corridors. The habitat sensitivity of the rocky ridge is regarded as high, and the degraded Bushveld habitat sensitivity is regarded as medium. This is due to the species recorded as well as the role of this largely intact habitat to biodiversity within a very fragmented local landscape. The high sensitivity terrestrial areas still:

- Serve as and represent ESA as per the Conservation Plan; and
- Support various organisms and may play an important role in the ecosystem if left to recover from the superficial impacts.

The integrity, importance and functioning of these terrestrial biodiversity areas provide a variety of ecological services considered beneficial, with one key service being the maintenance of biodiversity. The preservation of these systems is the most important aspect to consider for the project.

The biodiversity theme sensitivity, as indicated in the screening report, was derived to be Very High, mainly due to the project area being with an ESA1 and the proximity to the protected areas expansion strategy. The completion of the terrestrial biodiversity assessment confirmed the very high sensitivity of certain habitats that overlap with the screening report and therefore corroborates the screening report, i.e., the rocky ridge habitat.

However, the extent of area cleared, cannot been calculated due to the small extent of the disturbance in relation to the satellite images available. It is evident that the area has been cleared/disturbed for the agriculture development which wasn't previously impacted and was natural bushveld which is ESA. The faunal species that utilise this habitat are likely to have been displaced. Thus, due to the extent of the transformation, meeting targets for biodiversity features may have been affected. The mitigations and management a regarding these impacts and their rectification will be the most important factor of this project and must be considered by the authorities. Areas that have been entirely lost due to the unauthorised developments need to be offset or compensated for, and the authorities are to advise.

All future developments may be favourably considered, and no fatal flaws are expected. The future developments must adhere to the prescribed mitigation measures.

3.2 Heritage Impact Assessment

PGS Heritage (Pty) Ltd (PGS) was appointed by Ecosphere (Pty) Ltd to undertake a Heritage Impact Assessment (HIA) for the proposed farming activities on Portions 4, 39 and 40 of the farm Blaauwbank 241 JQ and Portions 1090 and 1091 of the Farm Hartebeestpoort V419 JQ, Lethlabile, Madibeng Local Municipality, Northwest Province.

An archaeological and historical desktop study was undertaken to provide a historical framework for the project area and surrounding landscape. This was augmented by an assessment of previous archaeological and heritage studies completed for the surrounding landscape. Furthermore, an assessment was made of the early editions of the relevant topographic maps.

The 5 farm portions were grouped together in three areas and separate assessments were done for the 3 areas (Figure 11). The findings and recommendations of the assessment were as follows for the 3 groups:

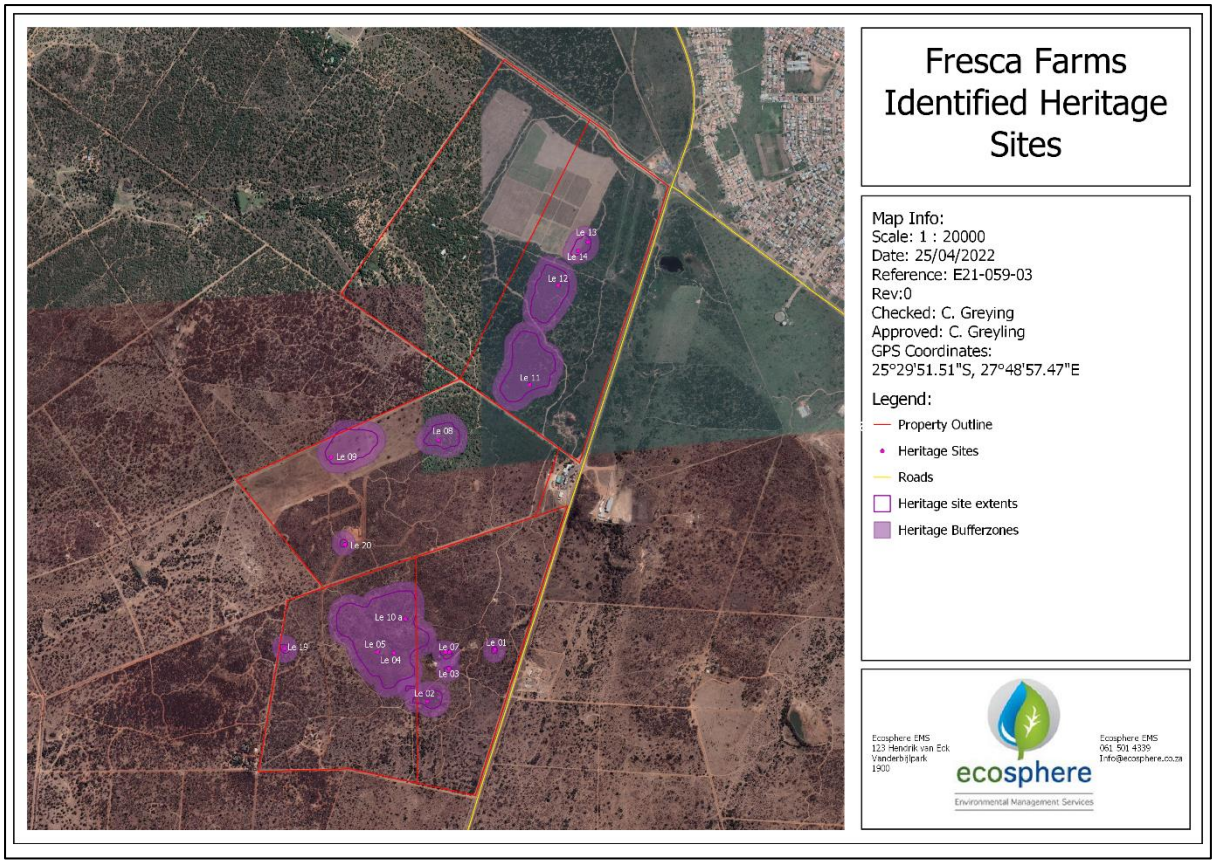


Figure 11: Heritage sites identified during the 3 assessments

3.2.1 Portion 4 of farm Blaauwbank 241 JQ

During the heritage walk through survey, several heritage resources were identified within the proposed farming landscape on portion 4 of the farm Blaauwbank 241 JQ. The remains of two large archaeological were identified. Both sites were already impacted by bush clearing activities Figure 2 and Figure 3 illustrates the extent of the bush clearing already completed and the relative extent of the two sites Le08 and Le09.

Site Le08 is an EFC Iron Age settlement and is approximately 100m x 150m in size. A large portion of the site has been disturbed by clearing of vegetation and ploughing as well as for the construction of a pipeline where a trench has been dug through the site has exposed an abundance of cultural material such as faunal material, ceramic sherds, two sets of human remains and fragments of a polished clay floor. The trench also cuts through a few middens and a kraal while bus clearing and ripping has also exposed some middens to the north of the trench. The decorated (diagnostic) ceramics identified in the disturbed archaeological deposit is indicative of the Eiland facies that is part of the Kalundu Tradition from the Western stream of the EIA dating between 1000 to 1300AD (Huffman, 2007, Biemond, 2014 and pers. comm.)

A second distinct set of diagnostic pottery was found in the exposed midden to the north of the trench. Early indications are that the incised lines of arcades and triangles are associated with the Urewe tradition – Moloko branch and dated from around 1350AD to 1700AD. The absence of stone walling can however indicate earlier dates of 1300 to1500AD (Huffman, 2007). The diagnostic pottery indicative of am early second millennium settlement, rich cultural deposits and in situ stone structures provides unparalleled research opportunity and can provide further insight into the development of the EIA EFC settlement development and climatic interaction. Although the site was damaged during the bush clearing it retains a large

archaeological body of knowledge in primary context. It is rated as having a high cultural heritage significance and is graded with a IIIA heritage rating.

Site Le09 was impacted by bush clearing and soil ripping to a depth of 20cm. This exposed a large concentration of diagnostic ceramics mostly related to the Eiland facies of the first part of the second millennium AD. No structures were identified in the plough area. It was indicated that the ploughing activities were not deeper than 20 cm and all indications are that only the surface of the archaeological deposit was disturbed. The possibility of retrieving data from the disturbed site still exists and must be considered in retrieving as much as possible information to mitigate the damage already done. The site is rated as having a moderate heritage significance and rated as having a IIIB heritage rating. Of low heritage significance is the stone wall finds at Le20 has a low heritage significance and grade as NCW.

According to the SAHRIS palaeontological sensitivity map, the proposed project area falls within a high zero sensitivity zone and n further studies will be required.The proposed farming activities will result in the clearing of extensive tract of vegetation for cultivating vegetables and planting of orchards. These activities will probably be impacting the whole of the farm portion and will directly be impact on and destroy the identified sites.

The impact significance before mitigation on the archaeological sites at Le08 and Le09 will be Very High negative. The impact of the proposed development will be local in extent. The possibility of the impact occurring is that it will happen. The expected duration of the impact is assessed as permanent. Implementation of the recommended mitigation measures will reduce this impact rating to an acceptable moderate negative impact. The proposed mitigation measures are listed in Table 19.

Table 19: Heritage management recommendations

Area and site no.	Mitigation Measures
General project area	Implement a chance to find procedures in case possible heritage finds are uncovered.
Archaeological Structures Le08	• The extent of the site must be identified by a qualified archaeologist and markers placed to determine up to where bush clearing can be done for site **Le08**. • Documentation of the structures and features already disturbed must be done after issuing of a permit under s35 of the NHRA • The two sets of human remains must be excavated under the s35 permit, analysed and with consultation reburied in the closest municipal cemetery. • The documentation must include mapping, layout sketches and test excavation to determine the cultural affinity and temporal scale of the archaeological features • Undisturbed stone structures close to the trench must be documented and test excavation in one of the undisturbed midden to the south of the trench must be conducted. • An application for destruction will then need to be submitted to SAHRA by the developer with the backing of the report emanating from the documentation work • Upon issuing of the destruction permit the specific site can be destroyed and bush clearing continue in those specific areas
Archaeological Structures Le09	• Documentation of the structures and features already disturbed must be done after issuing of a permit under s35 of the NHRA

	• The documentation must include mapping, layout sketches and test excavation to determine the cultural affinity and temporal scale of the archaeological features. • An application for destruction will then need to be submitted to SAHRA by the developer with the backing of the report emanating from the documentation work • Upon issuing of the destruction permit the specific site can be destroyed and bush clearing continue in those specific areas

The overall impact of the proposed project, on the heritage resources identified during this report, is seen as acceptably low after the recommendations have been implemented. Therefore, impacts can be mitigated to acceptable levels allowing for the development to be authorised.

3.2.2 Portions 39 and 40 of farm Blaauwbank 241 JQ

During the heritage walk through survey, several heritage resources were identified within the proposed farming landscape on portion 39 and 40 of the farm Blaauwbank 241 JQ. The remains of three large archaeological settlements were identified. The northern section (Le13 and Le14) of one site was already impacted by bush clearing activities and planting activities already occurred at Le14.

In all likelihood the two identified areas at Le11 and Le12 are part of the same large LIA Early Farming Community (EFC) settlement that continues up to points Le13 and Le14 covering a total area of approximately 800m x 200m. The cultural remains associated with this settlement includes numerous ash middens, low stone walling, grain bin platforms as well as some exposed burned clay floors or the remains of hut rubble. Ethnographic research in the early part of the 20th century (Breutz, 1934) has linked this area to the Bakwena ba Mogôpa and Bapo ba Mogale as it lies between the tribe's main historical settlement areas at Jericho (15km north) and Mamogaleskraal 6km southwest.

This EFC settlement extent over approximately 2 ha with some ephemeral indications of cultural material extending even further to the east. The size and preservation of the remains of material cultural adds to the cultural significance of the site and can be rated as having a medium-high heritage significance grading and of local significance IIIB. According to the SAHRIS palaeontological sensitivity map, the proposed project area falls within a high zero sensitivity zone and n further studies will be required.

The proposed farming activities will result in the clearing of extensive tract of vegetation for cultivating vegetables and planting of orchards. Some of these activities have already impacted on sections of the archaeological site at Le13 and Le14. The whole of the farm portion and will eventually be directly impact on and destroy the identified sites.

The impact significance before mitigation on the archaeological sites at Le11 to Le14 will be Very High negative. The impact of the proposed development will be local in extent. The possibility of the impact occurring is that it will happen. The expected duration of the impact is assessed as permanent. Implementation of the recommended mitigation measures will reduce this impact rating to an acceptable moderate negative impact. The proposed mitigation measures are listed in Table 20.

Table 20: Heritage management recommendations

Area and site no.	Mitigation Measures

General project area	Implement a chance to find procedures in case possible heritage finds are uncovered.
Archaeological Structures Le13-14	• Documentation of the structures and features already disturbed must be done after issuing of a permit under s35 of the NHRA • The documentation must include mapping, layout sketches and test excavation to determine the cultural affinity and temporal scale of the archaeological features • An application for destruction will then need to be submitted to SAHRA by the developer with the backing of the report emanating from the documentation work • Upon issuing of the destruction permit the specific site can be destroyed and bush clearing continue in those specific areas
Archaeological Structures Le11-12	• A 30m No-Go-Buffer-Zone be recommended for the larger stone wall sites. • The extent of the site must be identified by a qualified archaeologist and markers placed to determine the 30 meter buffer where no bush clearing can be done. • In the event that this site cannot be avoided the process as described for site Le13-14 must be followed.

Thus, overall impact of the proposed project, on the heritage resources identified during this report, is seen as acceptably low after the recommendations have been implemented. Therefore, impacts can be mitigated to acceptable levels allowing for the development to be authorised.

3.2.3 Portions 1090 and 1091 of farm Hartebeespoort C419 JQ

During the heritage walk through survey, several heritage resources were identified within the proposed farming landscape on portion 1090 and 1091 of the farm Hartbeespoort C 419.. A late Iron Age (LIA) large stone walled settlement was identified. Stretching from the east of the study area (Le02,03, 06 and 07) through the central neck of the hill (Le04 and 05) from where is spreads out in to a western and northern direction on to the high plain area (Le10) (Figure 11). The central area around Le04/05 has a large central cattle kraal, while towards the north in the area of Le10 vegetation species associated with LIA settlement such as aloe dominate the landscape. This extensive stonewalled settlement is similar in nature than those LIA settlements at Mmakau (Swartkoppies) some15 kilometres to the southeast, Losperberg (15km to the southwest), and Mamogaleskraal (some 6km to the southwest). This archaeological settlement is most probably associated with the Bakwena ba Mogôpa and Bapo ba Mogale as it lies between the tribe's main historical settlement areas at Jericho (15km north) and Mamogaleskraal 6km southwest.

Of lesser significance is the stone wall finds at Le01 and Le19. The stone enclosures at Le19 spills over into the next farm portion towards the west and is delineated by the dirt road just to the east of the walling on Portion 1090.

The stonewalling is fairly well preserved in certain areas (Le10) with indications of ash middens (Le04) and a large kraal at Le05. The main stone walled settlement extent over approximately 11 hectares and seems to be confined to the higher lying areas of the two farm portions. The size and preservation of the remains of material cultural adds to the cultural significance of the site and the area containing (Le04, 05, 06, 07 and Le10) can be rated as having a high heritage significance grading and of local significance IIIA.The structures at

Le01-03 and Le19 is rated as having a medium to low heritage significance grading and of local significance IIIC.

According to the SAHRIS palaeontological sensitivity map, the proposed project area falls within a high zero sensitivity zone and n further studies will be required.The proposed farming activities will result in the clearing of extensive tract of vegetation for cultivating vegetables and planting of orchards. While these activities will most probably be confined to the lower lying flat areas some archaeological heritage could directly be impacted on and be destroyed without the necessary delineation and conservation activities in place before vegetation clearing starts.

The impact significance before mitigation on the archaeological sites at Le01-03 and Le19 will be High negative. The impact of the proposed development will be local in extent. The possibility of the impact occurring is that it will happen. The expected duration of the impact is assessed as permanent. Implementation of the recommended mitigation measures will reduce this impact rating to an acceptable Low negative impact.

The impact significance before mitigation on the archaeological sites at (Le04, 05, 06, 07 and Le10 will be Moderate negative. The impact of the proposed development will be local in extent. The possibility of the impact occurring is that it could happen. The expected duration of the impact is assessed as potentially permanent. Implementation of the recommended mitigation measures will reduce this impact rating to an acceptable VERY LOW negative impact. The proposed mitigation measures are listed in Table 21.

Table 21: Heritage management recommendations

Area and site no.	Mitigation Measures
General project area	Implement a chance to find procedures in case possible heritage finds are uncovered.
Archaeological Structures Le01-03 and Le19	• Documentation of the structures and features already disturbed must be done after issuing of a permit under s35 of the NHRA • The documentation must include mapping, layout sketches and test excavation to determine the cultural affinity and temporal scale of the archaeological features • An application for destruction will then need to be submitted to SAHRA by the developer with the backing of the report emanating from the documentation work • Upon issuing of the destruction permit the specific site can be destroyed and bush clearing continue in those specific areas
Archaeological Structures Le04, 05, 06, 07 and Le10	• A 30m No-Go-Buffer-Zone be recommended for the larger stone wall sites. • The extent of the site must be identified by a qualified archaeologist and markers placed to determine the 30 meter buffer where no bush clearing can be done.

The overall impact of the proposed project, on the heritage resources identified during this report, is seen as acceptably low after the recommendations have been implemented. Therefore, impacts can be mitigated to acceptable levels allowing for the development to be authorised

3.3 Aquatic Ecology Baseline and Impact Assessment

The National Web Based Environmental Screening Tool (NWBEST) has characterized the aquatic theme sensitivity of the project area as “very high” for the watercourse. The Ramogatla River which flows in the western edge of the property is however considered a Critical Biodiversity Area One in the channel and a Critical Biodiversity Area Two in the riparian areas, with the conservation status of the system being critically endangered. The protection level of these systems range from poorly protected. The ecological integrity of the receiving catchment at a desktop level is considered class D (largely modified). The identified waterbodies within the project area were identified to have similar geomorphological and vegetation types combined with the artificial nature and form resulting in one wetland type identified within the project assessment boundary, namely an artificial depression wetland in the form of dams which were not assigned the same sensitivity as wetland systems.

The *in situ* water quality results indicated natural conditions within the waterbodies which contained surface flow within the project area which otherwise constituted of ephemeral systems. As a result, the South African Scoring System version 5 (SASS5) methodology was not applied. The Habitat Integrity Assessment indicated moderately modified (class C) instream and riparian habitat.

The completion of the aquatic biodiversity desktop and field assessments done on site disputes the ‘Very High’ sensitivity presented by the screening report. The calculated site ecological importance sensitivity rating of ‘high’ was assigned to the ephemeral watercourses of the project area based on the lack of rare or listed species expected or sampled within watercourses which were considered critically endangered (CR), Endangered (EN) habitat with a very low recovery to original species composition and functionality. The dams were considered artificial and therefore represent transformed habitat with a site ecological importance sensitivity rating of ‘low’ due to their medium conservational importance as habitat for aquatic life but low functional integrity and medium resilience.

Two aspects were considered under the Fresca Farms project. The first was the constructed irrigation dam which has one post mitigation moderate risk in the form of alteration of groundwater flow, which occurs during the operation of the dam as groundwater is pumped into the dam. The second aspect is the orange orchard development which will convert the associated land use of the project area from game farming to agriculture. This aspect has three identified risk during the construction phase and four identified risks during the operational phase.

Two construction phase impacts are considered moderate risks namely: clearing of watercourse habitat for cultivation and clearing of riparian vegetation for roads with two operational phase impacts considered moderate risks namely increased on site water use and siltation of the watercourse from crop runoff. Due to the current footprint of the orchard as outlines in Figure 2 and Figure 3 along with the implementation of all prescribed mitigations measures and rehabilitation, all risks for the orchard are considered low. This is however provided the current footprint is adhered to which is currently 100 m from the watercourses and therefore wont negatively impact on them.

It is the opinion of the specialists that after a consideration of the current sensitivity of the assessed systems, that according to the site ecological importance, the ephemeral watercourses are characterised as “high’ and the dams which represent transformed land use are characterised as “low”.

The two aspects of the development which form part of the risk assessment were assessed and classified with the resultant outcome that the unlicensed irrigation dam requires authorisation under the provisions of a Water Use Licence (WUL) provided that the mitigation measures held within are adhered to, with a groundwater assessment recommended to

accurately assess the risk. The orange orchard development will not require an authorisation as it remains outside the 100m regulated area of the watercourse.

Chapter 4: Public Participation

1 Legal Compliance

The National Environmental Management Act, 1998 (Act no. 107 of 1998) together with the Environmental Impact Assessment Regulations (GN No. R. 982 of 2014 as amended) requires that a Public Participation Prosses (PPP) is undertaken as part of the scoping and environmental impact prosses. The PPP provides Interested and affected Parties (I&APs) the opportunity become involved, to be notified of the different stages of the project, to have their opinions be considered, for the process to be transparent and builds community trust.

2 Approach to Public Participation

The PPP has been undertaken in accordance with regulation 41 in Chapter 6 of the Environmental Impact assessment Regulations (GN No. R. 982 of 2014) All potential Stakeholders and Interested & Affected Parties have been identified and notified using a newspaper advertisement and notice boards.

It is believed that the Public Participation Process undertaken as part of the initial Scoping phase was sufficient. The initial PPP adequately attempted to not only provide possible Stakeholders and Interested & Affected Parties (I&APs) with adequate information regarding the proposed activity but to also enable them to become involved in the process by providing them with details on regarding the registration required to become an I&AP.

The project area encompasses 3 areas that stretches across 5 different farm portions. A S24G process is being undertaken for 2 of the areas (3 of the 5 farm portions). Therefore, the initial public participation process (whereby possible I&APs and stakeholders are notified) for all three project areas were done separately (Table 22).

Table 22: The 3 separate initial PPPs undertaken as part of the project.

Project Area Nr	Farm Portion Details	Notified in Terms of:
Area 1	Portion 39 of Farm 241 Blaauwbank	Section 24G Application as well as Scoping and Environmental Impact Report
	Portion 40 of Farm 241 Blaauwbank	
Area 2	Portion 4, of Farm 241 Blaauwbank	Section 24G Application as well as Scoping and Environmental Impact Report
Area 3	Portion 1090 of Farm 419 Hartebeestpoort C	Scoping and Environmental Impact Report
	Portion 1091, of Farm 419 Hartebeestpoort C	

The three project areas form part of the total area for which the Scoping and Environmental Impact Assessment process is being undertaken and therefore the information obtained from the initial separate PPP for each of the project areas will be combined so that it can be addressed by a single PPP process in the future.

In total only two I&APs registered during the initial PPP and possible stakeholders were identified by Ecosphere. The Draft Environmental Impact Assessment report will be sent to the identified I&APs and stakeholders for comment.

2.1 Identification of Interested and Affected Parties

Adjacent landowners were identified and notified by email and delivering hard copy notices where possible. Possible stakeholders were identified by Ecosphere to include in the PPP going forward.

2.1.1 List of Identified Stakeholders

Table 23: Contact details of Stakeholders

No.	Name and Surname	Department / Company	Cell No / Tel No	Address	Email
1.	Makhadzi Malema	Madibeng Local Municipality	012 318 9263 / 012 318 8161	53 Van Velden Street, Brits	makhadzimalema@madibeng.gov.za
2.	Tsepho Laneke	Bojanala Platinum District Municipality	014 590 4603/ 083 961 0591	Cnr. Beyers Naude & Fatima Bhayat Drive, Rustenburg, 0300 Postal Address: P.O. Box 1993, Rustenburg, 0300	tshepol@bojanala.gov.za gtlenake@gmail.com
3.	L.N Nevhufumba	Department of Agriculture, Forestry and Fisheries	014 592 1830/ 072 146 0080	Cnr. Dr. James Moroka Drive & Stadium Road, Mahikeng	Lufuno.vhufumba@gmail.com lnevhufumba@environment.gov.za
4.	L. Tshikovhi	North West Department of Economic Development, Environment, Conservation and Tourism	012 252 8960/ 012 358 3685	Office No. 1, Teba Bank Building Brits Office Park, Suite 1, Cnr Kerk & Hendrick Verwoed Str. Brits, 0250	lufunots@tshwane.gov.za
5.	Online	SAHRA	Online	Online	Online

2.1.2 Registered Interested and Affected Parties

Table 24: Table of Interested and Affected Parties

No.	Name and Surname	Department / Company	Cell No / Tel No	Address	Email	Interaction and Date
1.	Marcelle Werner	Adjacent landowner	082 416 3695	PORTION 6 OF BLAAUWBANK, 241/JQ - T0JQ0000000002410000 6 And	ria@ocsprok.co.za	Email: 2021-08-02 Email: 2021-08-10

				PORTION 3 OF BLAAUWBANK, 241/JQ - T0JQ0000000002410000 3		
2.	Ria Pretorius - Marcelle Werners Environmental Representative	Setala Environmental	082 56 8 6344	44 Melrose Boulevard Melrose Arch Johannesburg	ria@setalaenvironmental.co.za	

2.2 Initial Notification of I&APs

Adjacent landowners were identified using the LPI code of the farm portions adjacent to the project area to obtain Windeed reports that contain the owner information of the relevant farms. The information was used to contact the landowners by email. Adjacent landowners of which email addresses could not be obtained were informed by letters that were delivered by Ecosphere to their property. Notices were erected and news advertisements were published to inform potential I&APs.THe PPP started towards the end of July 2021 and consisted of a an initial notification and a call to register. Parties were given 40 days to register as I&APs. The call to register period ended at the end of September 2021.

2.2.1 Letters, Faxes and Emails

An email notification regarding the development were sent to the identified adjacent landowners. The email contained the following information:

- The farm name and portion specific to the landowner
- Informed the adjacent landowner that they had been identified as an important I&AP.
- The farm portion/s included in the project area
- The type of development

2.2.2 Site Notices

Site notices were placed on separate occasions for each of the three areas. More information regarding the site notice specific to the project area can be found in Table 23.

Table 25: Information regarding the notices placed for each of the project areas.

Project Area Nr	Farm Portion Details	Number of Notices	Date Placed	Size of the Notice
Area 1	Portion 39 of Farm 241 Blaauwbank Portion 40 of Farm 241 Blaauwbank	5	29 July 2021	A2 (400mm x 600mm) correx boards
Area 2	Portion 4, of Farm 241 Blaauwbank	5	29 July 2021	A2 (400mm x 600mm) correx boards
Area 3	Portion 1090 of Farm 419 Hartebeestpoort C	5	29 July 2021	

	Portion 1091, of Farm 419 Hartebeestpoort C			A2 (400mm x 600mm) correx boards

The notice boards contained the following information:

- Notice that an application will be submitted to the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT).
- Notice of the type of application that will be submitted
- A brief project description and layout.
- The contact details of the consultants where more information can be obtained.
- Information on how to register as an I&APs.
- Information on how the EIA process works.
- Details of triggered listed activities.

2.2.3 Newspaper Advertisements

Separate newspaper advertisements were placed in the Rustenburg Herold for each of the 3 project areas (Table 24) . The newspaper distributes to Rustenburg, Boons, Bleskop, Brits, Buffelspoort, Derby, Elandskraal, Groot-Marico, Hartbeespoort, Karlienpark, Koster, Kroondal, Lichtenburg, Marikana, Moedwil, Mooinooi, Northam, Rex, RPM, Sun City, Swartklip, Swartruggens, Thabazimbi, Tlhabane, Waterfall Mall, Zinniaville, Zeerust.

Table 26: Details of the newspaper advertisements placed for each of the project areas.

Project Area Nr	Farm Portion Details	Newspaper	Date Placed
Area 1	Portion 39 of Farm 241 Blaauwbank	Rustenburg Herald	30 July 2021
	Portion 40 of Farm 241 Blaauwbank		
Area 2	Portion 4, of Farm 241 Blaauwbank	Rustenburg Herald	23 July 2021
Area 3	Portion 1090 of Farm 419 Hartebeestpoort C	Rustenburg Herald	30 July 2021
	Portion 1091, of Farm 419 Hartebeestpoort C		

The advertisement contained the following information:

- Notice that an application will be submitted to the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT).
- -Notice of the type of application that will be submitted
- A brief project description and layout.
- The contact details of the consultants where more information can be obtained.
- Information on how to register as an I&APs.
- Information on how the EIA process works.
- Details of triggered listed activities.

2.3 Notification of Availability of Environmental Impact Assessment report

No public participation meeting has been held yet but the draft Environmental Impact Assessment reports as well as future draft reports and relevant notifications will be sent to the registered I&APs as well as stakeholders. Notification will take place by letters or email.

The notification will contain the following information:

- Details describing from where the draft Environmental Impact Assessment report can be obtained
- Information regarding the duration of the

2.4 Issues and responses

All comments and issues raised by stakeholders and I&APs during the public review period of the draft Environmental Impact Assessment report will be addressed in the final Environmental Impact Assessment report

2.4.1 Comments and Responses received for the Scoping phase

During the commenting period, comment was only received form one registered I&Ap. Major concerns raised were regarding impacts on water resources quality and socio-economic impacts on surrounding landowners, siting that workers on the farm would poach exotic game. An aquatic assessment already forms a part of plan of study, and it was noted that poaching in the area is already a major concern due to poverty in the surrounding rural areas.

Although Fresca Farms can't guarantee the actions of their employees, the farm is properly fenced and Fresca farms hopes to contribute towards food security in the area, meaning the local community will become less reliant on poaching as livelihood.
A full record of the comments and responses can be found attached in the Comments and responses report.

Chapter 5: Project Alternatives

1 Assessment of Alternatives

There are three project alternatives namely alternative 1, alternative 2 and the no-go alternative. The aim of the proposed development is to transformation of land on specific predetermined properties with the sole purpose of using the transformed land for crop cultivation. Therefore, the provided alternatives are not based on technological, land-use or site alternatives but rather on alternative locations of the development footprint within the predetermined properties based on the consideration of sensitive features (based on the environment and heritage significance).

1.1 No-go Alternative

The no- go alternative refers to the option where the proposed project does not take place thus a situation whereby the indigenous area is not transformed for crop cultivation. The no-go alternative provides the base line against which all the other alternatives can be assessed as it will have no environmental impacts.

What is however important to consider here is that even though the no-go alternative may prevent new environmental impacts from occurring it can still have a variety of implications. Some implications of the no-go alternative are considered below:

- Positive socio-economic impacts relating to the creation of jobs and training opportunities will not be realised
- Food security would not be enhanced
- The opportunity to give left over produce/crops that are not sold to big markets by the farmer to the local community to be sold at affordable prices would not be realized.
- The local economic benefits would not be realised

Converse to the above the following benefits would occur if the no-go alternative was chosen:

- No indigenous vegetation will be removed.
- No changes will be made to the current landscape.
- No heritage sites or artifacts will be impacted on
- Additional water that would be required for crop production would not be used.

Even though the no-go alternative may not result in any environmental impacts it must also be noted that it will have no socio-economic benefits. Therefore, the no-go alternative is not the preferred alternative.

1.2 Alternative 1

This alternative involves the transformation of indigenous bushveld to farmland for crop production. The areas that will be transformed are located across 5 different farms portions namely:

- Portion 1090, of Farm 419 Hartebeestpoort C
- Portion 1091, of Farm 419 Hartebeestpoort C
- Portion 4, of Farm 241 Blaauwbank
- Portion 39 of Farm 241 Blaauwbank
- Portion 40 of Farm 241 Blaauwbank

Fresca Farms is currently renting these properties with the intention to buy them. Some vegetation was already ready removed on portion 4, portion 39 and portion 40 of Blaauwbank Farm number 241 as the applicant was not aware that environmental authorisation (EA) was required at the time. A S24G is currently underway to redress the vegetation removal that took place on these properties. The applicant is also in possession of two tree removal licenses that was issued to them by the Department of Forestry, Fisheries and the Environment.

Considering the investment that the client has already made in the project it would be the preferred alternative to them if the development could take place on the properties, they intend to buy an in and around the areas of those properties were vegetation has already been removed.

1.3 Alternative 2

Alternative 2 involves the transformation of indigenous vegetation across the same 5 farm portions indicated by alternative 1. However, the areas that will be transformed are limited to predetermined areas that do not include environmentally sensitive or areas of heritage significance not including the areas that will be relocated and removed. The proposed development footprint of this alternative is thus informed by the legislative limitations as well as recommendations and mitigations made the specialist studies. Alternative 2 will therefore exclude the following from the proposed development footprint:

- Areas with high environmental sensitivity (as determined by the Terrestrial Biodiversity Assessment) such as rocky outcrops, dams, drainage lines, wetlands, and rivers.
    - If any wetlands are within or around the area it will be ensured that a buffer of 500m will be maintained between the wetland and proposed development footprint
    - Implement preserved natural areas in between agricultural fields to allow animals to freely move from habitats to water resources and other properties.
    - If any dams or drainage lines are present a buffer of a 100m will be maintained between the proposed development footprint and the dam or river.
- Sites with a moderate or high significance rating (as determined by the Heritage Impact Assessments)
    - A 30m No-Go-Buffer-Zone will be kept between the sites with a medium or high significance and the proposed development footprint
    - Sites with a medium or high heritage significance for which destruction permits have been obtained under Section 35 of the National Heritage Resources Act (Act 25 of 1999) from South African Heritage Resource Agency (SAHRA) will not be excluded from the development footprint.

1.4 The decided preferred Alternative

Based on the findings of the desktop study as well as the Terrestrial Biodiversity Assessments and the Heritage Impact Assessments it was determined that Alternative 2 will be the preferred alternative as it will have less risk and a smaller impact on the environment compared to Alternative 1. Alternative 2 as the preferred option and the No-go Alternative, will be brought forward into the EIA phase of the development. A Freshwater and Delineation Assessment was conducted, and the results were incorporated in the EIA report to determine whether there were watercourses and wetlands of concern that required further implementation of mitigation measures and buffers from the proposed developmental footprint.

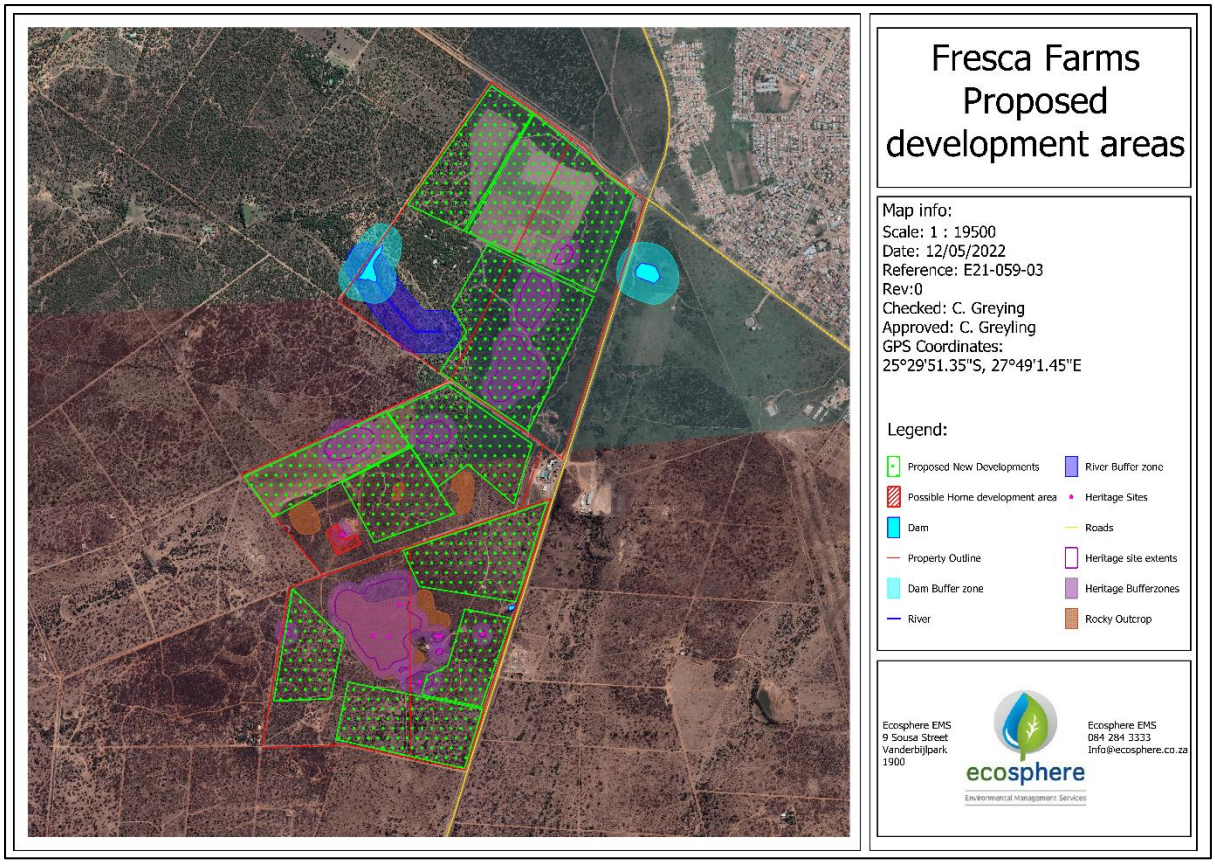


Figure 12: Proposed developments of Alternative 2

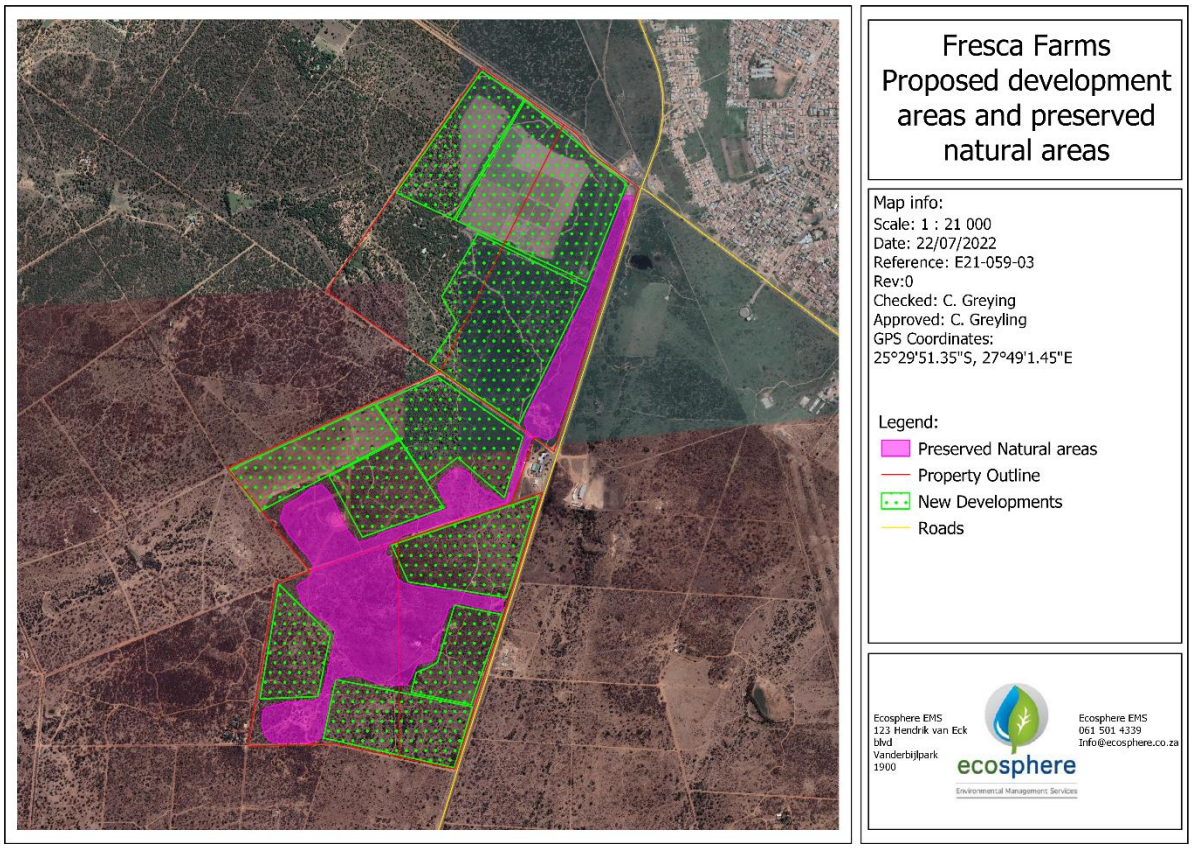


Figure 13: Preserved Natural Areas to be implemented as per Alternative 2

Chapter 6: Environmental Impact Assessment

1 Identification of impacts and mitigation measures

1.1 Impact that may arise during the Planning and Design phase

No significant impacts were identified during the planning and design phase for the proposed development.

1.2 Impact that may arise during Clearing phase

1.2.1 Direct Impacts

Aspect	Potential Impact	Mitigation
Soil Quality	Contamination of soil through oil/fuel leaks or spillage from machinery and/or agricultural vehicle and construction vehicles or storage of substances.	• Ensure that vehicles, machinery, and equipment are inspected and maintained in a good working condition. • Any stationary vehicles, machinery and equipment that are being stored or need repairs must be parked and repaired in a designated area. • Drip tray should be placed under vehicles that stand for more than 24 hours. • There should be provision of proper re-fuelling and maintenance facilities and procedures which will reduce the likelihood of soil contamination. • Ensure vehicles or machinery are refueled over a drip tray. • A register must be kept of all the hazardous materials. • Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act (Act No. 85 of 1993) and the SABS Code of Practice must be adhered to throughout the clearing phase. • Hazardous substances should be stored in a designated area. • Hazardous materials should be stored in sealed, lockable containers when not in use. • Routine inspections should be done to ensure that the hazardous substances are being used effectively. • Staff should be trained on the dangers of the hazardous substances that they will be using • All storage areas that contain hazardous substances must be covered and bunded with an approved impermeable liner or have some form of secondary containment. • Fuel must be stored in above ground storage tanks or sealed containers, contained within a bunded area with sump drainage. • Good housekeeping practices should be implemented on site. • Store oils and/or fuels in designated and demarcated areas.

		• Staff should be trained on how to manage and handle hazardous material. • Spill kits should be kept on site along with an incident register. • Spills should also be attended to immediately. • All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence. • When managing hazardous materials, manufacturer's specifications must be complied with. The Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available. • Ensure that spill kits are replaced after they have been used. • Any soil or area that is contaminated must be cleaned immediately by removing the soil and disposing of the hazardous waste in the correct manner by an approved contractor that will deliver the waste to an appropriate and registered waste site. • Chain of custody documentation should be filed and provided as proof of final end recipient. • When applying or handling hazardous substances a 100m buffer should be implemented from the dam embankments to avoid surface water contamination.
	Disturbance and compaction of soils due to the parking of vehicles and storage of equipment and machinery outside of designated areas	• No parking of vehicles outside of the designated area should be allowed. • No storage of equipment will be allowed outside of the designated area. • Where possible make use of existing access routes and paths. • Exposed and/or cleared areas must be stabilized using the appropriate vegetation to prevent soil erosion and the loss of valuable topsoil.
	Soil pollution due to the inappropriate storage and disposal of hazardous waste	• Hazardous waste should be limited to designated bins or areas and be kept separate from general waste • A register must be kept of all the hazardous materials. • All hazardous waste must be stored in sealed and suitably marked containers for removal to a registered hazardous waste disposal facility. • Storage areas shall be monitored for spills and any spills shall be contained, cleaned, and rehabilitated immediately. • When managing hazardous materials, manufacturer's specifications must be complied with. the Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available. • Waste may not be burned on site. • The Contractor and/or Farm Manager is required to refer to the Hazardous Substances Act No 15 of 1973 act to determine whether any substance (new or waste) stored on site is subject to controls contained within the act

		• All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence. • Any oil spillage on site will be excavated to a depth determined by environmental representative and disposed of for removal to a registered hazardous waste disposal site. Excavated areas are to be refilled with suitable replacement material. Alternative in-situ remediation techniques could be used, if approved by the environmental representative.
Air Quality	Dust pollution due to dust generated by movement of the construction vehicles and the equipment or machinery	• Ensure construction vehicles and equipment is operational only when required and are not left to run if not in use. • Construction vehicles should adhere to the recommended speed limit of 30 km per hour. • Monitor the amount of dust created from the activities and use dust suppression such as spraying water when necessary. • Complaints that emanate from dust issues should be noted in the complaints register and addressed immediately.
Improper use of pesticides and herbicides	Contamination of soil through spills or improper use and irrigation methods.	• Ensure agricultural vehicles and equipment is operational only when required and not unnecessarily run when not in use. • Ensure that the appropriate amount of fertilizers, pesticides and herbicides are applied. • Make use of environmentally friendly pesticides and fertilizers • When applying or handling fertilizers, pesticides and herbicides a 100m buffer should be implemented from the dam embankments to avoid surface water contamination.
Terrestrial Ecology	The uncontrolled movement and storage of heavy machinery, vehicles and equipment can have an impact on the surrounding habitat.	• Ensure that the movement and storage of heavy machinery, vehicles and equipment are limited to a demarcated area within the demarcated development footprint.
Waste Management	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of general waste	• Littering must not occur on site. • If litter is present in the surrounding environment, ensure that it collected and disposed of in the provided bins. • No waste should be left onsite even if it is biodegradable • Provide staff with training with regards to responsible waste management • General waste must be confined to bins which must be strategically placed around the site • Bins should be vermin proof • General waste must be stored separately from hazardous waste. • General waste must be stored appropriately and preferably be removed to a registered landfill site on a weekly basis to prevent rodents and pests from entering the site.

		• The maximum domestic waste storage period should be 10 days. • Waste must not be buried or burned on site. • Waste bins should not be placed near a surface water resource. • Motivate recycling were possible
	Lack of access to ablution facilities or improper management of ablution facilities can result in sewage runoff and pollution to surrounding environment	• Ensure that sufficient ablution facilities are available on site. • No indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances. • A minimum of one toilet must be provided per ten persons. Portable toilets must be pumped dry to ensure the system does not degrade over time and spill into the surrounding area. • Where mobile portable toilets are required, the following must be ensured: • Toilets are located no closer than 100m to any watercourse or water body. • Toilets are secured to the ground to prevent them from toppling due to wind or any other cause. • No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the best practice principle. • Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out. • Toilets are emptied before long weekends and workers holidays and must be locked after working hours. • The contents of the ablution facilities should be disposed of at a licenced disposal facility. • Toilets should be serviced regularly, and the environmental representative must inspect toilets to ensure compliance to health standards.
	pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of the hazardous waste	• Hazardous waste should be limited to designated bins or areas and be kept separate from general waste • A register must be kept of all the hazardous materials. • All hazardous waste must be stored in sealed and suitably marked containers for removal to a registered hazardous waste disposal facility. • Storage areas shall be monitored for spills and any spills shall be contained, cleaned, and rehabilitated immediately. • When managing hazardous materials, manufacturer's specifications must be complied with. the Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available. • Waste may not be burned on site. • The Contractor and/or Farm Manager is required to refer to the Hazardous Substances Act No 15 of 1973 act to determine whether any substance (new or waste) stored on site is subject to controls contained within the act

		• All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence. • Any oil spillage on site will be excavated to a depth determined by environmental representative and disposed of for removal to a registered hazardous waste disposal site. Excavated areas are to be refilled with suitable replacement material. Alternative in-situ remediation techniques could be used, if approved by the environmental representative.
Heritage	Loss of sites with significant heritage	• Ensure that all the known heritage sites (identified by the Heritage Impact Assessment) are clearly indicated on a map and clearly visible through demarcation or by barricading the areas in the field. New findings: • Implement a chance to find procedures in case possible heritage finds are uncovered. • Work should immediately cease if there is a chance discovery, and a heritage specialist should be consulted before work can proceed. • No artefacts may be removed, destroyed, or interfered with. • Any graves that are found on site should be fenced off and access must be allowed for visitation/ or alternatively it may be negotiated to relocate the graves. Established findings (Identified by the Heritage Impact Assessment): • Incorporate the mitigation measures provided by the Heritage Impact Assessment • The extent of the site must be identified by a qualified archaeologist • Implement a 30m no-go buffer zone • Markers placed to determine the 30 meter buffer where no bush clearing can be done. In the event that this site cannot be avoided the following process should be followed: • Documentation of the structures and features already disturbed must be done after issuing of a permit under s35 of the NHRA The documentation must include mapping, layout sketches and test excavation to determine the cultural affinity and temporal scale of the archaeological features • An application for destruction will then need to be submitted to SAHRA by the developer with the backing of the report emanating from the documentation work • Upon issuing of the destruction permit the specific site can be destroyed and bush clearing continue in those specific areas • Ensure that all employees, contractors and the environmental representative are made aware of the heritage sites and their buffers if applicable. This can be through training.

		• Ensure that sites that require a buffer are clearly demarcated and indicated on maps that should be distributed to the contractors.
Noise Pollution	Noise disturbances caused by agricultural and construction activities by the machinery/vehicles used for clearing vegetation and land preparation	• All the relevant municipal by-laws relating to noise control should be adhered to. • All construction vehicles and equipment must be kept in good working order to reduce noise pollution. • Construction activities should be kept strict and acceptable working hours. • Adherence to Occupation Health and Safety Act. • A "complaints register," consisting of all public complaints and actions in response to these complaints, must be maintained during the construction phase
Visual	Construction activities such as the clearing of vegetation could result in the visual disturbance. The transformation of the current indigenous vegetation to crop production is likely to alter the aesthetic quality.	• The clearance of vegetation must be restricted to the demarcated development footprint. • Any disturbed areas should be rehabilitated as soon as possible. • Apply dust control measures during construction activities. • Ensure that the staff is made aware that they will not be allowed to litter. • Ensure that the staff is trained to dispose the different types of litter at the appropriate demarcated points or bins. • Ensure that appropriate bins are provided for staff to dispose of general waste and that the staff knows where to find the bins. • A row of indigenous trees has been planted at the west boundary of portion 4 and further application of this mitigation measure can be implemented at the rest of the impacted areas if required.

1.2.2 Indirect Impacts

Aspect	Potential Impact	Mitigation
Soil Quality	The clearance of vegetation and failure to implement stormwater management measures can result in increased runoff that will cause erosion.	• Implement stormwater control • Develop and implement the use of an erosion register • Remedial action should be taken at the first signs of erosion. • Exposed and or cleared areas must be stabilised using appropriate vegetation to prevent soil erosion and the loss of valuable topsoil. • When levelling of the field takes place, berms around the proposed crop production area need to be constructed as to prevent runoff from rainfall from carrying the topsoil away. • All surface run-offs shall be managed in such a way to ensure erosion does not occur.
	Loss/ change of topsoil layer during the initial stages of	• Vegetation clearance must be kept to the proposed development site only. • Minimize the amount of topsoil to be removed.

	vegetation clearance that can lead to erosion through wind and water.	• Limit the removal of topsoil to at the area within the development footprint • Topsoil should not be contaminated with anything that may impair its ability to support plants. • Excess topsoil should be separated and stored appropriately and then reworked into the levelled areas before planting of crops. • If any topsoil is stored, the topsoil stockpiles may not exceed a height of 2m at the highest point and should not be stored on steep slopes or near watercourses. • Stockpiles should be kept free of weeds. • Clearance of vegetation and levelling of land should commence during periods when the wind intensity is low and rainfall events are seldom and rare. • An Erosion Incident Register should be compiled and implemented. The site should be monitored regularly for signs of erosion. Remedial actions should be taken at the first signs of erosion. • When levelling of the field takes place, berms around the proposed crop production area need to be constructed as to prevent runoff from rainfall from carrying the topsoil away. • All surface run-offs shall be managed in such a way to ensure erosion does not occur.
Terrestrial Ecology	The clearing of vegetation, soil ripping, and land preparation will lead to the damage and loss of flora biodiversity and SCC within the proposed development footprint.	• A site walk should take place before the development commences to ensure that the sensitive and no-go areas are pointed out and properly demarcated. • Ensure that protected Marula trees have been marked and that they will not be cleared. • Demarcate the development footprint clearly and ensure that clearing of vegetation only take place within the boundaries of the specified demarcated development footprint. • If any SCC are identified they must be relocated to the nearest appropriate habitat, preferably a protected/ undisturbed portion of the property. • If the removal of protected plants is required a destruction permit should first be obtained. • If the protected plant is not removed, it is important that they are visible and that it is indicated that they are not to be removed. • Employees must be prohibited from harvesting SCC plants. • Only indigenous species should be used for rehabilitation purposes which must aim to revegetate exposed soil. • As far as practically possible, existing roads should be utilized.
	Loss of fauna due to habitat destruction	• During the clearing of vegetation and land preparation most vertebrae will move away from the site, during this activity, slow moving reptiles and smaller mammals should be allowed to move away unharmed or be assisted to relocate to uncleared areas.
	Loss of fauna and flora to fatalities as a result of, accidents, opportunistic hunting, baiting, trapping and illegal harvesting.	

		• Ensure movement corridors for wildlife to freely move about without any further disruptions • Staff should receive training on proper management and response should animals be encountered on site. • Animals must not be injured or killed where possible. • Demarcate the development footprint clearly to prevent the larger area of the habitat from being impacted on. • Care should be taken to avoid clearance in sensitive areas, such as the rocky outcrops, these areas should remain undisturbed. Activities that form part of the proposed development should be restricted to the demarcated development footprint. • If any SCC are identified the SCC should be translocated to the nearest appropriate habitat, preferably a protected/ undisturbed portion of the property.
Water Quality	Clearing activities and the movement of vehicles can negatively impact surface water resources if the appropriate buffers are not maintained.	• Ensure that all contractors and employees are aware of the buffers that are required from the surface water features. • Ensure that all the employees and contractor are aware of the location of the surface water features. • Don't allow any type of vehicles or equipment and machinery to move within the buffer of the surface water feature or the surface water feature itself.

1.2.3 Cumulative Impacts

Aspect	Potential Impact	Mitigation
Water Quality	Pollution of the groundwater and surface water resources through oil leaks or spillage due to vehicle maintenance, improper storage, and handling and/or storage of hazardous materials /chemicals such as fuel	• Ensure that vehicles are inspected and maintained in a good working condition. • Any stationary vehicles or vehicles that need repairs must be parked in a designated area that is lined. • Drip tray should be placed under vehicles that stand for more than 24 hours. • There should be provision of proper re-fuelling and maintenance facilities and procedures which will reduce the likelihood of soil contamination. • Ensure vehicles are refuelled over a drip tray. • Any soil or area that is contaminated must be cleaned immediately by removing the soil and disposing of the hazardous waste in the correct manner. • Spill kits should be kept on site and all spills should be attended to immediately • Spill kits should be replaced as required. • All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence. • When managing hazardous materials, manufacturer's specifications must be complied with. The Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available.

		• All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence. • When managing hazardous materials, manufacturer's specifications must be complied with. The Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available. • A register must be kept of all the hazardous materials. • Routine inspections should be done to ensure that the hazardous substances are being used effectively. • Staff should be trained on the dangers of the hazardous substances that they will be using • Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act (Act No. 85 of 1993) and the SABS Code of Practise must be adhered to throughout the construction phase. • Hazardous materials should be stored in sealed, lockable containers when not in use. • All storage areas that contain hazardous substances must be covered and bunded with an approved impermeable liner or have some form of secondary containment. • Fuel must be stored in above ground storage tanks or sealed containers, contained within a bunded area with sump drainage. • Staff should be trained on how to handle and manage hazardous material. • Good housekeeping practices should be implemented on site. • Hazardous substances should be stored in a designated area. • When applying or handling hazardous substances a 100m buffer should be implemented from the dam embankments to avoid surface water contamination.
	Storage and generation of general and domestic waste can pollute surface water as well as groundwater and therefore water quality	• Littering must not occur on site. • If litter is present in the surrounding environment, ensure that it collected and disposed of in the provided bins. • No waste should be left onsite even if it is biodegradable • Provide staff with training with regards to responsible waste management • General waste must be confined to bins which must be strategically placed around the site • Bins should be vermin proof • General waste must be stored separately from hazardous waste. • General waste must be stored appropriately and preferably be removed to a registered landfill site on a weekly basis to prevent rodents and pests from entering the site. • The maximum domestic waste storage period should be 10 days.

		• Waste must not be buried or burned on site. • Waste bins should not be placed near a surface water resource. • Motivate recycling were possible
	Storage and generation of hazardous waste can Pollute surface water as well as groundwater and therefore water quality	• Hazardous waste should be limited to designated bins or areas and be kept separate from general waste • A register must be kept of all the hazardous materials. • All hazardous waste must be stored in sealed and suitably marked containers for removal to a registered hazardous waste disposal facility. • Storage areas shall be monitored for spills and any spills shall be contained, cleaned, and rehabilitated immediately. • When managing hazardous materials, manufacturer's specifications must be complied with. the Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available. • Waste may not be burned on site. • The Contractor and/or Farm Manager is required to refer to the Hazardous Substances Act No 15 of 1973 act to determine whether any substance (new or waste) stored on site is subject to controls contained within the act • All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence. • Any oil spillage on site will be excavated to a depth determined by environmental representative and disposed of for removal to a registered hazardous waste disposal site. Excavated areas are to be refilled with suitable replacement material. Alternative in-situ remediation techniques could be used, if approved by the environmental representative.
Socio-Economic	Socio-economic development through job creation and training opportunities.	• None
Improper use of pesticides and herbicides	Pollution to surface water as well as groundwater due to runoff from crops.	• Ensure agricultural vehicles and equipment is operational only when required and not unnecessarily run when not in use. • Ensure that the appropriate amount of fertilizers, pesticides and herbicides are applied. • Make use of environmentally friendly pesticides and fertilizers • When applying or handling fertilizers, pesticides and herbicides a 100m buffer should be implemented from the dam embankments to avoid surface water contamination.
Air Quality	Air pollution due to dust generated by agricultural vehicles and equipment/ machinery during clearing activities (especially during the dry, windy conditions.)	• Agricultural vehicles should adhere to the recommended speed limit of 30 km per hour on unpaved roads. • Monitor the amount of dust created from the activities and use dust suppression such as spraying loose soil with water when necessary. • No non-environmentally friendly suppressants may be used as this could result in the pollution of water sources.

		• Develop and implement he use of a complaints register. • Complaints that emanate from dust issues should be addressed immediately. • Wind breaks should be developed where necessary.
	Air pollution due to CO2 emissions from the construction vehicles and the equipment or machinery	• Ensure that equipment, machinery as well as construction and agricultural vehicles are used effectively. • Ensure that equipment, machinery as well as construction and agricultural vehicles are not left to idle • Ensure agricultural vehicles and equipment is well maintained and regularly serviced to ensure efficient use. • Use machines/equipment that are fuel efficient or manual equipment where possible. • Ensure that personnel are trained to use equipment efficiently.

1.3 Impact that may arise during the Operational phase

1.3.1 Direct Impacts

Aspect	Potential Impact	Mitigation
Soil Quality	Disturbance of soils due to the parking of vehicles and storage of equipment and machinery outside of designated areas	• No parking of vehicles outside of the designated area should be allowed. • No storage of equipment will be allowed outside of the designated area. • Make use of existing access routes and paths • Exposed and/or cleared areas must be stablished using the appropriate vegetation to prevent soil erosion and the loss of valuable topsoil.
	The improper application of fertilizers, pesticides, and/or herbicides, could lead to the loss/alteration of soil quality and structure within the development area.	• The quality and health status of surrounding soils should be monitored throughout the operational phase. • Ensure that pesticides and herbicides are applied, handled, stored and disposed of according to their specific label and MSDS. Crops should not be irrigated right after application. • Routine inspections should be done to ensure that the hazardous substances are being used effectively. • Staff should be trained on the dangers of the substances that they will be using • The application of fertilizers,' pesticides, and/or herbicides to cultivated areas must be carefully managed. • The staff that will be working with the fertilisers, pesticides and herbicides must be trained to do so. • Spill kits must be available onsite. • The environmental representative must determine and approve the method for treatment of the polluted soil.
	Contamination of soil through oil/fuel leaks or spillage from machinery and/or agricultural vehicle and construction vehicles or storage of substances.	• Ensure that vehicles, machinery, and equipment are inspected and maintained in a good working condition. • Any stationary vehicles, machinery and equipment that are being stored or need repairs must be parked and repaired in a designated area.

		• Drip tray should be placed under vehicles that stand for more than 24 hours. • There should be provision of proper re-fuelling and maintenance facilities and procedures which will reduce the likelihood of soil contamination. • Ensure vehicles or machinery are refueled over a drip tray. • A register must be kept of all the hazardous materials. • Routine inspections should be done to ensure that the hazardous substances are being used effectively. • Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act (Act No. 85 of 1993) and the SABS Code of Practice must be adhered to throughout the clearing phase. • Hazardous substances should be stored in a designated area. • Hazardous materials should be stored in sealed, lockable containers when not in use. • All storage areas that contain hazardous substances must be covered and bunded with an approved impermeable liner or have some form of secondary containment. • Fuel must be stored in above ground storage tanks or sealed containers, contained within a bunded area with sump drainage. • Good housekeeping practices should be implemented on site. • Store oils and/or fuels in designated and demarcated areas. • Staff should be trained on how to manage and handle hazardous material. • Staff should be trained on the dangers of the hazardous substances that they will be using • Spill kits should be kept on site along with an incident register. • All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence. • When managing hazardous materials, manufacturer's specifications must be complied with. The Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available. • Spills should also be attended to immediately. • Ensure that spill kits are replaced after they have been used. • Any soil or area that is contaminated must be cleaned immediately by removing the soil and disposing of the hazardous waste in the correct manner by an approved contractor that will deliver the waste to an appropriate and registered waste site.

		• Chain of custody documentation should be filed and provided as proof of final end recipient. • When applying or handling hazardous substances a 100m buffer should be implemented from the dam embankments to avoid surface water contamination.
	Soil pollution due to the inappropriate storage and disposal of hazardous waste	• Hazardous waste should be limited to designated bins or areas and be kept separate from general waste • A register must be kept of all the hazardous materials. • All hazardous waste must be stored in sealed and suitably marked containers for removal to a registered hazardous waste disposal facility. • Storage areas shall be monitored for spills and any spills shall be contained, cleaned, and rehabilitated immediately. • When managing hazardous materials, manufacturer's specifications must be complied with. the Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available. • Waste may not be burned on site. • The Contractor and/or Farm Manager is required to refer to the Hazardous Substances Act No 15 of 1973 act to determine whether any substance (new or waste) stored on site is subject to controls contained within the act • All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence • Any oil spillage on site will be excavated to a depth determined by environmental representative and disposed of for removal to a registered hazardous waste disposal site. Excavated areas are to be refilled with suitable replacement material. Alternative in-situ remediation techniques could be used, if approved by the environmental representative.
Terrestrial Ecology	Fresca farms management or staff can expand the footprint and impact on a sensitive due to uncontrolled and poor regulation of activities.	• Ensure that Fresca Farms management and staff are all aware of the no-go and sensitive areas. • Ensure that the management and staff are all aware of the boundaries of the development footprint. • Conduct more specialist studies and acquire further environmental authorisation of Fresca Farms plan to expand in the future.
Waste Management	Lack of access to ablution facilities or improper management of ablution facilities can result in sewage runoff and pollution tof surrounding environment	• Ensure that sufficient ablution facilities are available on site. • No indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances. • A minimum of one toilet must be provided per ten persons. Portable toilets must be pumped dry to ensure the system does not degrade over time and spill into the surrounding area. • Where mobile portable toilets are required, the following must be ensured: • Toilets are located no closer than 100m to any watercourse or water body.

		• Toilets are secured to the ground to prevent them from toppling due to wind or any other cause. • No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the best practice principle. • Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out. • Toilets are emptied before long weekends and workers holidays and must be locked after working hours. • The contents of the ablution facilities should be disposed of at a licenced disposal facility. • Toilets should be serviced regularly, and the environmental representative must inspect toilets to ensure compliance to health standards.
	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of general waste	• Littering must not occur on site. • If litter is present in the surrounding environment, ensure that it collected and disposed of in the provided bins. • No waste should be left onsite even if it is biodegradable • Provide staff with training with regards to responsible waste management • General waste must be confined to bins which must be strategically placed around the site • Bins should be vermin proof • General waste must be stored separately from hazardous waste. • General waste must be stored appropriately and preferably be removed to a registered landfill site on a weekly basis to prevent rodents and pests from entering the site. • The maximum domestic waste storage period should be 10 days. • Waste must not be buried or burned on site. • Waste bins should not be placed near a surface water resource. • Motivate recycling were possible
	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of the hazardous waste	• Hazardous waste should be limited to designated bins or areas and be kept separate from general waste • A register must be kept of all the hazardous materials. • All hazardous waste must be stored in sealed and suitably marked containers for removal to a registered hazardous waste disposal facility. • Storage areas shall be monitored for spills and any spills shall be contained, cleaned, and rehabilitated immediately. • When managing hazardous materials, manufacturer's specifications must be complied with. the Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available. • Waste may not be burned on site. • The Contractor and/or Farm Manager is required to refer to the Hazardous Substances Act No 15 of 1973 act to

		determine whether any substance (new or waste) stored on site is subject to controls contained within the act • All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence • Any oil spillage on site will be excavated to a depth determined by environmental representative and disposed of for removal to a registered hazardous waste disposal site. Excavated areas are to be refilled with suitable replacement material. Alternative in-situ remediation techniques could be used, if approved by the environmental representative.
Heritage	Uncontrolled movement and agricultural activities could lead to the loss of natural or cultural heritage due to not staying within authorized footprint Ploughing or tillage of the soil could lead to the discovery and destruction of artefactual burial sites	• Ensure that all the known heritage sites (identified by the Heritage Impact Assessment) are clearly indicated on a map and clearly visible through demarcation or by barricading the areas in the field. New findings: • Implement a chance to find procedures in case possible heritage finds are uncovered. • Work should immediately cease if there is a chance discovery, and a heritage specialist should be consulted before work can proceed. • No artefacts may be removed, destroyed, or interfered with. • Any graves that are found on site should be fenced off and access must be allowed for visitation/ or alternatively it may be negotiated to relocate the graves. Established findings (Identified by the Heritage Impact Assessment): • Incorporate the mitigation measures provided by the Heritage Impact Assessment • The extent of the site must be identified by a qualified archaeologist • Implement a 30m no-go buffer zone • Markers placed to determine the 30 meter buffer where no bush clearing can be done. In the event that this site cannot be avoided the following process should be followed: • Documentation of the structures and features already disturbed must be done after issuing of a permit under s35 of the NHRA The documentation must include mapping, layout sketches and test excavation to determine the cultural affinity and temporal scale of the archaeological features • An application for destruction will then need to be submitted to SAHRA by the developer with the backing of the report emanating from the documentation work • Upon issuing of the destruction permit the specific site can be destroyed and bush clearing continue in those specific areas • Ensure that all employees, contractors and the environmental representative are made aware of the

		heritage sites and their buffers if applicable. This can be through training. Ensure that sites that require a buffer are clearly demarcated and indicated on maps that should be distributed to the contractors.
Noise Pollution	As the site would have been established, no major impacts are expected, however due to the phased nature of agricultural activities, there may be little noise during the operational phase when harvesting takes place	• All the relevant municipal by-laws relating to noise control should be adhered to. • All construction vehicles and equipment must be kept in good working order to reduce noise pollution. • All agricultural activities should be kept to strict and acceptable working hours. • Adherence to Occupation Health and Safety Act. • A "complaints register," consisting of all public complaints and actions in response to these complaints, must be maintained during the construction phase
Visual	The visual impacts of the agricultural activities will alter the aesthetic quality of the area.	• Rehabilitation of the disturbed areas should be monitored during the operational phase. • Apply dust control measures during operational activities- ploughing and cultivation • Ensure that the staff is made aware that they will not be allowed to litter. • Ensure that the staff is trained to dispose the different types of litter at the appropriate demarcated points or bins. • Ensure that appropriate bins are provided for staff to dispose of general waste and that the staff knows where to find the bins.
Fire	The development of bush fires because of smoking or the creation of open fires.	• Employees must be prohibited from making open fires, except in designated controlled areas. • Suitably firefighting equipment should be available on site. • Ensure that employees only smoke in designated areas • Maintain fire breaks as well as access roads. • Have an emergency procedure in place.

1.3.2 Indirect Impacts

Aspect	Potential Impact	Mitigation
Soil Quality	Poor irrigation methods and systems can result in erosion	• Irrigation methods and systems should be implemented to deliver the exact water requirements. • Irrigation methods must ensure minimal runoff. • The quality and health status of surrounding soils should be monitored throughout the operational phase. • Disturbed areas must be stablished using the appropriate indigenous vegetation to prevent soil erosion and the loss of valuable topsoil. • Crops should not be irrigated right after the application of pesticides or herbicides. Ensure that pesticides and herbicides are applied according to their specific label and MSDS. • The site should be monitored regularly for signs of erosion. Remedial action must be taken at the first signs

		of erosion. Natural areas outside the operational footprint should be rehabilitated if impacted by erosion. • Any alteration of soil quality should be remediated in line with best practices.
Terrestrial Ecology	During the operational phase, vehicles, crew and materials could increase animal fatalities through opportunistic hunting, collisions, accidents or baiting and trapping.	• During the harvesting land preparation activities most vertebrae will move away from the site, slow moving reptiles and smaller mammals should be allowed to move away unharmed or be assisted to relocate to uncleared areas. • Ensure rridors for wildlife to freely move about without any further disruptions • Train all staff on site regarding the proper management and response should animals be encountered. • Implement specified road speed limits (30 kilometres per hour) and provide training to staff. • Staff should receive training on proper management and response should animals be encountered on site. • No trapping, hunting, or baiting and removing of faunal species from the site. • Animals must not be injured or killed where possible. • The areas that are undisturbed should be left in their natural state, as this will encourage certain animal life to stay in those areas. • Bird houses can also be built around the site which will encourage birdlife to occupy them and keep the pest numbers low. • Ensure that all farming operations are limited to the existing development footprint. • Care should be taken to avoid and limit activities in sensitive areas, such as the rocky outcrops, these areas should remain undisturbed. Activities that form part of the proposed development should be restricted to the demarcated development footprint.
	Poor rehabilitation of disturbed areas not used for agricultural purposes may lead to the permanent degradation of ecosystems as well as allow alien vegetation species to encroach on indigenous vegetation	• An Alien Vegetation Management Plan must be implemented to prevent the establishment and prevent the spread of undesirable alien plant species during the Operational Phase. • Regular monitoring and removal of all alien vegetation are required as well as inspection in and around the crop area to prevent the Alien Invasive Species from spreading to the surrounding indigenous area
Water Quality	The consumption of excessive water during irrigation of crops will impact on water quantity and quality	• Implement the use of creative and sustainable irrigation methods to ensure conservation of water. • Where possible try to farm with drought tolerant crops • Provide staff with training with regards to responsible water use practices.

1.3.3 Cumulative Impacts

Aspect	Potential Impact	Mitigation

Air Quality	Dust pollution during the dry windy conditions when preparing and harvesting the land.	• Agricultural vehicles should adhere to the recommended speed limit of 30 km per hour on unpaved roads. • Monitor the dust created from activities during the operation phase and use dust suppression such as spraying water on exposed soft soil surfaces. • No non-environmentally friendly suppressants may be used as this could result in the pollution of water sources. • It is recommended that no land be left empty for extended periods of time to limit dust being generated through the wind • Ensure that any complaints regarding dust is added to the complaints registered
	Dust pollution due to dust generated by movement of the construction vehicles and the equipment or machinery	• Ensure construction vehicles and equipment is operational only when required and are not left to run if not in use. • Construction vehicles should adhere to the recommended speed limit of 30 km per hour. • Monitor the amount of dust created from the activities and use dust suppression such as spraying water when necessary. • Complaints that emanate from dust issues should be noted in the complaints register and addressed immediately.
Water Quality	Generation and storage of general waste can pollute surface water as well as groundwater and therefore water quality	• Littering must not occur on site. • If litter is present in the surrounding environment, ensure that it collected and disposed of in the provided bins. • No waste should be left onsite even if it is biodegradable • Provide staff with training with regards to responsible waste management • General waste must be confined to bins which must be strategically placed around the site • Bins should be vermin proof • General waste must be stored separately from hazardous waste. • General waste must be stored appropriately and preferably be removed to a registered landfill site on a weekly basis to prevent rodents and pests from entering the site. • The maximum domestic waste storage period should be 10 days. • Waste must not be buried or burned on site. • Waste bins should not be placed near a surface water resource. • Motivate recycling were possible
	Generation and storage of hazardous waste can pollute surface water as well as groundwater and therefore water quality	• Hazardous waste should be limited to designated bins or areas and be kept separate from general waste • A register must be kept of all the hazardous materials. • All hazardous waste must be stored in sealed and suitably marked containers for removal to a registered hazardous waste disposal facility.

		• Storage areas shall be monitored for spills and any spills shall be contained, cleaned, and rehabilitated immediately. • When managing hazardous materials, manufacturer's specifications must be complied with. the Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available. • Waste may not be burned on site. • The Contractor and/or Farm Manager is required to refer to the Hazardous Substances Act No 15 of 1973 act to determine whether any substance (new or waste) stored on site is subject to controls contained within the act • All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence • Any oil spillage on site will be excavated to a depth determined by environmental representative and disposed of for removal to a registered hazardous waste disposal site. Excavated areas are to be refilled with suitable replacement material. Alternative in-situ remediation techniques could be used, if approved by the environmental representative.
Socio-Economic	The operational phase will provide job creation, economic growth and rural development	• None
	Contributes to food Security	• None
Air Quality	The use of fuel powered machines/equipment contributes to the build-up of greenhouse gases in the atmosphere	• Use machines/equipment that are fuel efficient or manual equipment where necessary • Ensure that personnel are trained to use equipment efficiently. • Ensure that equipment, machinery as well as construction and agricultural vehicles are not left to idle • Ensure that equipment, machinery and agricultural vehicles are well maintained and regularly serviced.
	Air pollution due to CO2 emissions from agricultural vehicles and the use of fertilizers, herbicides and/or pesticides on the site	• Ensure agricultural vehicles and equipment is operational only when required and not unnecessarily run when not in use. • Ensure that the appropriate amount of fertilizers, pesticides and herbicides are applied. • Make use of environmentally friendly pesticides and fertilizers • Ensure agricultural vehicles and equipment is well maintained and regularly serviced to ensure efficient use.

1.4 Impacts that may arise during decommissioning phase

Due to the nature of the project there has been no plans made for a decommissioning phase as the site will continue to be used for agricultural activities. If the project is decommissioned at a later stage, the impacts associated are likely to be similar to the impacts which have been identified in the construction phase. It is then recommended that the EMPr be updated by a suitably qualified EAP prior to the decommissioning of the project abs implementation throughout the decommissioning phase.

2 Significance of Identified Impacts

2.1 Methodology

The methodology followed to determine the significance of each impact caused by the activity are set out below:

The potential impacts are assigned a significance rating (S). (S) is formulated by adding the sum of numbers assigned to Magnitude (M) Extent (E) and Duration (D), and multiplying the sum by the Probability (P): **S= (M+E+D) P**

Criteria	Category	Score
Magnitude: How serious is the impact and how easily an it be reversed	None	0
	Low	2
	Moderate	4
	High	6
Extent: What is the scale and size of the impact	Site	1
	Local	2
	Regional	3
	National	4
Duration: Over what time scale will this impact have effect)	Immediate	1
	Short Term	2
	Medium Term	3
	Long Term	4
	Permanent	5
Probability: How likely is it that **t**his impact will occur	Improbable	1
	Probable	2
	Definite	3

The significance ratings calculated has been done by taking into account the mitigation measures suggested above and their effectivity in mitigating the impacts.

The significance ratings are given below:

- Zero impact: where the project will have no impact;
- Low is <20: where this impact would not have a direct influence on the decision to develop in the area,
- Medium is 20-40: where the impact could influence the decision to develop in the area unless it is effectively mitigated; and
- High is >40: where the impact must have an influence on the decision process to develop in the area.

Impact Significance	Description of Significance Ratings
Zero	Project will have no impacts.
Low is <20	Impacts have no influence on decision.
Medium is 20 – 40	Impacts could influence decision.
High is >40	Impacts must influence decision.

2.1.1 Impact significance during the clearing phase

Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
		(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
Employment and training of contractors	Socio-economic development through job creation and training opportunities.	Positive	Positive	Positive	Positive	Positive / Cumulative
Land clearing activities	Loss/ change of topsoil layer during the initial stages of vegetation clearance that can lead to erosion through wind and water.	(2+1+3)2	12	(2+1+2)1	5	Indirect
	Construction activities such as the clearing of vegetation could result in the visual disturbance. The transformation of the current indigenous vegetation to crop production is likely to alter the aesthetic quality.	(4+2+4)3	30	(3+2+4)2	18	Direct
	Clearing activities and the movement of vehicles can negatively impact surface water resources if	(3+2+4)2	18	(1+1+4)2	12	Indirect

	the appropriate buffers are not maintained.					
Use of heavy vehicles and machinery	Dust pollution due to dust generated by movement of the construction vehicles and the equipment or machinery	(2+2+2)2	12	(1+1+2)2	8	Direct
	Air pollution due to CO2 emissions from the construction vehicles and the equipment or machinery	(2+2+4)2	16	(1+2+4)2	14	Cumulative
Storage and handling of hazardous substances	Contamination of soil through oil/fuel leaks or spillage from machinery and/or agricultural vehicle and construction vehicles or storage of substances.	(2+1+3)2	12	(2+1+2)2	10	Direct
	Pollution of the groundwater and surface water resources through oil leaks or spillage due to vehicle maintenance, improper storage, and handling and/or storage of hazardous materials /chemicals such as fuel	(3+2+4)2	18	(2+1+4)2	14	Cumulative

Storage of equipment, vehicles, and machinery	Disturbance and compaction of soils due to the parking of vehicles and storage of equipment and machinery outside of designated areas	(3+1+2)2	12	(2+1+2)1	5	Direct
Access to Sanitation facilities	Lack of access to ablution facilities or improper management of ablution facilities can result in pollution of surrounding environment	(4+2+3)2	18	(2+1+3)1	6	Direct
Storage and generation of general and domestic waste	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of general waste	(3+2+4)2	18	(1+1+4)2	12	Direct
	Pollute surface water as well as groundwater and therefore water quality	(2+2+4)2	16	(1+1+4)2	12	Cumulative
	Soil pollution due to the inappropriate storage and disposal of hazardous waste	(3+2+4)2	18	(1+1+4)2	12	Direct
Construction activities on site/s of cultural significance	Loss of sites with significant heritage	(5+2+5)3	36	(4+2+5)1	11	Direct

The disturbance of fauna and habitat destruction due to construction activities	Loss of fauna due to habitat destruction	(4+2+4)3	30	(2+2+4)2	16	Indirect
	The clearing of vegetation, soil ripping, and land preparation will lead to the damage and loss of flora biodiversity and SCC within the proposed development footprint.	(6+3+4)3	39	(4+3+4)2	22	Indirect
Noise levels caused by construction vehicles and machinery	Noise disturbances caused by agricultural and construction activities by the machinery/vehicles used for clearing vegetation and land preparation	(2+1+1)2	8	(1+1+1)2	6	Direct
Uncontrolled activities	Loss of fauna and flora to fatalities as a result of, accidents, opportunistic hunting, baiting, trapping and illegal harvesting.	(4+2+3)3	27	(4+2+3)1	9	Indirect
	Open fires and smoking may cause uncontrollable bush fires.	(6+2+3)2	22	(4+1+3)1	8	Direct

2.1.2 Impact significance during operational phase

Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
		(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
Employment opportunities to the local community	The operational phase will provide job creation, economic growth and rural development	Positive	Positive	Positive	Positive	Positive
Crop cultivation	Contributes to food Security	Positive	Positive	Positive	Positive	Positive
Noise levels by construction vehicles and machinery	As the site would have been established, no major impacts are expected, however due to the phased nature of agricultural activities, there may be little noise during the operational phase when harvesting takes place	(3+2+2)3	21	(2+2+2)2	12	Direct
Use of heavy vehicle and machinery for land preparation and agricultural activities	Disturbance of soils due to the parking of vehicles and storage of equipment and machinery outside of designated areas	(3+1+2)2	12	(1+1+1)1	3	Direct

	The use of fuel powered machines/equipment contributes to the build-up of greenhouse gases in the atmosphere	(3+3+4)2	20	(2+3+4)1	9	Cumulative
	Dust pollution due to dust generated by movement of the construction vehicles and the equipment or machinery	(4+2+2)3	24	(2+2+2)2	12	Cumulative
Storage and handling of hazardous substances	The improper application of fertilizers, pesticides, and/or herbicides, could lead to the loss/alteration of soil quality and structure within the development area.	(3+2+4)2	18	(1+1+4)2	12	Direct
	Contamination of water through oil/fuel leaks or spillage from machinery and/or agricultural vehicle or storage of hydrocarbon substances.	(2+2+4)2	16	(1+1+4)2	12	Cumulative

	Contamination of soil through oil/fuel leaks or spillage from machinery and/or agricultural vehicle and construction vehicles or storage of substances.	(2+1+3)2	12	(2+1+2)2	10	Direct
Agricultural activities on sites of cultural significance	Uncontrolled movement and agricultural activities could lead to the loss of natural or cultural heritage due to not staying within authorized footprint	(5+2+5)3	36	(4+2+5)1	11	Direct
	Ploughing or tillage of the soil could lead to the discovery and destruction of artefactual burial sites	(5+2+5)3	36	(4+2+5)1	11	Direct
Usage of finite natural resource (water) for irrigation.	Poor irrigation methods and systems can result in erosion	(3+2+3)2	14	(3+2+3)1	10	Indirect
	The consumption of excessive water during irrigation of crops will impact on water quality	(3+2+3)2	14	(3+2+3)1	10	Indirect

Transformation of the current indigenous vegetation to crop production	The visual impacts of the agricultural activities will alter the aesthetic quality of the area.	(2+1+1)2	8	(1+1+1)2	6	Direct
Generation and storage of general waste	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of general waste	(3+2+4)2	18	(1+1+4)2	12	Direct
	Pollute surface water as well as groundwater and therefore water quality	(2+2+4)2	16	(1+1+4)2	12	Cumulative
Generation and storage of hazardous waste	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of the hazardous waste	(3+2+4)2	18	(1+1+4)2	12	Direct
	Pollute surface water as well as groundwater and therefore water quality	(2+2+4)2	16	(1+1+4)2	12	Cumulative
	Soil pollution due to the inappropriate	(4+2+4)2	20	(2+1+4)2	14	Direct

	storage and disposal of hazardous waste					
Improper use of pesticides and herbicides	Pollution to surface water as well as groundwater due to runoff from crops.	(2+2+4)2	16	(1+2+4)1	7	Cumulative
	Contamination of soil through spills or improper use and irrigation methods.	(3+1+4)2	16	(2+1+2)2	10	Direct
Uncontrolled activities	During the operational phase, vehicles, crew and materials could increase animal fatalities through opportunistic hunting, collisions, accidents or baiting and trapping.	(4+2+3)3	27	(4+2+3)1	9	Indirect
	The development of bush fires because of smoking or the creation of open fires.	(6+2+3)2	22	(4+1+3)1	8	Direct
	Poor rehabilitation of disturbed areas not used for agricultural purposes may lead to the permanent degradation of ecosystems as well as allow alien vegetation	(4+2+4)3	30	(2+1+2)2	10	Indirect

	species to encroach on indigenous vegetation					

Chapter 7: Conclusion

This chapter contains the main conclusions and recommendations from the EIA Process, provides the key findings of the specialist studies (i.e. outlines the most significant impacts identified, together with the key management actions required to avoid or mitigate the negative impacts or enhance positive benefits), an integrated summary of impacts that will influence decision-making by the Competent Authority (i.e. the DEA) and the associated management actions. In addition, the chapter also includes the EAP's opinion on whether the project should receive EA.

The 2014 NEMA EIA Regulations (as amended on 7 April 2017) define a significant impact as "an impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence".

Based on the findings of the specialist studies the proposed project is considered to have an overall very low to medium negative environmental impact and an overall moderate positive impact (with the implementation of respective mitigation and enhancement measures).

Section 24 of the Constitutional Act states that "everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures, that prevents pollution and ecological degradation; promotes conservation; and secures ecologically sustainable development and use of natural resources while promoting justifiable economic and social development". Based on this, this EIA was undertaken to ensure that these principles are met through the inclusion of appropriate management and mitigation measures and monitoring requirements. These measures will be undertaken to promote conservation by avoiding the sensitive environmental features present on site (as shown in Figure 2) and through appropriate monitoring and management plans included in the EMPr (Part B of the EIA Report).

1 Environmental Impact Statement

The proposed development will provide the local community with job creation and aid in food security which will have positive impacts on the local economy. The activities that will have a negative impact on the environment because of the proposed development, all have mitigation measures in place, which being adhered to, will ensure that the impact of the proposed development will be minimal.

Good communication during the different phases of the project will mitigate issues and concerns that may arise as the project progress. This will ensure good understanding with all parties involved.

2 Recommendations of the EAP

Considering the potential impacts (positive and negative) on the proposed site and the surrounding areas as well as the community, we concluded that the benefits of the project outweigh the negative.

It is recommended that alternative 2 be instituted as it will ensure that the outcome of this project succeeds in meeting the environmental management objectives of protecting the ecologically sensitive areas and supporting sustainable development and the use of natural

resources, whilst promoting justifiable socio-economic development in the towns nearest to the project site.

The findings of this EIA show that all natural resources will be used in a sustainable manner (i.e., this project is a renewable energy project and the majority of the negative site specific and cumulative environmental impacts are considered to be of low significance with mitigation measures implemented), while the benefits from the project will promote justifiable economic and social development.

In order to ensure the effective implementation of the mitigation and management actions, an EMPr has been compiled and is included in Part B of this Draft EIA Report. The mitigation measures necessary to ensure that the project is planned, constructed and operated in an environmentally responsible manner are listed in this EMPr. The EMPr is a dynamic document that should be updated regularly and provide clear and implementable measures for the establishment and operation of the proposed agricultural project.

Part B: EMPr

Contents

Abbreviations

CA	Competent Authority
CBA	Critical Biodiversity Area
CBD	Conservation of Biological Diversity
CITES	Convention on International Trade in Endangered Species
CR	Critically Endangered
DEFF	Department of Environment, Forestry and Fisheries Affairs
DEDECT	Department of Economic Development, Environment, Conservation and Tourism
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme Report
EMS	Environmental Management Services
ERAP	Emergency Response Action Plan
ESA	Ecological Support Area
FPA	Fire Protection Agency
GMR	Government Notice Report
HCS	Hazardous Chemical Substance
IDP	Integrated Development Plan
I&AP	Interested and Affected Parties
ISSV	Initial Site Sensitivity Verification Report
MSDS	Material Safety Data Sheets
NEMA	National Environmental Management Act 1998 (Act Ni170 of 1998)
NT	Near Threatened
NWBSP	North-West Biodiversity Sector Plan
PPE	Personal Protective Equipment
PPP	Public Participation Process
PVC	Polyvinyl Chloride
SABS	South African Bureau of Standards
SAHRA	South African Heritage Resources Agency

SANBI	South African National Biodiversity Institute
SACNSP	South African Council for Natural Scientific Professions
SCC	Species of Conservation Concern
S&EIA	Scoping and Environmental Impact Assessment
UNFCCC	United Nations Framework Convention on Climate Change
V	Vulnerable
WULA	Water Use License Application
ToPs	Threatened or Protected species
UNFCCC	United Nations Framework Convention on Climate Change

Definitions

Buffer:	An area of land designated for environmental protection.
Aspect:	Element of an organisation's activities, products or services that can interact with the environment.
Construction Waste:	Construction waste means waste, excluding hazardous waste, produced during the construction, alteration, repair or demolition of any structure, and includes rubble, earth, rock and wood displaced during that construction, alteration, repair or demolition.
Environment:	Our surroundings, including living and non-living elements, e.g. land, soil, plants, animals, air, water and humans. The environment also refers to our social and economic surroundings, and our effect on our surroundings.
Environmental Impact:	A change to the environment, whether negative of positive, resulting from an organisation's activities, products or services.
General Waste:	General waste means waste, excluding hazardous waste, that emanates from premises that are used wholly or mainly for residential, educational, health care, sport or recreational purposes.
Hazardous Waste:	Hazardous waste means any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste have a detrimental impact on health and the environment.
Impact:	A description of the potential effect or consequence of an aspect of the project on the environment or people surrounding the project area.
Mitigation:	Measures or actions designed to avoid or reduce the negative impacts on the environment.

1 Details of the Environmental Assessment Practitioner

1.1 Details of the Environmental Assessment Practitioner

Table 27: Details of the Environmental Practitioner (EAP)

Business name of EAP:	Ecosphere Environmental Management Services		
Physical Address:	123 Hendrik van Eck Blvd. Vanderbijlpark 1911		
Postal Code:	1900		
Telephone:	N/A	Cell:	061 501 4339
Email:	Christelle@ecosphere.co.za	Fax:	N/A

1.2 Names and Expertise of Representatives of the EAP

Table 28: Details of the Representatives of the EAP

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Christelle Greyling	MSc Environmental Management	SACNASP	9
Annika Cilliers	Honours in B.Sc. Environmental Management		1

2 Scope

2.1 Introduction

Ecosphere Environmental Management Services was appointed by Fresca Farms as independent environmental consultants to compile an Environmental Management Programme Report (EMPr) as part of the required environmental authorization processes as per the applicable legislation.

What is an EMPr?

An EMPr can be defined as an environmental management tool used to reduce or avoid the negative impacts on the project site and to enhance the positive benefits from the project. EMPr's are therefore important tools in managing the impacts that are confined within the project scope, whether in the design, construction, or operational phases of the project.

The EMPr is the document that provides a description of the methods and procedures for mitigating and monitoring impacts. The EMPr also contains environmental objectives and targets which the project developer needs to achieve in order to reduce or eliminate negative impacts. The EMPr document can be used throughout the project life cycle. It is regularly updated to be aligned with the project progress from construction, operation to decommissioning. EMPr's provide a link between the impacts predicted and mitigation measures specified within the Environmental Impact Assessment (EIA) report, and the implementation and operational activities of the project. EMPr's outline the environmental impacts, the mitigation measures, roles and responsibilities of mitigation.

The development and implementation of a successful EMPr has benefits beyond merely meeting legal obligations. It contributes to environmental awareness of the workforce. It can facilitate the prevention of environmental degradation and minimise impacts when they are unavoidable. It can make a positive impact towards climate change. Given the current focus on the assessment stage of EIA, EMPr's add value to decision-making by demonstrating commitment to implementation of mitigation actions. The EMPr facilitates progress towards environmental targets and provides a tool for continual improvement of a company's environmental performance.

The objectives of an EMPr are to:

- Ensure compliance with regulatory authority stipulations and guidelines.
- Ensure compliance with relevant legislation.
- Identify the possible environmental impacts of the proposed activity.
- Identify a range of mitigation measures (minimise, mitigate, manage) which could reduce and mitigate the potential impacts to minimal or insignificant levels.
- Identify measures that could optimize beneficial impacts.

The EMPr focuses on the following:

- Avoiding potential negative impacts.
- Mitigation of negative impacts to a minimal or insignificant level.
- Minimising the negative impacts on the environment.
- Monitoring and management of the impacts on the environmental as a result of the development.

This EMPr is compiled using the following principles to strive towards a more sustainable and effective development:

1. **Continuous improvement:**
   The EMPr must be continually reviewed and improved upon, to enhance the environmental management.
2. **Wide level of commitment:**
   For the EMPr to be successful and effective, commitment from all management levels as well as the workforce is required.
3. **Responsive and flexible:**
   The EMPr is a "living" document, which has to respond to problems and incidents during the project lifespan. Therefore, regular review and revision of the EMPr is required.
4. **Integration across operations:**
   The integration of the different operations (safety, health and environmental departments) within the EMPr should be done to ensure that environmental management is seen as a single domain.
5. **Legislation:**
   It is important that management personnel be aware that certain activities during the construction phase will require further licensing or environmental approval. The ECO must therefore be consulted on a regular basis during this phase.

2.2 Project Description

Ecosphere EMS was appointed by Fresca Farms to conduct an Environmental Impact Assessment Application for the transformation of land for agricultural crop production. The area within which the project falls formed part of a game farm years ago but has during subsequent years not been utilised as such. The area consists of small shrubs, scattered trees and a variety of grasses. The proposed project entails the transformation of indigenous vegetation for crop production. Fresca Farms intend to transform a few areas located across 5 different farms portions (Table 27).

Table 29: Property details of the fam portions relevant to the proposed project

Farm Name	Farm No	Portion	Latitude (S)	Longitude (E)	SG codes
Hartebeestpoort C	419	1090	25°30'14.4S	27°49'8.19E	T0JQ00000000041901090
Hartebeestpoort C	419	1091	25°30'19.64S	27°48'48.23E	T0JQ00000000041901091
Blaauwbank	241	4	25°29'51.51S	27°48'57.47E	T0JQ00000000024100004
Blaauwbank	241	39	25°29'13.69S	27°49'7.44E	T0JQ00000000024100039
Blaauwbank	241	40	25°29'13.69S	27°49'7.44E	T0JQ00000000024100040

The approximate extent of the area of indigenous vegetation that will be transformed per farm portion are as follows:

Table 30: Proposed extent of project area per farm portion.

Farm Portion	Project extent (ha)
Portion 1090 of Farm 419 Hartebeestpoort C	58.2
Portion 1091, of Farm 419 Hartebeestpoort C	
Portion 4, of Farm 241 Blaauwbank	30.39

Portion 39 of Farm 241 Blaauwbank	57.97
Portion 40 of Farm 241 Blaauwbank	

The project area is situated 9.7 km North of Brits and approximately 0.4 km southwest of Lethlabile in the North West Province (Figure 14). The project area falls under the Madibeng Local Municipality. The proposed development is consistent with the activities within the larger surrounding environment. The immediate area surrounding the proposed development site consist of a natural bushveld and a game farm as well as Lethabile informal settlement.

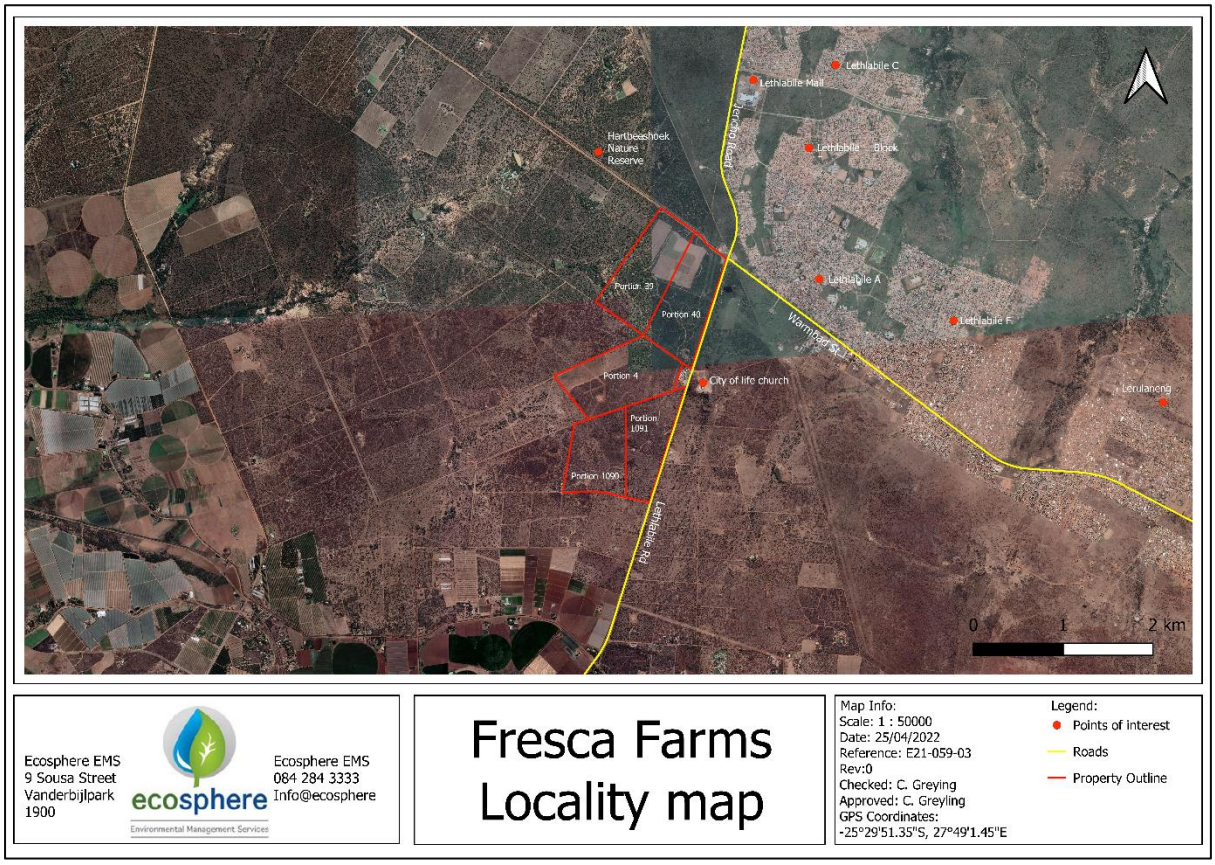


Figure 14: Location of the proposed development

It is important to note that a S24G process is currently underway for sites that were cleared from indigenous vegetation by Fresca Farms within the proposed project area before obtaining environmental authorisation. At the time Fresca Farms were not aware that they required authorisation and appointed Ecosphere Environmental services as soon as they came to the realisation.

Table 31: Areas included in the S24G application

Farm Portion	**S24G development area (ha)**
Portion 1090 of Farm 419 Hartebeestpoort C	N/A
Portion 1091, of Farm 419 Hartebeestpoort C	
Portion 4, of Farm 241 Blaauwbank	19.81
Portion 39 of Farm 241 Blaauwbank	32.13
Portion 40 of Farm 241 Blaauwbank	

Thus, after the S24G application has been approved and Environmental Authorisation has been obtained the total transformed area will be 198.5 ha. The extent of the proposed development can be seen in Figure 15.

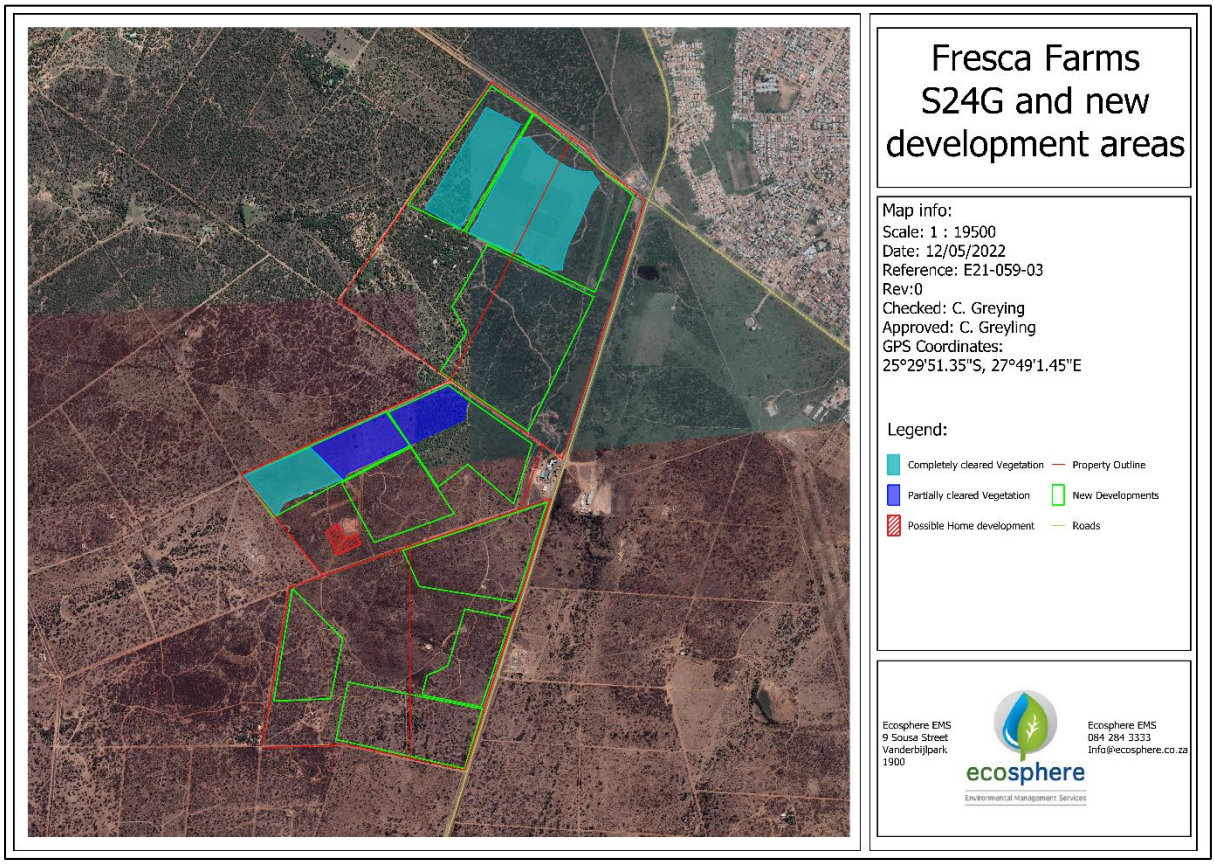


Figure 15: The extent of the proposed development footprint.

3 Applicable Legislation

The following main pieces of legislation were considered to compile the scoping report and conduct the EIA process

Title of legislation, policy, or guideline	Description of applicable document	Administering authority	Date	Relevance to the Proposed Project
Legislation				
The Constitution of the Republic of South Africa (Act No. 108 of 1996)	Everyone has the right to an environment that is not harmful to their health or well-being.	Constitutional court	1996	This EIA is conducted to align with the requirement of the Bill of Rights.
National Environmental Management Act (Act No. 107 of 1998)	Serves as the framework for all environmental legislation in South Africa.	Department of Environmental Affairs	1998	The proposed project will result in the removal of indigenous vegetation and therefore have an environmental impact.
Environmental Impact Assessment Regulations (GN R. 983 of 2014)	Regulates the procedure and criteria as defined in NEMA.	Department of Environmental Affairs	2014	The activity of removing indigenous vegetation will trigger an activity under listing notice 2 and listing notice 3.
The National Water Act (Act No. 36 of 1998)	Forms the basis for the management of South Africa's water resources.	Department of Water Affairs and Sanitation	1998	There are surface water resources in and around the property where the proposed development will take place.
National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Management and conservation of the indigenous biological diversity and the sustainable use of biological resources in South Africa.	Department of Environmental Affairs	2004	Certain species and ecosystems may be impacted on by the removal of indigenous vegetation for the proposed transformation of land for crop production.
Alien and Invasive Species Regulations	This Act aims to eradicate the spread and growth of Alien and Invasive Species	Department of Environmental Affairs	2014	The disturbance caused by the proposed development could favour the spread and establishment of alien and invasive species.
National Environmental Management: Protected Areas Act (Act No. 57 of 2003)	Manage and conserve South Africa's biodiversity (protected areas) within the framework of national legislation.	Department of Environmental Affairs	2003	To consider the proposed development footprint in relation to legislated protected areas.
The Conservation of Agricultural Resources Act (CARA)(Act No. 43 of 1983)	Promote the conservation of soil, water use as well as vegetation and provides requirements for the control of alien and invasive species.	Department of Environmental Affairs	1983	The proposed project is to align itself with CARA to ensure that the applicant's agricultural practices are sustainable when it comes to the use of water, soil and vegetation. Alien and invasive species that may occur within the proposed project area must be managed according to CARA.

National Heritage Resources Act (Act No. 25 of 1999)	Conservation and management of national heritage resources (archaeological and historically significant).	Department of Environmental Affairs	1999	A Heritage Impact Assessment is required for the proposed development, as the proposed development will according to section 38 subsection 1(a) the Heritage Resources Act change the character of the entire site if the development exceed 5000m^2(0.5ha) in extent. A Heritage Impact Assessment was conducted and found that there were areas with heritage importance within the farm portions where the proposed development will take place.
National Heritage Regulations (GN R 548 of 2000)	Provides regulations with regards the provisioning of permits	South African Heritage Resource Agency (SAHRA)	2000	A Heritage Impact Assessment was conducted and found that there were areas with heritage importance within the farm portions where the proposed development will take place. If the development cannot implement thee required buffers from these sites, the applicant will have to apply for the appropriate permits to allow the destruction of the sites.
National Environmental Management: Waste Act (Act No. 59 of 2008)	Regulates waste management activities in South Africa, with primary aim of preventing pollution and ecological degradation.	Department of Environmental Affairs	2008	Waste will be generated as part of the proposed project. Waste such as general, organic, and hazardous waste will have to be handled, stored and disposed of in accordance with the legislative requirements.
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	Regulates air quality in order to protect the environment by providing reasonable measures for the prevention and ecological degradation for securing ecologically sustainable development.	Department of Environmental Affairs	2004	The act was considered as the clearing of vegetation that form part of the proposed development may result in dust emissions and therefore impact air quality.
Noise Control Regulations, 1992 (GN R.154)	Governs the way by which noise should be regulated to prevent noise that can cause harm or act as a nuisance.	Madibeng Local Municipality	1992	The act was considered as the proposed development will result in some noise when the area is being cleared of vegetation.

National Forest Act (Act No. 84 of 1998)	Natural forests and woodlands form an important part of the environment and need to be conserved and developed according to the principles of sustainable management. The act protects forests and specific tree species.	Department of Agriculture, Forestry and Fisheries	1998	Two permits for tree removal have already been obtained: • Licence/Permit for the disposal of indigenous trees (Licence no. 03-06-21/23) • Licence/Permit for the disposal of protected trees (Licence no. 02-06-21/23)
National Veld and Forest Fire Act (Act No. 101 of 1998)	The purpose of this Act is to prevent and combat veld, forest and mountain fires throughout South Africa.	Department of Environmental Affairs	1998	The proposed project entails that an area of indigenous vegetation will be transformed to agricultural land for crop production. Firebreaks will be required to ensure that when a fire occurs it doesn't jump from the applicable properties to a neighbouring property. Necessary precautions should be included in the EMPr in case of a fire and the prevention thereof.

3.1 Listed activities

The proposed project triggers the following listed activities which will require that an Environmental Impact Assessment (EIA) process is undertaken in accordance with the EIA regulations, 2014 (promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as amended in April 2017.The triggered activities are listed in Table 30.

Table 32: Applicable listed activities

Government Notice	Activity No	Description of listed activity	Comments
Listing Notice 2, GNR984 as amended	15	The clearance of an area of 20 hectares or more of indigenous vegetation.	The Applicant plans to clear over 20ha of vegetation. The applicant intends to transform this area into crop agriculture. An EIA application form must be completed to obtain authorisation for this activity.
Listing Notice 3	12 h (iv)	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. (h) North-West. (iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.	The Applicant plans to clear over 20ha of vegetation. The applicant intends to transform this area into a crop agriculture. The property falls within a terrestrial CBA.

4 Identified Sensitive Areas

During the Scoping and EIA phase various sensitive features were identified through desktop studies, specialist reports and field verification (Figure 16). It is important to make note of these features as they may require special management and buffer implementation.

Terrestrial Assessment:

The terrestrial impact assessment identified the following sensitive areas within and around the proposed development area that should not be disturbed (Figure 16):

- Sites identified as a rocky outcrop

Heritage Impact Assessment:

Identified 14 heritage sites (Figure 16). If a 30m buffer from these sites cannot be maintained and application must be lodged for a destruction permit.

Aquatic Ecology Assessment:

Identified a NFEPA perennial river and riparian zone and various artificial dams. A minimum buffer zone strip of at least 32 meters wide is recommended for rivers as per NEMA.

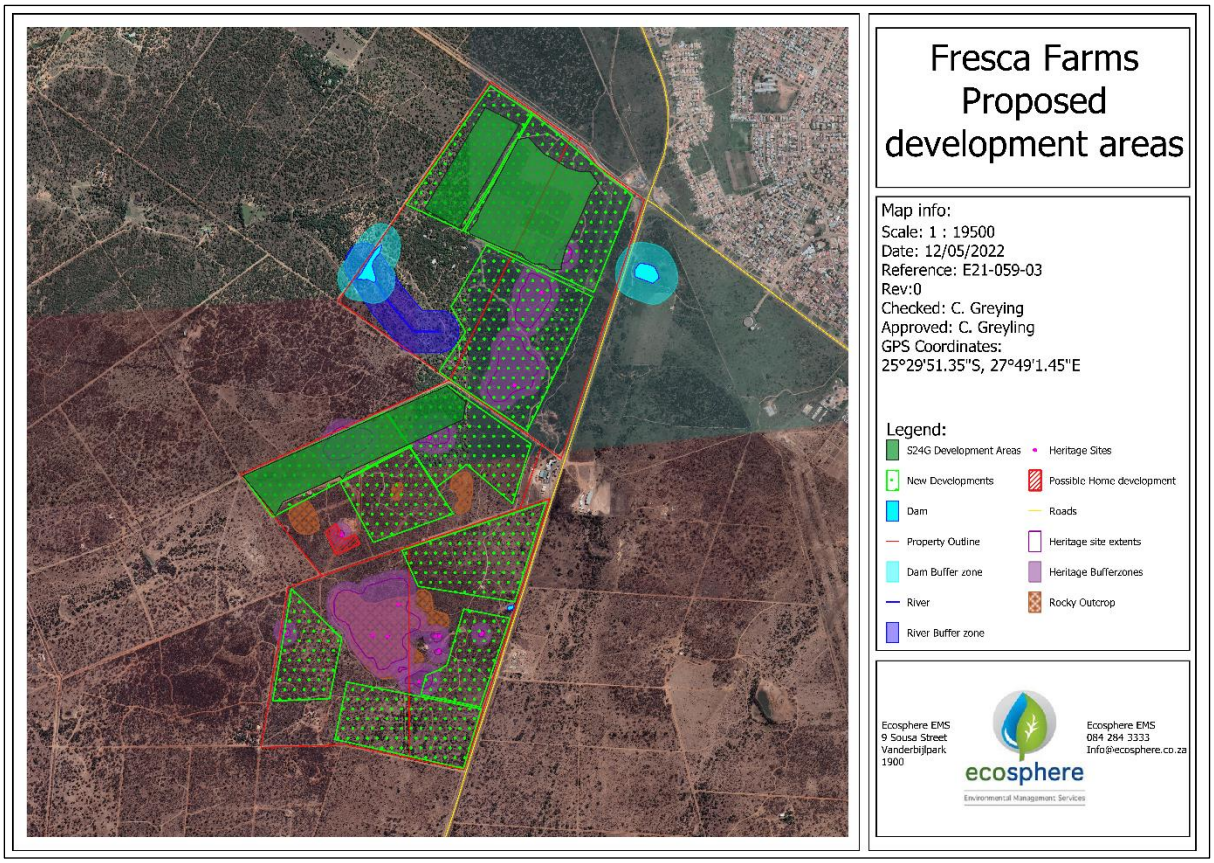


Figure 16: The proposed project area and identified sensitive areas.

5 Project Phases

The proposed development will mainly take place in three phases:

Planning and design phase: Refers to the phase where the extent, boundaries and thresholds of the project are established to ensure that all future activities and operations will take place in accordance with the environmental authorisation and national environmental legislation.

Clearing phase: Refers to the phase where the indigenous vegetation that fall within the proposed development footprint will be cleared from the area so that the area can be transformed to agricultural land.

Operational phase: Refers to the day-to-day farming operations of Fresca Farms after the proposed area has been transformed.

6 Aspects of the Activity

The following holds reference to the aspects identified in the proposed development.

- Aspects that have positive impacts include:
    - Socio-economic: Job creation and food security for the surrounding community
    - Environmental Awareness training: Decreased negative environmental impacts are expected if an environmental representative is appointed, all onsite staff are aware/understand the individual responsibilities in terms of the EMPr through training and the development footprint as well as sensitive areas are properly identified and demarcated.

- Aspects that have negative impacts include:
    - Socio-Economic, Soil Quality, Air Quality, Terrestrial Ecology, Water Quality, Waste Management, Hazardous substances management, Heritage, Noise Pollution, Aesthetics, Fire management, Sanitation facilities.

Details regarding the aspects as identified are provided below:

6.1 Socio Economic

Socio-economic aspect considers the combination of social and economic factors and how it will impact on the environment, which includes the natural vegetation and animals, as well as the people within the environment.

The socio-economic aspect should have a positive impact during the land clearing and operational phases with the creation of potential jobs and training opportunities if proper plans are developed to ensure that individuals, contractors, and companies from the local community is used as far as possible. If entities from the local community can be favoured for the skilled and unskilled opportunities created by the proposed development, it will have positive impact on the growth of the local economy.

The social-economic aspect will also positively impact the following:

- Food security: The establishment of the farm would have a positive impact on food security in the region.
- Employment: The creation of work and training opportunities for the local workforce.
- Rural development: Will have a positive impact on the livelihoods of people in the surrounding communities.
- Poverty reduction: Employment opportunities and the creation of jobs by the establishment of the farm would alleviate poverty.
- Economic growth: Economic growth would be brought to the area by the establishment of the farm.

6.2 Soil Quality

Soil quality refers to the state of the soil within the project area, whether it is pollution from other external sources or erosion impacting affecting the state of the soil. Erosion refers to the deterioration of the surface of the ground, whether it is caused through water, wind, human or other factors. Soil quality will potentially be negatively affected during the land clearing and operation phase.

There is a significant risk of soil contamination during the clearing and operational phases as large vehicles and machines used in the agricultural industry often leaks and causes spills. All vehicles and machinery are to be serviced on an impermeable surface by a suitable qualified professional to ensure that they are in a good working condition. Drip trays should also be place under vehicles and machinery when not operational.

During the operational phase there will also be risks posed by the storage and handling of pesticides and herbicides. It is therefore recommended that all hazardous substances be stored in an enclosed area and on an impermeable surface. Fresca Farms should also maintain their global gap certification and ensure that pesticides and herbicides are not over-used.

The clearance of vegetation can also lead to increased erosion on site. It is therefore recommended that the minimum amount of vegetation is cleared and that cleared areas are left barren for a short a time as possible. Should any erosion be noticed on site, it should be reported to the ECO and a plan to address the issue should be compiled within a week.

6.3 Air Quality

Air quality refers to the state of the air within the project area. Good air quality is essential not only to people, but also to animals, vegetation, water and soil. Air quality will potentially be negatively affected during the clearing phase and operational phase.

Dust will be generated by the movement of construction and agricultural vehicles as well as machinery and equipment during clearing activities as well as land preparation and harvesting activities. Fresca Farms should ensure that the amount of dust created by the project is monitored and ensure that environmentally friendly dust suppression techniques are used when needed.

A complaints register should be developed to ensure that the complaints of interested and affected parties can be monitored and addressed. Although the impact should be low the implementation of these mitigation measures should reduce the amount of dust created and CO_2 emitted because of the project.

6.4 Terrestrial Ecology: Fauna and Flora.

Fauna refers to all wildlife and flora refers to all vegetation associated with the project area and their interaction with one another. During the clearing and operational phase terrestrial ecology can be impacted on by various activities

The clearance of vegetation can result in the loss of certain flora populations and the loss of habitat and thereby the loss of certain faunal and floral populations. To ensure that the impact of the clearing phase is minimal it will be necessary to clearly establish and demarcate the development footprint before the clearing activities begin. Sensitive areas should also be clearly indicated to avoid clearance in sensitive areas, such as the rocky outcrops and marula trees, these areas should remain undisturbed

The movement of vehicles, equipment and machinery during the clearing and operational phase should as far as possible be restricted to existing roads and disturbed areas with implemented speed limits. Areas that have unnecessarily been disturbed by vehicles, equipment and machinery should be barricaded and rehabilitated.

Training should also be provided to contractors and all staff with regards to the way in which animals should be treated when encountered in and around the development footprint. Animals should be given a chance to move away from the area where work will take place.

6.5 Water Quality

Water quality refers to the state of the water within the project area. This includes the surface water and ground water disturbances which refers to changes in water quality as well as quantity. Water quality may potentially be negatively affected during the clearing and operational phase.

Before the clearing activities start it is important the surface water features in and around the area of the development footprint is identified and to ensure that the required buffers from

these features are known. The ecosystems that form part of surface water features are generally regarded as sensitive and therefore disturbance of this system should be avoided as far as possible. To mitigate the disturbance to aquatic ecosystems a 100m buffer from the identified drainage line should maintained to ensure the vegetation clearance and the movement of vehicles, machinery and equipment should have minimal impact on the surface water features and riparian vegetation.

During the operational phase there will also be risks posed by the storage and handling of pesticides and herbicides. It is therefore recommended that all hazardous substances be stored in an enclosed area and on an impermeable surface. Fresca Farms should also maintain their global gap certification and ensure that pesticides and herbicides are not over-used.

6.6 Waste and Hazardous Substances

Waste management refers to the management of domestic, construction and hazardous waste which forms part of the project. The environment will potentially be negatively affected by waste during the Construction phase.

General waste must be confined to bins which should be provided. Maximum domestic waste storage period will be 10 days. Littering and burning of waste is prohibited. The Contractor must ensure that all waste generated on site during construction phase must be adequately managed, construction waste must be confined to a demarcated area and removed to a registered landfill.

A hazardous substance refers to any substance that contains hazardous properties, this includes flammability, explosiveness, toxicity and the ability to oxidize. The Contractor must use non-toxic alternatives where possible, store hazardous substances in suitable containers, provide Material Safety Data Sheets for all hazardous substances.

Hazardous waste must be separated from general waste and stored separately in clearly marked containers and be disposed of at a licenced hazardous waste disposal facility or recycled at a certified recycling facility. Thus, minimising the proposed development impacts on the environment and its surrounds.

6.7 Heritage and Palaeontology

Archaeology, Cultural Heritage and Palaeontology (heritage) refers to all aspects that would give indication of possible heritage associated on the project site, which includes graves, artefacts, archaeological, cultural and paleontological findings within the project areas. Heritage could be negatively affected during clearing and operational phases of this project.

The contractors and farm manager is to ensure to implement a chance to find procedures in case possible heritage finds are uncovered. Ensure that all staff are trained on the protocol. Workers must be alerted to the possibility of uncovering fossils, archaeological materials (e.g., stone artefacts, pottery) or graves and instructed to stop work, protect any finds and report them to the heritage authorities. No artefacts may be removed, destroyed, or interfered with. They may require inspection by an archaeologist and any graves that are found on site should be fenced off and access must be allowed for visitation/ or alternatively it may be negotiated to relocate the graves. Such heritage as mentioned above is the property of the state and may require excavation and curation in an approved institution.

There are known sites of heritage importance within and around the proposed development footprint. Therefore, all the known heritage sites (identified by the Heritage Impact Assessment) should be clearly indicated on a map and clearly visible through demarcation or by barricading the areas in the field. All sites that require a buffer should clearly demarcated and indicated on maps as no go areas.

It has been established that Fresca Farms will have to apply for destruction permits if the buffers cannot be maintained from the identified sites.

6.8 Noise

The proposed development has the potential to negatively impact the environment through increased noise to the environment from Construction phase.

The Contractor must make use of silencing technology where possible and restrict the use of sound amplification equipment. Construction should also take place during regular work hours to minimise the impact of construction noise on the community.

Therefore, reducing the proposed developments noise impacts.

6.9 Visual

Visual aesthetics can be impacted on during both the clearing and operational phase. During the clearing and operational phase visual aesthetics can be impacted on by various activities and the following preliminary mitigation measures should be applied:

- The clearance of vegetation and agricultural activities must be restricted to the demarcated development footprint.
- Any areas outside of the proposed development area that have become should be rehabilitated as soon as possible.
- A row of indigenous trees has been planted at the west boundary of portion 4 and further application of this mitigation measure can be implemented at the rest of the impacted areas if required.

6.10 Fire

The environment could potentially be negatively affected by fire during the clearing and operational phase of the proposed project if the proper mitigation measures aren't implemented.

- Open fires: On-site fires as well as any form of burning on-site should be prohibited. The Contractor is to educate staff about veld fires and their potential fuel sources.
- Smoking: Employees should only be allowed to smoke in designated areas.

A fire management plan and an emergency procedure should be developed. Firefighting equipment must be available in all vehicles located on site and firebreaks should be maintained.

The implementation of these mitigation measures will reduce the potential of the proposed development to cause fires.

6.11 Climate Change

Climate change can be impacted on during both the clearing and operational phase. Natural vegetation plays an important role in climate regulation as it is able to absorb CO_2. However,

during the clearing phase natural vegetation within the development footprint will be removed and therefore contribute to the cumulative impact on climate change.

During the clearing and operational phase fuel powered vehicles, machinery and equipment will be used that will contribute to climate change through their CO_2 emissions. In order to reduce these emissions, it is important that all staff and contractors use the vehicles and instruments in a efficient way which also means that they should not be left to idle when not in use.

7 Roles and Responsibilities

Roles	Responsibilities
Developer (Fresca Farms Management)	• The developer remains ultimately responsible for ensuring that the development is implemented according to the requirements of the EMPr. Although the developer appoints specific role players to perform functions on his/her behalf, this responsibility is delegated. The developer is responsible for ensuring that sufficient resources (time, financial, human, equipment, etc.) are available to the other role players (e.g. the environmental representative and contractor) to efficiently perform their tasks in terms of the EMPr. • The developer is liable for restoring the environment in the event of negligence leading to damage to the environment. • The developer must ensure that the EMPr is included in the tender documentation so that the contractor who is appointed is bound to the conditions of the EMPr. • The developer must train and appoint an environmental representative that will oversee all the environmental aspects relating to the development during the clearing and operational phase.
Contractor	• The contractor, as the developer's agent on site, is bound to the EMPr conditions through the contract with the developer and is responsible for ensuring adherence to all the conditions of the EMPr. • The contractor must thoroughly familiarise with the EMPr requirements before coming onto site and must request clarification on any aspect of the document that is unclear. • The contractor must provide sufficient budget for complying with all EMPr conditions at the tender stage. • The contractor must comply with all orders (whether verbal or written) given by the environmental representative and farm manager in terms of the EMPr.
Environmental Representative	• The environmental is appointed by the developer as to monitor the implementation of the EMPr. He/she must form part of the project team and is involved in all aspects of project planning that can influence environmental conditions on the site. • The environmental representative must attend relevant project meetings, conduct inspections to assess compliance with the EMPr and be responsible for providing feedback on potential environmental problems associated with the development. • In addition, the environmental representative is responsible for: • Liaison with relevant authorities.

	• Liaison with contractors and developer regarding environmental management; and undertaking routine monitoring and appointing a competent person/institution to be responsible for specialist monitoring, if necessary. • The environmental representative has the right to enter the site and undertake monitoring and auditing at any time, subject to compliance with health and safety requirements applicable to the site. • The environmental representative will monitor compliance monthly and will produce the monthly monitoring report to the developer • The environmental representative will workshop the Contractor and the Community Liaison Officer (CLO) on construction compliance activities before construction.

8 Environmental Management Awareness Training Programme

Environmental Awareness Training is a beneficial tool as it informs employees on the expected environmental standard and helps the applicant to ensure that its activities are inline with national environmental legislation as well as the condition set out by the environmental authorisation and mitigation measures of the approved EMPr. Therefore, environmental awareness training plays an important role in ensuring environmental compliance.

It has been suggested that Fresca Farms should appoint or nominate an employee that can act as an environmental representative for the duration of the project. The environmental representative should already be appointed or nominated during the planning phase to ensure that the representative understands the scope of the project, is aware of the sensitive areas and has time to familiarise themselves with the EMPr and Environmental Authorisation.

It is also important that the standards set out by the environmental authorisation and EMPr is incorporated in the contracts of the appointed contractors and to ensure that environmental awareness training in line with the EA and EMPr will be provided to their employees.

Environmental awareness training should also be provided to the Fresca Farm employees.

Environmental management training should focus on:

- Identification of the environmentally sensitive features, staying within the development footprint and maintaining the buffer requirements
- Fire management
- Spill management
- Waste management (housekeeping)
- Logging and addressing incidents in the complaints register
- Effective and efficient use of machinery, equipment, and vehicles
- Interactions with fauna and flora and unpermitted activities
- Handling of Hazardous Substances

Monitoring and reporting

Monitoring

Monitoring and inspection should be conducted throughout, but this section will concentrate more on inspection and monitoring during the clearing phase of the proposed project. Ongoing visual inspections should be conducted monthly by the environmental representative and

developer. The developer and the environmental representative should be on the lookout for any unsafe acts and activities that transgress the requirements as specified in the EMPr. Non-compliance with the specifications of the EMPr or Environmental authorisation constitutes a breach and corrective measures must be identified and implemented as soon as possible.

Audits

Measures should be put in place to ensure that Fresca Farms can adhere to the audit requirements set out by the acquired environmental authorisation**.**

Incident Reporting and Remedy

If a leakage or spillage of hazardous substances occurs as a result of activities of ECO or other users, the local emergency services will be immediately notified of the incident. The following information must be provided:

- The location.
- The nature of the load;
- The status at the site of the accident itself (i.e., whether further leakage is still taking place, whether the vehicle or the load is on fire, etc.)

8.1 Emergency Preparedness

The environmental emergency procedures ensure that there will be an appropriate response to unexpected or accidental actions or incidents that will cause environmental impacts, throughout the life cycle of the project. Such incidents may include:

- Accidental discharges to water and land;
- Accidental exposure of employees to hazardous substances;
- Accidental fires;
- Accidental spillage of hazardous substances;

The emergency preparedness plan:

- Construction employees shall be adequately trained in terms of incidents and emergency situations.
- An emergency preparedness plan must include details of the organization (manpower) and responsibilities, accountability and liability of personnel.
- The emergency preparedness plan must include a list of key personnel.
- Details of emergency services (e.g. the fire department, spill cleanup services, etc.) must be listed.
- Internal and external communication plans, including prescribed reporting procedures must be listed.
- Actions that should be taken in the event of different types of emergencies shouldl be included.
- Incident recording, progress reporting, and remediation measures to be implemented should be included.
- Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release should be listed.
- Training plans, testing exercises, and schedules for effectiveness shall be included.

The ECO must comply with the emergency preparedness, and incident and accident-reporting requirements, as required by the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), the National Environmental Management Act, 1998 (Act No. 107 of 1998), the National Water Act, 1998 (Act No. 36 of 1998) and the National Veld and Forest Fire Act, 1998 (Act No 101 of 1998) as amended, and/or any other relevant legislation.

Spillages:

- In the event of a spillage during the construction phase, the responsibility for spill treatment shall lie with the Developer and they will be liable to arrange for competent assistance to clear the affected area.
- The ECO must compile and maintain environmental emergency procedures, to ensure that there will be an appropriate rapid response to unexpected or accidental environment-related incidents throughout the life cycle of the project.
- The individual responsible for, or who discovers a hazardous waste spill must report the incident to the ECO.

The ECO must assess the situation in consultation with the Developer and Project Manager and act as required. In all cases, the immediate response must be to contain the spill. The exact treatment of polluted soil/water must be determined by the ECO in consultation with the Project Manager.

Fires:

- The adjacent landowners must be informed and/or involved in case of any fire;
- It must be ensured that the basic firefighting equipment is supplied to all living quarters, site offices, kitchen areas, workshop areas and stores.
- Welding, gas cutting or cutting of metal must only be allowed inside the working/demarcated areas and with appropriate firefighting equipment at hand.

9 Environmental Management Plan

- **Structure & Content of Table:**
  - **Environmental Aspects/Aspects of the activities:** This column indicates the element of an organisation's activities, products or services that can interact with the environment.
  - **Impact:** This column will identify the issue being addressed, e.g., materials, site demarcation, heritage sites, etc.
  - **Mitigation Measures:** This column will include all the necessary mitigation measures for each potential impact.

9.1 Potential Impacts due to the clearing phase

Aspects of the activities	Impact	Mitigation Measures	Responsibility
Land clearing activities	Loss/ change of topsoil layer during the initial stages of vegetation clearance that can lead to erosion through wind and water.	• Vegetation clearance must be kept to the proposed development site only. • Limit the removal of topsoil to at the area within the development footprint • Topsoil should not be contaminated with anything that may impair its ability to support plants. • Excess topsoil should be separated and stored appropriately and then reworked into the levelled areas before planting of crops. • If any topsoil is stored, the topsoil stockpiles may not exceed a height of 2m at the highest point and should not be stored on steep slopes or near watercourses. • Stockpiles should be kept free of weeds. • Clearance of vegetation and levelling of land should commence during periods when the wind intensity is low and rainfall events are seldom and rare. • When levelling of the field takes place, berms around the proposed crop production area need to be constructed as to prevent runoff from rainfall from carrying the topsoil away.	Developer, Contractor, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
	Construction activities such as the clearing of vegetation could result in the visual disturbance. The transformation of the current indigenous vegetation to crop production is likely to alter the aesthetic quality.	• The clearance of vegetation must be restricted to the demarcated development footprint. • Any disturbed areas outside demarcated areas should be rehabilitated as soon as possible. • A row of indigenous trees has been planted at the west boundary of portion 4 and further application of this mitigation measure can be implemented at the rest of the impacted areas if required.	Developer, Contractor, and environmental representative
	Clearing activities and the movement of vehicles can negatively impact surface water resources if the appropriate buffers are not maintained.	• Ensure that all contractors and employees are aware of the buffers that are required from the surface water features. • Ensure that all the employees and contractor are aware of the location of the surface water features. • Don't allow any type of vehicles or equipment and machinery to move within the buffer of the surface water feature or the surface water feature itself.	Developer, Contractor, and environmental representative
Use of heavy vehicles and machinery	Dust pollution due to dust generated by movement of the construction vehicles and the equipment or machinery	• Ensure construction vehicles and equipment is operational only when required and are not left to run if not in use. • Construction vehicles should adhere to the recommended speed limit of 30 km per hour. • Monitor the amount of dust created from the activities and use dust suppression such as spraying water when necessary. • Complaints that emanate from dust issues should be noted in the complaints register and addressed immediately.	Developer and environmental representative
	Air pollution due to CO2 emissions from the construction vehicles and the equipment or machinery	• Ensure that equipment, machinery as well as construction and agricultural vehicles are used effectively. • Ensure that equipment, machinery as well as construction and agricultural vehicles are not left to idle • Ensure agricultural vehicles and equipment is well maintained and regularly serviced to ensure efficient use.	Developer and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
		• Use machines/equipment that are fuel efficient or manual equipment where possible. • Ensure that personnel are trained to use equipment efficiently.	
Storage and handling of hazardous substances	Contamination of soil through oil/fuel leaks or spillage from machinery and/or agricultural vehicle and construction vehicles or storage of substances.	• Ensure that vehicles, machinery, and equipment are inspected and maintained in a good working condition. • Any stationary vehicles, machinery and equipment that are being stored or need repairs must be parked and repaired in a designated area. • Drip tray should be placed under vehicles that stand for more than 24 hours. • There should be provision of proper re-fuelling and maintenance facilities and procedures which will reduce the likelihood of soil contamination. • A register must be kept of all the hazardous materials. • Hazardous substances should be stored in a designated area .and should be stored in sealed, lockable containers when not in use. • All storage areas that contain hazardous substances must be covered and bunded with an approved impermeable liner or have some form of secondary containment. • Good housekeeping practices should be implemented on site. • Spill kits should be kept on site along with an incident register and spills should also be attended to immediately. • When managing hazardous materials, manufacturer's specifications must be complied with. The Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available.	Contractor, and environmental representative
	Pollution of the groundwater and surface water resources through oil leaks or spillage due to vehicle maintenance, improper storage, and handling and/or storage of hazardous materials /chemicals such as fuel		Contractor, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
		• Any soil or area that is contaminated must be cleaned immediately by removing the soil and disposing of the hazardous waste in the correct manner by an approved contractor that will deliver the waste to an appropriate and registered waste site. • When applying or handling hazardous substances a 100m buffer should be implemented from the dam embankments to avoid surface water contamination.	
Storage of equipment, vehicles, and machinery	Disturbance and compaction of soils due to the parking of vehicles and storage of equipment and machinery outside of designated areas	• No parking of vehicles outside of the designated area should be allowed. • No storage of equipment will be allowed outside of the designated area. • Where possible make use of existing access routes and paths. • Exposed and/or cleared areas must be stabilized using the appropriate vegetation to prevent soil erosion and the loss of valuable topsoil.	Developer and environmental representative
Access to Sanitation facilities	Lack of access to ablution facilities or improper management of ablution facilities can result in pollution of surrounding environment	• Ensure that sufficient ablution facilities are available on site. • No indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances. Where mobile portable toilets are required, the following must be ensured: • Toilets are located no closer than 100m to any watercourse or water body. • Toilets are secured to the ground to prevent them from toppling due to wind or any other cause. • No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the best practice principle.	Developer, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
		• Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out. • Toilets are emptied before long weekends and workers holidays and must be locked after working hours. • The contents of the ablution facilities should be disposed of at a licenced disposal facility. • Toilets should be serviced regularly, and the environmental representative must inspect toilets to ensure compliance to health standards.	
Storage and generation of general and domestic waste	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of general waste Pollute surface water as well as groundwater and therefore water quality Soil pollution due to the inappropriate storage and disposal of hazardous waste	• Littering must not occur on site. • If litter is present in the surrounding environment, ensure that it collected and disposed of in the provided bins. • Provide staff with training with regards to responsible waste management • General waste must be confined to bins which must be strategically placed around the site • Bins should be vermin proof • General waste must be stored separately from hazardous waste. • General waste must be stored appropriately and preferably be removed to a registered landfill site on a weekly basis to prevent rodents and pests from entering the site. • Waste must not be buried or burned on site. • Waste bins should not be placed near a surface water resource. • Motivate recycling were possible	Contractor, and environmental representative
Storage and generation of hazardous waste	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of the hazardous waste	• Hazardous waste should be limited to designated bins or areas and be kept separate from general waste	Contractor, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
	Pollute surface water as well as groundwater and therefore water quality Soil pollution due to the inappropriate storage and disposal of hazardous waste	• A register must be kept of all the hazardous materials. • All hazardous waste must be stored in sealed and suitably marked containers for removal to a registered hazardous waste disposal facility. • Storage areas shall be monitored for spills and any spills shall be contained, cleaned, and rehabilitated immediately. • When managing hazardous materials, manufacturer's specifications must be complied with. the Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available.	
Construction activities on site/s of cultural significance	Loss of sites with significant heritage	• Ensure that all the known heritage sites (identified by the Heritage Impact Assessment) are clearly indicated on a map and clearly visible through demarcation or by barricading the areas in the field. • Implement a chance to find procedures in case possible heritage finds are uncovered. • Work should immediately cease if there is a chance discovery, and a heritage specialist should be consulted before work can proceed. • No artefacts may be removed, destroyed, or interfered with. • Any graves that are found on site should be fenced off and access must be allowed for visitation/ or alternatively it may be negotiated to relocate the graves. • Incorporate the mitigation measures provided by the Heritage Impact Assessment • Markers placed to determine the 30 meter buffer where no bush clearing can be done. • In the event that this site cannot be avoided the following process should be followed a permit under s35 of the NHRA	Developer, Contractor, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
		must be obtained and an application for destruction will then need to be submitted to SAHRA by the developer.	
The disturbance of fauna and habitat destruction due to construction activities	Loss of fauna due to habitat destruction.	• During the clearing of vegetation and land preparation most vertebrae will move away from the site, during this activity, slow moving reptiles and smaller mammals should be allowed to move away unharmed or be assisted to relocate to uncleared areas. • Ensure movement corridors for wildlife to freely move about without any further disruptions • Staff should receive training on proper management and response should animals be encountered on site. • Animals must not be injured or killed where possible. • Demarcate the development footprint clearly to prevent ta larger area of the habitat from being impacted on. • Care should be taken to avoid clearance in sensitive areas, such as the rocky outcrops, these areas should remain undisturbed. Activities that form part of the proposed development should be restricted to the demarcated development footprint.	Contractor, and environmental representative
	The clearing of vegetation, soil ripping, and land preparation will lead to the damage and loss of flora biodiversity and SCC within the proposed development footprint.	• A site walk should take place before the development commences to ensure that the sensitive and no-go areas are pointed out. • Ensure that protected Marula trees have been marked and that they will not be cleared. • If any SCC are identified the translocated to the nearest appropriate habitat, preferably a protected/ undisturbed portion of the property. • If the removal of protected plants is required a destruction permit should first be obtained.	Contractor, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
		• If the protected plant is not removed, it is important that they are visible and that it is indicated that they are not to be removed. • Employees must be prohibited from harvesting SCC plants. • Only indigenous species should be used for rehabilitation purposes which must aim to revegetate exposed soil.	
Noise levels caused by construction vehicles and machinery	Noise disturbances caused by agricultural and construction activities by the machinery/vehicles used for clearing vegetation and land preparation	• All the relevant municipal by-laws relating to noise control should be adhered to. • All construction vehicles and equipment must be kept in good working order to reduce noise pollution. • Construction activities should be kept strict and acceptable working hours. • A "complaints register," consisting of all public complaints and actions in response to these complaints, must be maintained during the construction phase	Developer, Contractor, and environmental representative
Uncontrolled activities	Loss of fauna and flora to fatalities as a result of, accidents, opportunistic hunting, baiting, trapping and illegal harvesting.	• Train all staff on site regarding the proper management and response should animals be encountered. • No trapping, hunting, or baiting and removing of faunal species from the site. • Poaching of fauna and illegal harvesting of flora should not be allowed. • Fresca Farm's rules regarding poaching and illegal harvesting should be made clear through training provided to the staff. • Vehicle's speed should be reduced to 30 kilometres per hour to reduce collisions and/or accidents.	Developer, contractor, and environmental representative
	Open fires and smoking may cause uncontrollable bush fires.	• Employees must be prohibited from making open fires, except in designated controlled areas. • Develop and implement a fire management plan. • Suitable firefighting equipment should be available on site.	Developer, Contractor, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
		• Employees should only be allowed to smoke in designated areas. • Ensure that an emergency procedure is in place.	

9.2 Potential impacts due to operational phase

Aspects of the activities	Impact	Mitigation Measures	Responsibility
Employment opportunities to the local community	The operational phase will provide job creation, economic growth, and rural development	• None	Developer, and environmental representative
Crop cultivation	Contributes to food Security	• None	Developer
Noise levels by construction vehicles and machinery	As the site would have been established, no major impacts are expected, however due to the phased nature of agricultural activities, there may be little noise during the operational phase when harvesting takes place	• All the relevant municipal by-laws relating to noise control should be adhered to. • All construction vehicles and equipment must be kept in good working order to reduce noise pollution. • All agricultural activities should be kept to strict and acceptable working hours. • A "complaints register," consisting of all public complaints and actions in response to these complaints, must be maintained during the construction phase	Developer, and environmental representative
Use of heavy vehicle and machinery for land preparation and agricultural activities	Disturbance of soils due to the parking of vehicles and storage of equipment and machinery outside of designated areas	• No parking of vehicles and no storage of equipment outside of the designated area should be allowed. • Make use of existing access routes and paths • Exposed and/or cleared areas must be stablished using the appropriate vegetation to prevent soil erosion and the loss of valuable topsoil.	Developer, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
	The use of fuel powered machines/equipment contributes to the build-up of greenhouse gases in the atmosphere	• Use machines/equipment that are fuel efficient or manual equipment where necessary • Ensure that personnel are trained to use equipment efficiently. • Ensure that equipment, machinery as well as construction and agricultural vehicles are not left to idle • Ensure that equipment, machinery and agricultural vehicles are well maintained and regularly serviced.	Developer, and environmental representative
	Dust pollution due to dust generated by movement of the construction vehicles and the equipment or machinery	• Construction vehicles should adhere to the recommended speed limit of 30 km per hour. • Monitor the amount of dust created from the activities and use dust suppression such as spraying water when necessary. • Complaints that emanate from dust issues should be noted in the complaints register and addressed immediately.	Developer, and environmental representative
Storage and handling of hazardous substances	The improper application of fertilizers, pesticides, and/or herbicides, could lead to the loss/alteration of soil quality and structure within the development area.	• The quality and health status of surrounding soils should be monitored throughout the operational phase. • Ensure that pesticides and herbicides are applied, handled, stored and disposed of according to their specific label and MSDS. Crops should not be irrigated right after application. • The application of fertilizers,' pesticides, and/or herbicides to cultivated areas must be carefully managed. • The staff that will be working with the fertilisers, pesticides and herbicides must be trained to do so.	Developer, and environmental representative
	Contamination of water through oil/fuel leaks or spillage from machinery and/or agricultural vehicle or storage of hydrocarbon substances.	• Staff should be trained to store and handle hazardous substances responsibly. • Staff should be trained on the dangers of the hazardous substances that they will be using. • Good housekeeping should be implemented onsite. • Spill kits should be available and replaced as needed.	Developer, and environmental representative
	Contamination of soil through oil/fuel leaks or spillage from machinery and/or agricultural vehicle and construction vehicles or storage of substances.		Developer, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
		• Spills should be cleaned immediately and be noted in a register. • All spills (minor and major) must be cleaned and remediated to the satisfaction of the environmental representative within 24 hours of occurrence. • When managing hazardous materials, manufacturer's specifications must be complied with. The Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available. • Provide staff with training on how to handle a spill. • Ensure that spills are reported to the environmental representative. • Hazardous substances should be stored according to best practice standards. • Routine inspections should be done to ensure that the hazardous substances are being used effectively. • Hazardous substances should be stored in a designated secure location and where necessary a bund must be provided. • Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act (Act No. 85 of 1993) and the SABS Code of Practice must be adhered to throughout the clearing phase. • Any stationary vehicles, machinery and equipment that are being stored or need repairs must be parked and repaired in a designated area. • Drip tray should be placed under vehicles that stand for more than 24 hours.	
Agricultural activities on sites of cultural significance	Uncontrolled movement and agricultural activities could lead to the loss of natural or cultural heritage due to not staying within authorized footprint	• Ensure that all the known heritage sites (identified by the Heritage Impact Assessment) are clearly indicated on a	Developer, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
	Ploughing or tillage of the soil could lead to the discovery and destruction of artefactual burial sites	map and clearly visible through demarcation or by barricading the areas in the field. • Implement a chance to find procedures in case possible heritage finds are uncovered. • Work should immediately cease if there is a chance discovery, and a heritage specialist should be consulted before work can proceed. • No artefacts may be removed, destroyed, or interfered with. • Any graves that are found on site should be fenced off and access must be allowed for visitation/ or alternatively it may be negotiated to relocate the graves. • Incorporate the mitigation measures provided by the Heritage Impact Assessment • Markers placed to determine the 30 meter buffer where no bush clearing can be done. • In the event that this site cannot be avoided the following process should be followed a permit under s35 of the NHRA must be obtained and an application for destruction will then need to be submitted to SAHRA by the developer.	Developer, and environmental representative
Usage of finite natural resource (water) for irrigation.	Poor irrigation methods and systems can result in erosion	• Irrigation methods and systems should be implemented to deliver the exact water requirements. • Irrigation methods must ensure minimal runoff. • Crops should not be irrigated right after the application of pesticides or herbicides. Ensure that pesticides and herbicides are applied according to their specific label and MSDS. • The site should be monitored regularly for signs of erosion. Remedial action must be taken at the first signs of erosion.	Developer, and environmental representative
	The consumption of excessive water during irrigation of crops will impact on water quality	• Implement the use of creative and sustainable irrigation methods to ensure conservation of water.	Developer, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
		• Where possible try to farm with drought tolerant crops • Provide staff with training with regards to responsible water use practices.	
Generation and storage of general waste	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of general waste	• If litter is present in the surrounding environment, ensure that it collected and disposed of in the provided bins. • General waste must be confined to bins which must be strategically placed around the site • Bins should be vermin proof • General waste must be stored separately from hazardous waste. • General waste must be stored appropriately and preferably be removed to a registered landfill site on a weekly basis to prevent rodents and pests from entering the site. • Waste must not be buried or burned on site. • Waste bins should not be placed near a surface water resource. • Motivate recycling were possible	Developer, and environmental representative
	Pollute surface water as well as groundwater and therefore water quality		Developer, and environmental representative
Generation and storage of hazardous waste	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of the hazardous waste	• Hazardous waste should be limited to designated bins or areas and be kept separate from general waste • A register must be kept of all the hazardous materials. • All hazardous waste must be stored in sealed and suitably marked containers for removal to a registered hazardous waste disposal facility. • Storage areas shall be monitored for spills and any spills shall be contained, cleaned, and rehabilitated immediately. • When managing hazardous materials, manufacturer's specifications must be complied with. the Material Safety Data Sheet (MSDS) for all hazardous materials kept on site must be available.	Developer, and environmental representative
	Pollute surface water as well as groundwater and therefore water quality		Developer, and environmental representative
	Soil pollution due to the inappropriate storage and disposal of hazardous waste		Developer, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
Improper use of pesticides and herbicides	Pollution to surface water as well as groundwater due to runoff from crops.	• Ensure agricultural vehicles and equipment is operational only when required and not unnecessarily run when not in use. • Ensure that the appropriate amount of fertilizers, pesticides and herbicides are applied. • Make use of environmentally friendly pesticides and fertilizers • When applying or handling fertilizers, pesticides and herbicides a 100m buffer should be implemented from the dam embankments to avoid surface water contamination.	Developer, and environmental representative
	Contamination of soil through spills or improper use and irrigation methods.		Developer, and environmental representative
Uncontrolled activities	During the operational phase, vehicles, crew and materials could increase animal fatalities through opportunistic hunting, collisions, accidents or baiting and trapping.	• During the harvesting land preparation activities most vertebrae will move away from the site, slow moving reptiles and smaller mammals should be allowed to move away unharmed or be assisted to relocate to uncleared areas. • Ensure movement corridors for wildlife to freely move about without any further disruptions • Train all staff on site regarding the proper management and response should animals be encountered. • Implement specified road speed limits (30 kilometres per hour) and provide training to staff. • No trapping, hunting, or baiting and removing of faunal species from the site. • Animals must not be injured or killed where possible. • Bird houses can also be built around the site which will encourage birdlife to occupy them and keep the pest numbers low. • Ensure that all farming operations are limited to the existing development footprint.	Developer, and environmental representative
	The development of bush fires because of smoking or the creation of open fires.	• Employees must be prohibited from making open fires, except in designated controlled areas.	Developer, and environmental representative

Aspects of the activities	Impact	Mitigation Measures	Responsibility
		• Suitably firefighting equipment should be available on site. • Ensure that employees only smoke in designated areas • Maintain fire breaks as well as access roads. • Have an emergency procedure in place.	
	Poor rehabilitation of disturbed areas not used for agricultural purposes may lead to the permanent degradation of ecosystems as well as allow alien vegetation species to encroach on indigenous vegetation	• An Alien Vegetation Management Plan must be implemented to prevent the establishment and prevent the spread of undesirable alien plant species during the Operational Phase. • Regular monitoring and removal of all alien vegetation are required as well as inspection in and around the crop area to prevent the Alien Invasive Species from spreading to the surrounding indigenous area	Developer, and environmental representative