The Agricultural Compliance Statement for the proposed Su Casa Burial Estate on Farm Doornrug 302 JS Portion 10

Emalahleni, Mpumalanga

February 2022

Client

Prepared by:

The Biodiversity Company

Cell: +27 81 319 1225

Fax: +27 86 527 1965

info@thebiodiversitycompany.com

www.thebiodiversitycompany.com

Report Name	**The Agricultural Compliance Statement for the proposed Su Casa Burial Estate on Farm Doornrug 302 JS Portion 10**
Submitted to	EAGLESAGE
Report Reviewer	**Andrew Husted**  Andrew Husted is Pr Sci Nat registered (400213/11) in the following fields of practice: Ecological Science, Environmental Science and Aquatic Science. Andrew is an Aquatic, Wetland and Biodiversity Specialist with more than 12 years' experience in the environmental consulting field.
Report Writer and Fieldwork	**Michael Douglas**  Michael Douglas is a soil scientist with experience in soil classification. Michael completed his BSc Honours in environmental science and geological science at the North-West University of Potchefstroom. Michael has been part of various agricultural potential, land capability and pedology studies as part of Environmental Impact Assessments and Basic Assessments.
Declaration	The Biodiversity Company and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, 2017. We have no conflicting interests in the undertaking of this activity and have no interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science.

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Document Guide

According to the Government Notice 320 dated 20 March 2020 and the procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for environmental authorisation, the following criteria is applicable to that of an agricultural compliance statement;

Requirement	Reference
Specialist Details and CV	Appendix A
Locality of the proposed activity	Section 2
Sensitivity verification	Section 5.2
Acceptability of impacts towards agricultural production capability associated with proposed activities	Section 6
Declaration of specialist(s)	Page vi
Project components with 50 m regulated area superimposed to that of the agricultural sensitivities of the screening tool	Section 5.2
Confirmation from specialist that mitigation to avoid fragmentation has been considered	Section 6
Statement from specialist regarding the acceptability and approval of proposed activities	Section 6
Conditions to acceptability of proposed activities	
Probability of land being returned to current state after decommissioning	N/A
Monitoring requirements and/or any inclusions into EMPr	N/A
Assumptions and uncertainties	Section 3.4

DECLARATION

I, **Michael Douglas** declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.

Michael Douglas

Soil Specialist

The Biodiversity Company

February 2022

1 Introduction

The Biodiversity Company was appointed to compile an agricultural compliance statement for the proposed Su Casa Burial Estate on Farm Doornrug 302 JS Portion 10. The site assessment was conducted on 27th January 2022. The proposed activities entail but are not limited to:

- Su Casa Burial site;
- Chapel;
- Dining hall;
- Ablution facilities;
- Admin offices;
- Cross landmark;
- Fencing;
- Landscaping;
- Ash scattering garden;
- Upgrade of the existing borehole;
- Establishment of a new borehole;
- Establishment of two ponds; and
- Wall of remembrance and upgrade of the existing road.

The approach adopted for the assessments has taken cognisance of the recently published Government Notice 320 in terms of NEMA dated 20 March 2020: “Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation”.

This report aims to present and discuss the findings from the soil resources expected within the 50 m regulated area as well as the potential impacts associated with the proposed activities.

1.1 Scope of Work

According to the National Web based Environmental Screening Tool, the proposed development is located within “Low” to “Medium” sensitivities. The protocols for minimum requirements (DEA, 2020) stipulates that in the event that a proposed development is located within “Low” or “Medium” sensitivities, an agricultural compliance statement will be sufficient. It is worth noting that according to these protocols, a site inspection will still need to be conducted to determine the accuracy of these sensitivities. After acquiring baseline information pertaining to soil resources within the 50 m regulated areas, it is the specialist’s opinion that the soil forms and associated land capabilities concur with the sensitivities stated

by the screening tool. Therefore, only an agricultural compliance statement will be compiled. This includes:

- The feasibility of the proposed activities;
- Confirmation about the “Low” and “Medium” sensitivities;
- The effects that the proposed activities will have on agricultural production in the area;
- A map superimposing the proposed footprint areas, a 50 m regulated area as well as the sensitivities pertaining to the screening tool;
- Confirmation that no agricultural segregation will take place and that all options have been considered to avoid segregation;
- The specialist’s opinion regarding the approval of the proposed activities; and
- Any potential mitigation measures described by the specialist to be included in the EMPr.

1.2 Expertise of the Specialists

1.2.1 Andrew Husted

Mr. Andrew Husted is an aquatic ecologist, specializing in freshwater systems and wetlands, who graduated with a MSc in Zoology. Andrew is Pr Sci Nat registered (400213/11) in the following fields of practice: Ecological Science, Environmental Science and Aquatic Science.

1.2.2 Michael Douglas

Michael Douglas is a soil scientist with experience in soil classification. Michael completed his BSc Honours in environmental science and geological science at the North-West University of Potchefstroom. Michael has been part of various agricultural potential, land capability and pedology studies as part of Environmental Impact Assessments and Basic Assessments.

2 Project Area

The project area is located on a farm site that covers approximately 26 ha in Emalahleni municipality in the Mpumalanga Province. The project area is approximately 2 km South of the N4 and about 17 km West of the town Emalahleni. The area surrounding the project area consists predominantly of agricultural fields and mining operations to the east of the project area. The project area is shown in Figure 2-1 with the project locality depicted in Figure 2-2.

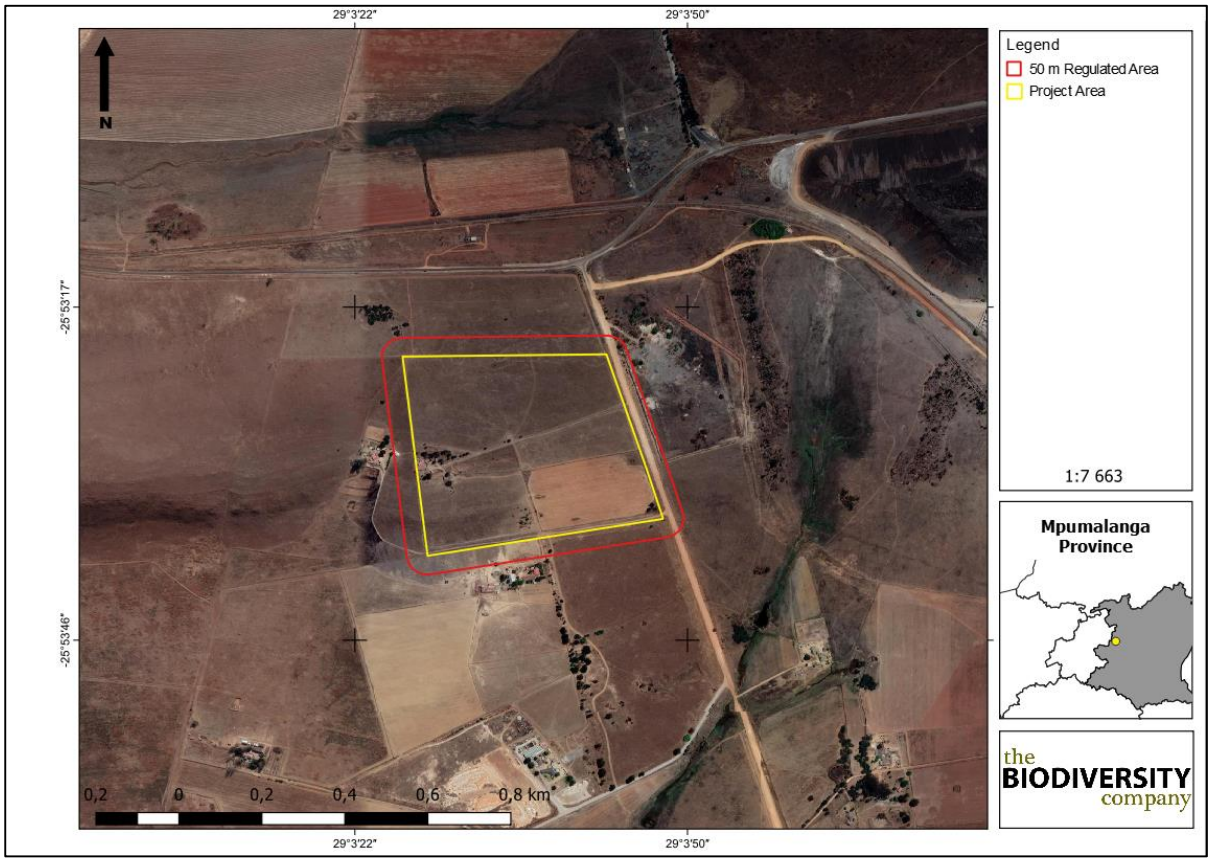

Figure 2-1 Project area map

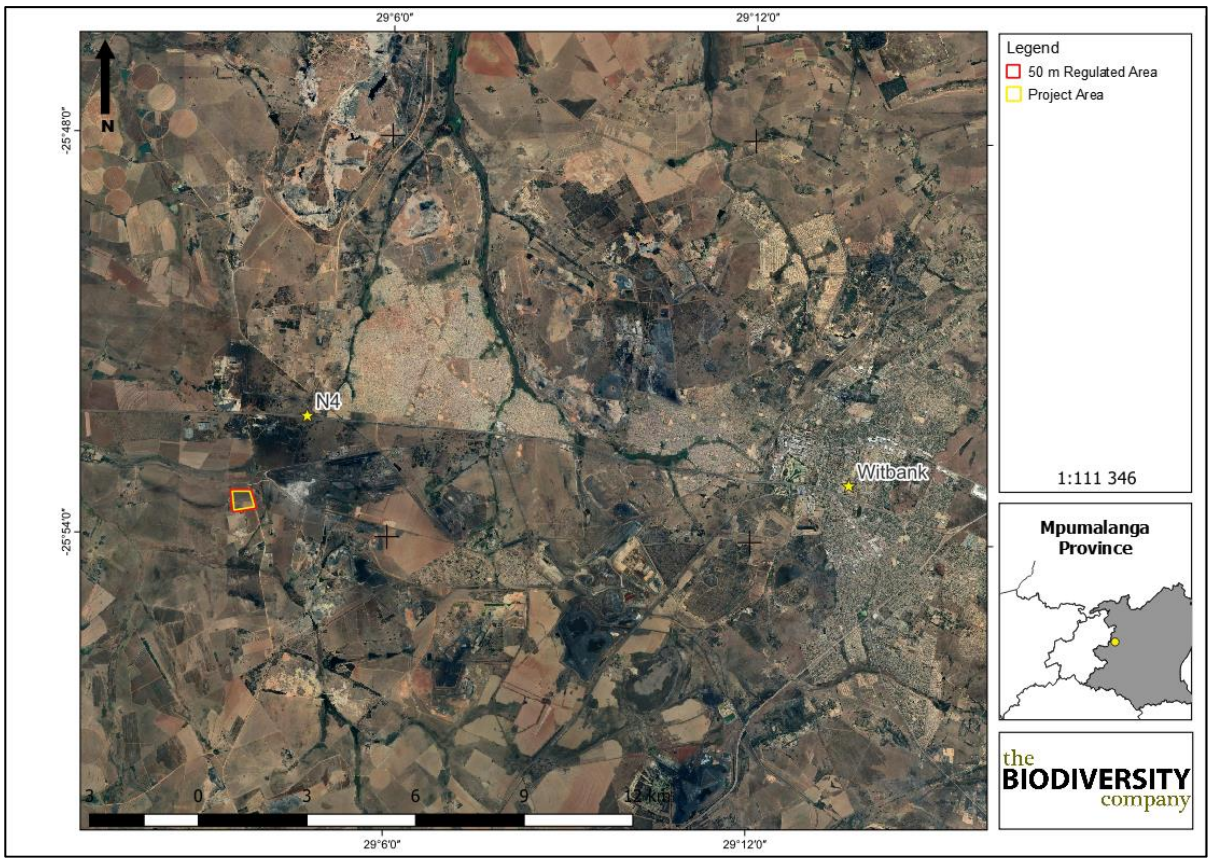

Figure 2-2 Project area locality

3 Methodology

3.1 Desktop Assessment

As part of the desktop assessment, baseline soil information was obtained using published South African Land Type Data. Land type data for the site was obtained from the Institute for Soil Climate and Water (ISCW) of the Agricultural Research Council (ARC) (Land Type Survey Staff, 1972 - 2006). The land type data is presented at a scale of 1:250 000 and comprises of the division of land into land types. In addition, a Digital Elevation Model (DEM) as well as the slope percentage of the area was calculated by means of the NASA Shuttle Radar Topography Mission Global 1 arc second digital elevation data by means of QGIS and SAGA software.

3.2 Climate Capability

According to Smith (2006), climatic capability is determined by taking into consideration various steps pertaining to the temperature, rainfall and Class A-pan of a region. The first step in this methodology is to determine the Mean Annual Precipitation (MAP) to Class A-pan ratio.

Table 3-1 Climatic capability (step 1) (Smith, 2006)

Climatic Capability Class	Limitation Rating	Description	MAP: Class A-pan Class
C1	None to Slight	Local climate is favourable for good yields for a wide range of adapted crops throughout the year.	0.75-1.00
C2	Slight	Local climate is favourable for a wide range of adapted crops and a year-round growing season. Moisture stress and lower temperature increase risk and decrease yields relative to C1.	0.50-0.75
C3	Slight to Moderate	Slightly restricted growing season due to the occurrence of low temperatures and frost. Good yield potential for a moderate range of adapted crops.	0.47-0.50
C4	Moderate	Moderately restricted growing season due to the occurrence of low temperatures and severe frost. Good yield potential for a moderate range of adapted crops but planting date options more limited than C3.	0.44-0.47
C5	Moderate to Severe	Moderately restricted growing season due to low temperatures, frost and/or moisture stress. Suitable crops at risk of some yield loss.	0.41-0.44
C6	Severe	Moderately restricted growing season due to low temperatures, frost and/or moisture stress. Limited suitable crops that frequently experience yield loss.	0.38-0.41
C7	Severe to Very Severe	Severely restricted choice of crops due to heat and moisture stress.	0.34-0.38
C8	Very Severe	Very severely restricted choice of crops due to heat and moisture stress. Suitable crops at high risk of yield loss.	0.30-0.34

In the event that the MAP: Class A-pan ratio is calculated to fall within the C7 or C8 class, no further steps are required, and the climatic capability can therefore be determined to be C7 or C8. In cases where the above-mentioned ratio falls within C1-C6, steps 2 to 3 will be required to further refine the climatic capability.

Step 2

Mean September temperatures;

- <10℃ = C6;
- 10 - 11℃ = C5;
- 11 - 12℃ = C4;

- 12 - 13℃ = C3; and
- >13℃ = C1.

Step 3

Mean June temperatures;

- <9℃ = C5;
- 9 - 10℃ = C4;
- 10 - 11℃ = C3; and
- 11 - 12℃ = C2.

3.3 Land Capability

Given the nature of the compliance statement and the fact that baseline findings correlate with the screening tool's sensitivities, land capability was solely determined by means of the National Land Capability Evaluation Raster Data Layer (DAFF, 2017). Land capability and land potential will also briefly be calculated to match to that of the screening tool to ultimately determine the accuracy of the land capability sensitivity from (DAFF, 2017).

Land capability and agricultural potential will briefly be determined by a combination of soil, terrain and climate features. Land capability is defined by the most intensive long-term sustainable use of land under rain-fed conditions. At the same time an indication is given about the permanent limitations associated with the different land use classes.

Land capability is divided into eight classes and these may be divided into three capability groups. Table 3-2 shows how the land classes and groups are arranged in order of decreasing capability and ranges of use. The risk of use increases from class I to class VIII (Smith, 2006).

Table 3-2 Land capability class and intensity of use (Smith, 2006)

Land Capability Class	Increased Intensity of Use									Land Capability Groups
I	W	F	LG	MG	IG	LC	MC	IC	VIC	Arable Land
II	W	F	LG	MG	IG	LC	MC	IC		
III	W	F	LG	MG	IG	LC	MC			
IV	W	F	LG	MG	IG	LC				
V	W	F	LG	MG						Grazing Land
VI	W	F	LG	MG						
VII	W	F	LG							
VIII	W									Wildlife
W - Wildlife		MG - Moderate Grazing			MC - Moderate Cultivation					
F- Forestry		IG - Intensive Grazing			IC - Intensive Cultivation					
LG - Light Grazing		LC - Light Cultivation			VIC - Very Intensive Cultivation					

The land potential classes are determined by combining the land capability results and the climate capability of a region as shown in Table 3-3. The final land potential results are then described in Table 3-4.

Table 3-3 The combination table for land potential classification

Land capability class	Climate capability class							
	C1	C2	C3	C4	C5	C6	C7	C8
I	L1	L1	L2	L2	L3	L3	L4	L4
II	L1	L2	L2	L3	L3	L4	L4	L5
III	L2	L2	L3	L3	L4	L4	L5	L6
IV	L2	L3	L3	L4	L4	L5	L5	L6
V	Vlei	Vlei	Vlei	Vlei	Vlei	Vlei	Vlei	Vlei
VI	L4	L4	L5	L5	L5	L6	L6	L7
VII	L5	L5	L6	L6	L7	L7	L7	L8
VIII	L6	L6	L7	L7	L8	L8	L8	L8

Table 3-4 The Land Potential Classes.

Land potential	Description of land potential class
L1	Very high potential: No limitations. Appropriate contour protection must be implemented and inspected.
L2	High potential: Very infrequent and/or minor limitations due to soil, slope, temperatures or rainfall. Appropriate contour protection must be implemented and inspected.
L3	Good potential: Infrequent and/or moderate limitations due to soil, slope, temperatures or rainfall. Appropriate contour protection must be implemented and inspected.
L4	Moderate potential: Moderately regular and/or severe to moderate limitations due to soil, slope, temperatures or rainfall. Appropriate permission is required before ploughing virgin land.
L5	Restricted potential: Regular and/or severe to moderate limitations due to soil, slope, temperatures or rainfall.
L6	Very restricted potential: Regular and/or severe limitations due to soil, slope, temperatures or rainfall. Non-arable
L7	Low potential: Severe limitations due to soil, slope, temperatures or rainfall. Non-arable
L8	Very low potential: Very severe limitations due to soil, slope, temperatures or rainfall. Non-arable

3.4 Limitations

The following limitations are relevant to this agricultural potential assessment;

- The handheld GPS used potentially could have inaccuracies up to 5 m. Any and all delineations therefore could be inaccurate within 5 m.

4 Project Area

4.1 Climate

The project area is characterised by summer rainfall with very dry winters. According to Mucina & Rutherford (2006), the mean annual precipitation (MAP) is about 570 to 730 mm. There is frost frequent in winter and more common in the western areas than in the eastern (see Figure 4-1).

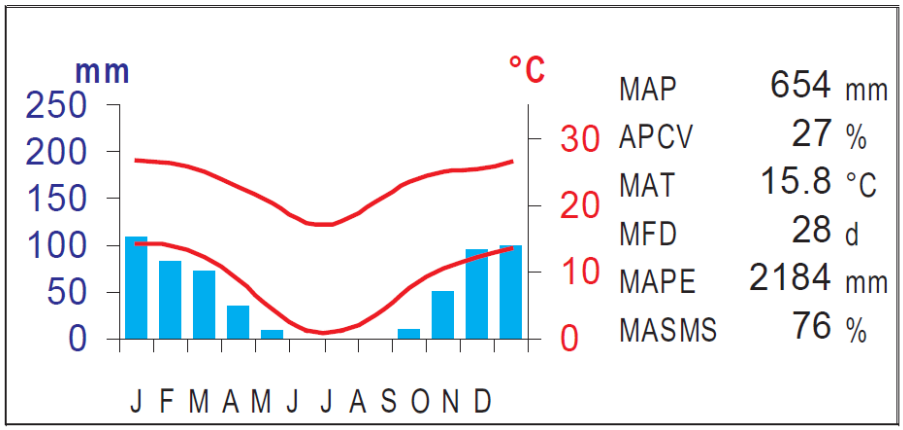

Figure 4-1 Climate diagram for the region (Mucina & Rutherford, 2006).

4.2 Soils and Geology

According to the land type database (Land Type Survey Staff, 1972 - 2006), the project area is characterised by the Ba5 land type as well as the Bb16 land type which is illustrated in Figure 4-2. The Ba and Bb land types consists of duplex and margalitic soils which tend to be dystrophic or mesotrophic. The subsoils consists of widespread red soils and according to Mucina & Rutherford (2006), Glenrosa as well as Mispah soil forms tend to dominate these areas. These soil forms are predominantly formed on rocky ridges.

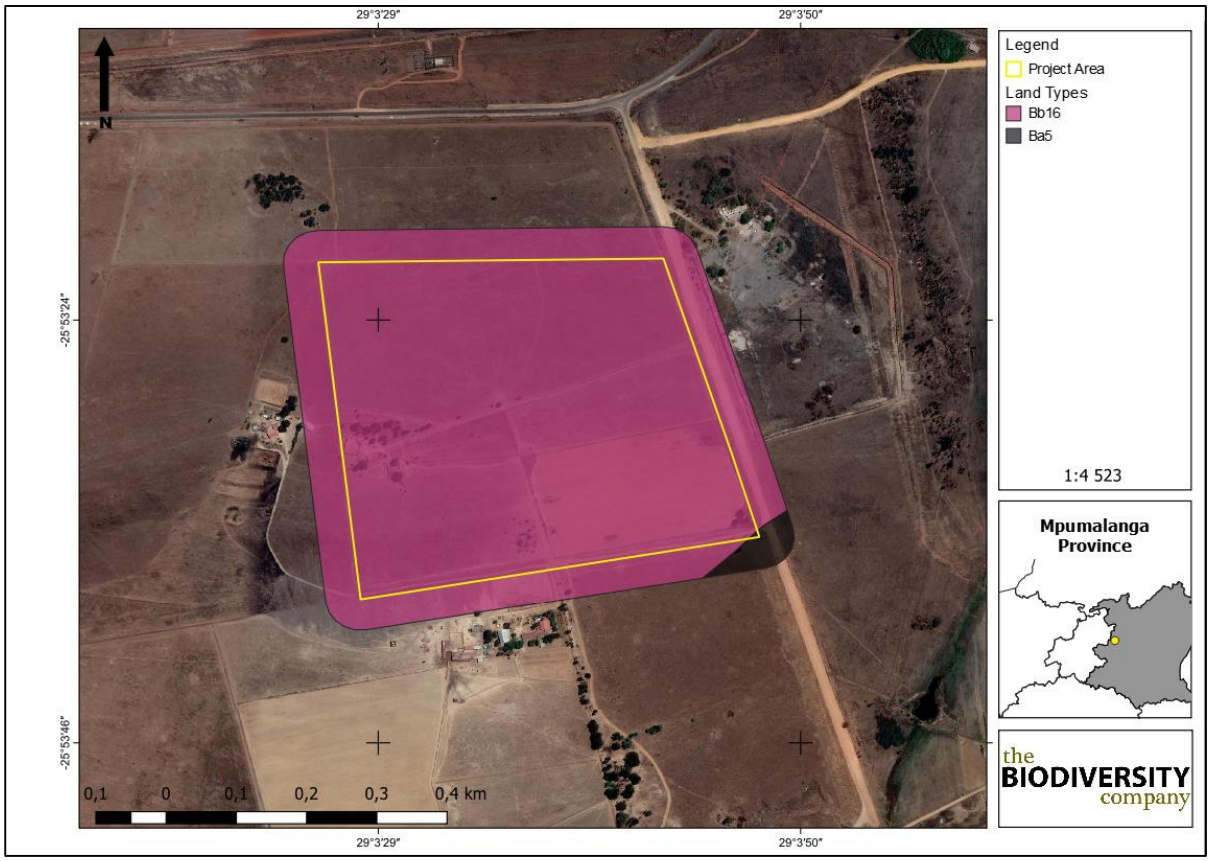

Figure 4-2 The land types associated with the project area

The Ba5 land type terrain unit is illustrated in Figure 4-3. The various soil forms that are expected throughout these land types terrain units are shown in Table 4-1. The Bb16 land type terrain unit is illustrated in Figure 4-4. The various soil forms that are expected throughout the Bb16 land types terrain units are shown in Table 4-2.

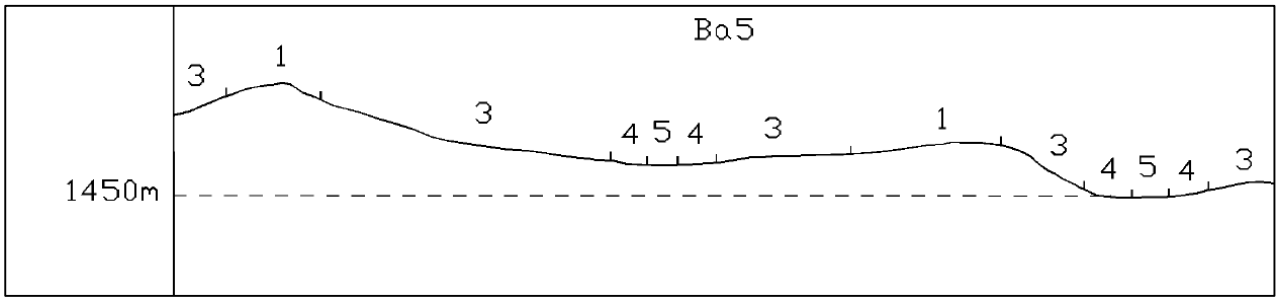

Figure 4-3 Illustration of the Ba5 land type terrain units (Land Type Survey Staff, 1972 - 2006)

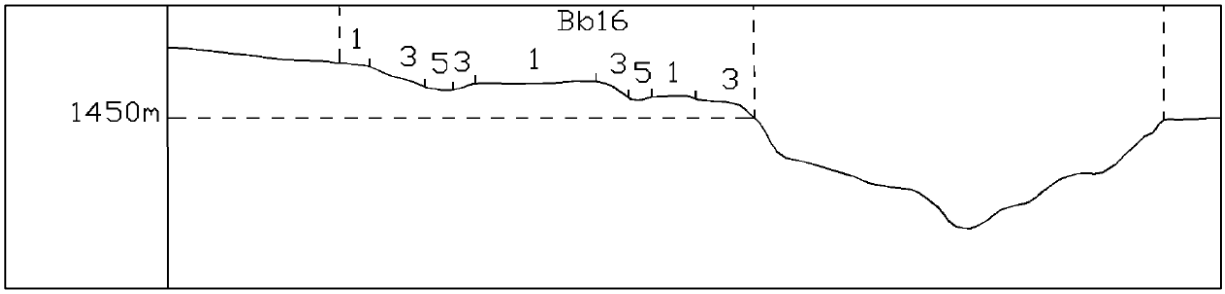

Figure 4-4 Illustration of the Bb16 land type terrain units (Land Type Survey Staff, 1972 - 2006)

Table 4-1 Soils expected at the respective terrain units within the Ba5 land type (Land Type Survey Staff, 1972 - 2006)

Terrain Units							
1 (20%)		**3 (60%)**		**4 (15%)**		**5 (5%)**	
Hutton	50%	Hutton	40%	Hutton	25%	Willowbrook	50%
Glenrosa	20%	Avalon	15%	Avalon	15%	Katspruit	30%
Clovelly	10%	Glenrosa	10%	Longlands	15%	Longlands	20%
Bare rock	10%	Glencoe	10%	Kroonstad	10%		
		Clovelly	5%	Bonheim	10%		
		Longlands	5%	Clovelly	10%		
		Sawrtland	5%	Swartland	5%		
		Wasbank	5%	Glencoe	5%		
		Mispah	5%	Wasbank	5%		

Table 4-2 Soils expected at the respective terrain units within the Bb16 land type (Land Type Survey Staff, 1972 - 2006)

Terrain Units					
1 50%)		**3 (45%)**		**5 (5%)**	
Clovelly	35%	Clovelly	35%	Stream beds	30%
Mispah	15%	Bare Rock	10%	Katspruit	30%
Hutton	15%	Mispah	15%	Longlands	15%
Avalon	15%	Cartref	15%	Wasbank	15%
Cartref	5%	Hutton	10%	Swartland	10%
Glenrosa	5%	Avalon	10%		
Glencoe	5%	Longlands	5%		
Bare Rock	5%				

The geology of this region is included within the Witwatersrand Supergroup and the Pretoria Group. According to Mucina & Rutherford (2006), the Selons River formation, which forms part of the Rooiberg Group, can also be expected in this area with many Quartzite ridges visible from the surface.

4.3 Terrain

The slope percentage of the project area has been calculated and is illustrated in Figure 4-5. The majority of the regulated area is characterised by a slope percentage between 0% and 5%. A smaller part of the regulated area is characterised by a slope percentage between 5% and 10%, with some smaller patches within the project area characterised by a slope percentage up to 15. This illustration indicates a non-uniform topography with gentle to steep slopes being present. The Digital Elevation Model (DEM) of the project area (Figure 4-6) indicates an elevation of 1 514 to 1 539 Metres Above Sea Level (MASL).

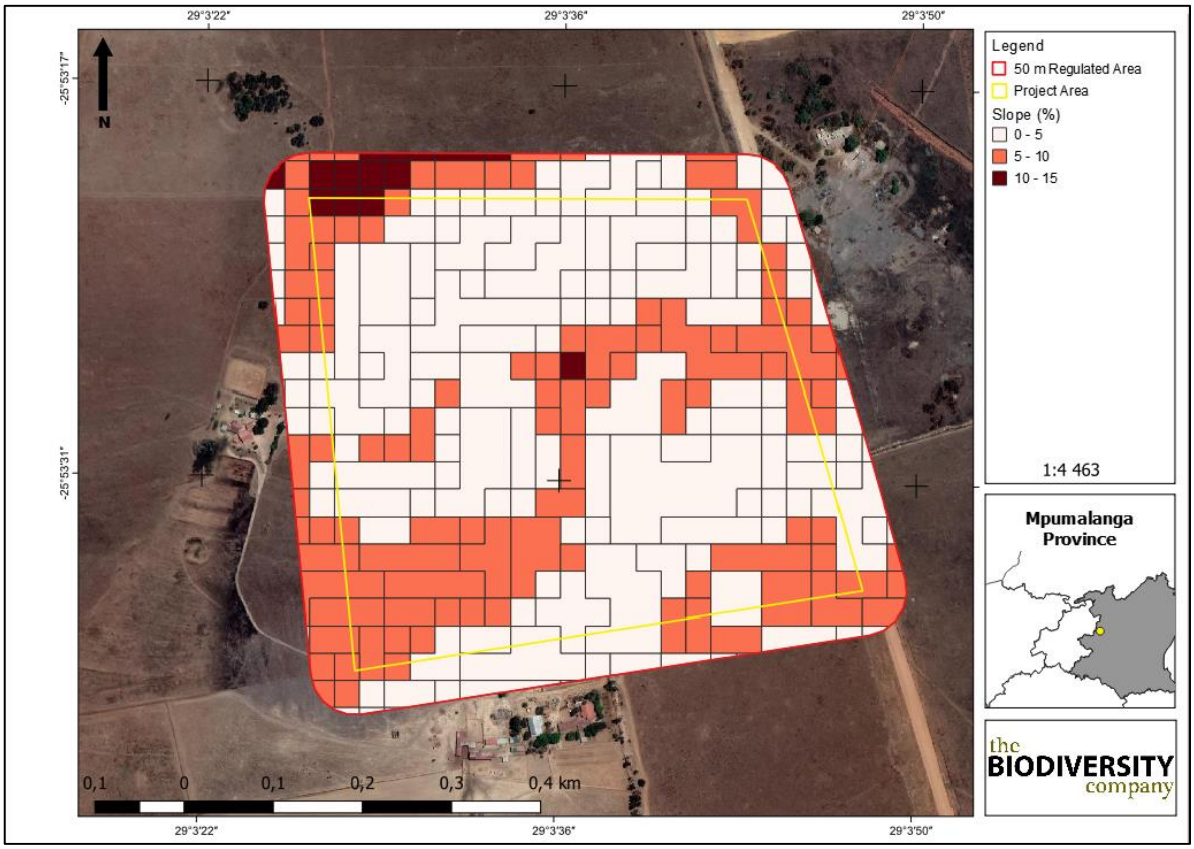

Figure 4-5 Slope percentage map for the regulated area

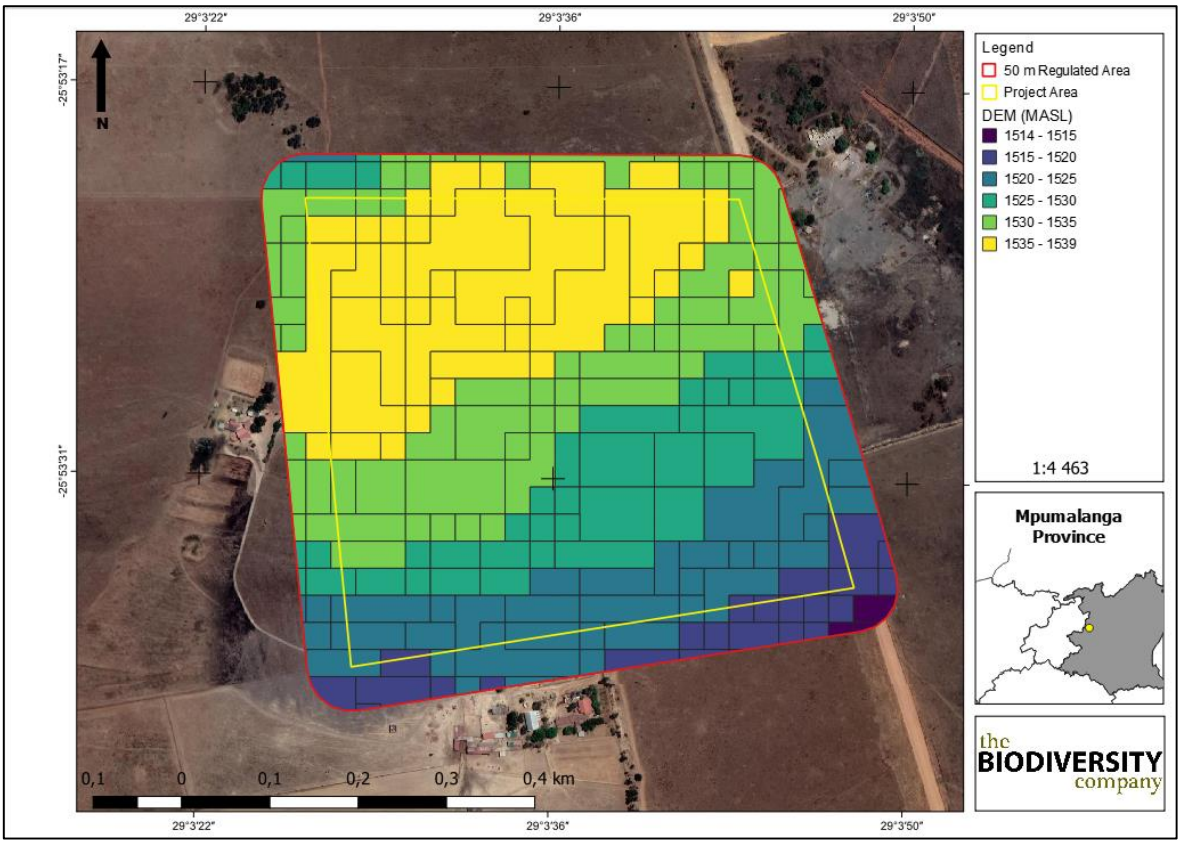

Figure 4-6 Digital Elevation Model of the regulated area (metres above sea level)

5 Results and Discussion

5.1 Baseline Findings

Three soil forms were identified within the 50 m regulated area namely Mispah, Glenrosa and Clovelly (see Figure 5-1). Of these soil forms, the Clovelly soil form is most sensitive.

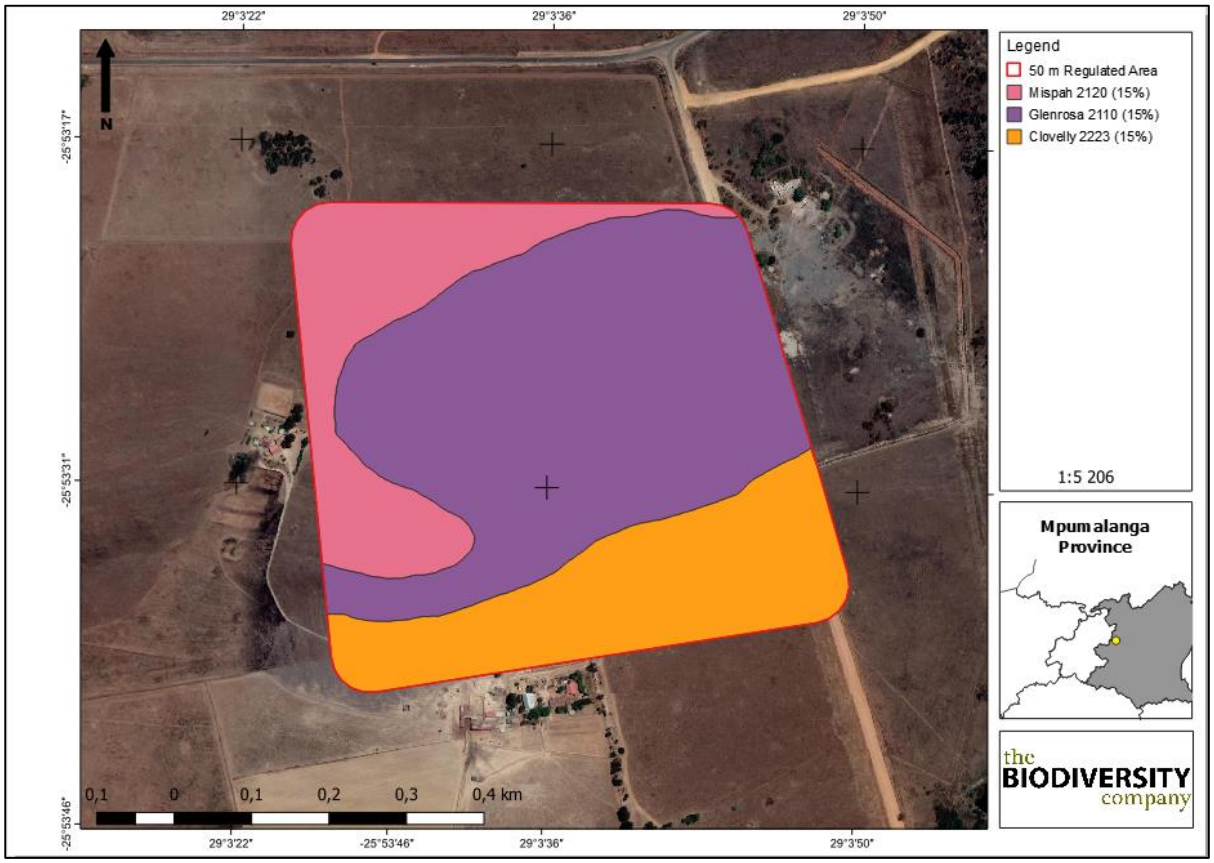

Figure 5-1 Soil forms delineated within the 50 m regulated area

The land capability of the Mispah, Glenrosa and Clovelly soils have been determined to a be class “VI”, class “VI” and a class “IV” respectively with a climate capability level 8 given the low Mean Annual Precipitation and the high evaporation rates. The combination between the determined land capabilities and climate capabilities results in a land potential “L7” and “L6” respectively.

The “L6” land potential is regarded to have very restricted potential. It has regular and/or severe limitations due to soil, slope, temperatures or rainfall and is non-arable. The “L7” land potential is regarded to have low potential. It has severe limitations due to soil, slope, temperatures or rainfall and is non-arable.

5.2 Sensitivity Verification

The following land potential level has been determined;

- Land potential level 6 (this land potential level is characterised by very restricted potential. Regular and/or severe limitations due to soil, slope, temperatures or rainfall. Non-arable); and

- Land potential 7 (this land potential level is characterised by low potential. Severe limitations due to soil, slope, temperatures or rainfall. Non-arable).

Fifteen land capabilities have been digitised by (DAFF, 2017) across South Africa, of which eight potential land capability classes are located within the proposed footprint area's assessment corridor, namely land capability 1 to 8 (ranging from very low to moderate) (see Figure 5-2). The baseline findings and the sensitivities as per the Department of Agriculture, Forestry and Fisheries (DAFF, 2017) national raster doesn't concur with one another in the sense that no "Moderate" sensitivity land potential areas were identified during the site visit.

It is worth noting that this nation-wide data set has some constraints of its own. According to DAFF (2017), inaccuracies and the level of detail of these data sets are of concern. Additionally, the scale used to model these data sets are large (1:50 000 to 1:100 000) and is not suitable for farm level planning. furthermore, it is mentioned by DAFF (2017) that these data sets should not replace any site-based assessments given the accuracies perceived.

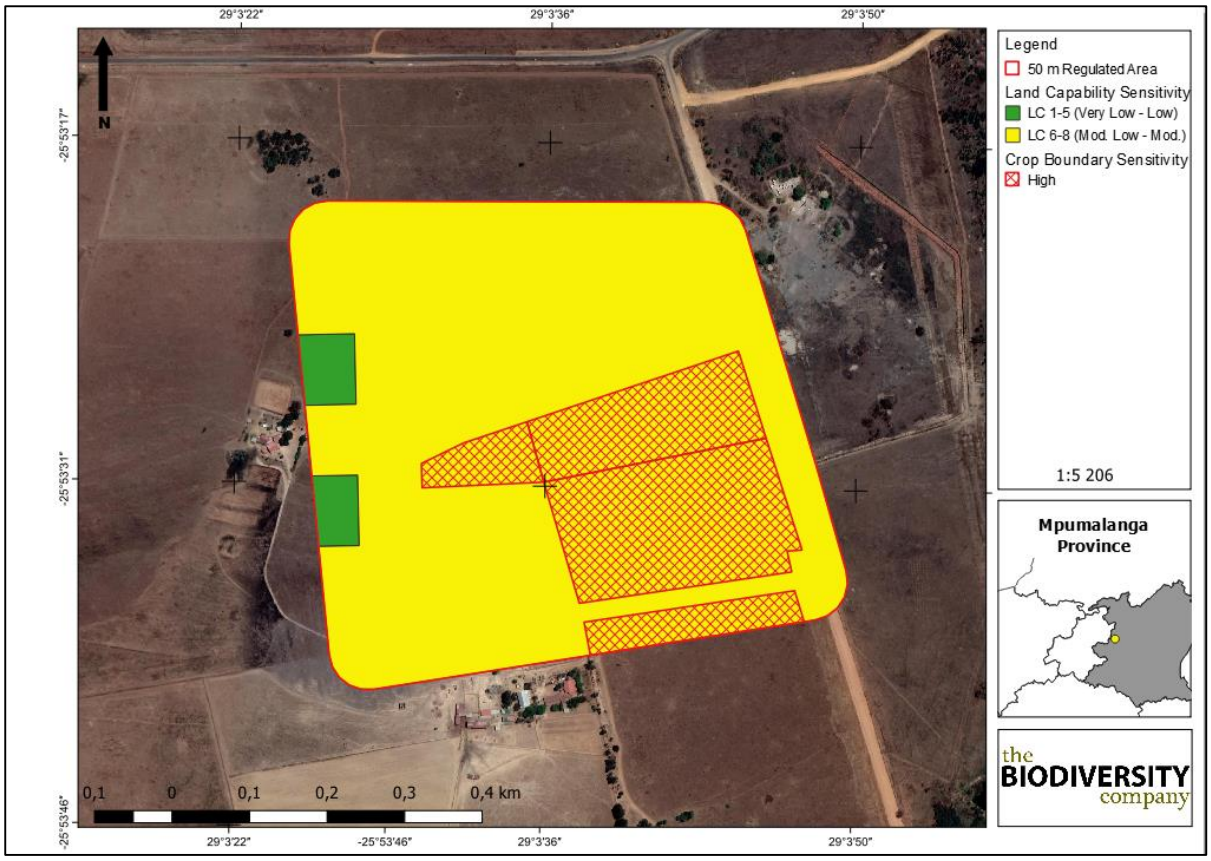

Figure 5-2 Land Capability Sensitivity (DAFF, 2017)

6 Impact Assessment

Potential impacts were evaluated against the project area, specifically the proposed development footprint area. The relevant impacts were then subjected to a prescribed impact assessment methodology. Impacts were assessed in terms of the construction and operational phases. Mitigation measures were only applied to impacts deemed relevant.

6.1 Impact and Risk Assessment Methodology

The risk assessment was completed according to the consequence rating as illustrated based on Table 6-1. Details pertaining to the respective impact and risk methodologies can be made available on request.

Table 6-1 Impact assessment ratings

Aspect	Score	Criteria
Duration	7	Permanent
	6	Beyond project life
	5	Project Life
	4	Long term
	3	Medium term
	2	Short term
	1	Immediate
Extent	7	International
	6	National
	5	District
	4	County
	3	Local
	2	Site-specific
	1	Very limited
Intensity	-7	Extremely high - negative
	-6	Very high - negative
	-5	High - negative
	-4	Moderately high - negative
	-3	Moderate - negative
	-2	Low - negative
	-1	Very low - negative
	0	Negligible
	1	Very low - positive
	2	Low - positive
	3	Moderate - positive
	4	Moderately high - positive
	5	High - positive

	6	Very high - positive
	7	Extremely high - positive
Probability	7	Certain
	6	Highly probable
	5	Likely
	4	Probable
	3	Unlikely
	2	Improbable
	1	Highly unlikely
Significance	>-108	Major - Negative
	(-73) – (-108)	Moderate - Negative
	(-36) – (-72)	Minor - Negative
	(-1) – (-35)	Negligible - Negative
	1 - 35	Negligible – Positive
	36 – 72	Minor – Positive
	73 – 108	Moderate – Positive
	>108	Major - Positive

6.2 Alternatives Considered

No alternatives were considered in this assessment as authorised mining (permit) activities were already underway before the completion of this report.

6.3 Anticipated Impacts

Table 6-2 presents the aspects anticipated for the site clearance & establishment operations, ancillary infrastructure construction as well as when the cemetery will be in operating mode.

Table 6-2 Anticipated impacts for the proposed project on agricultural resources

Main Impact	Project activities that can cause loss/impacts to habitat (especially with regard to the proposed infrastructure areas)	Secondary impacts anticipated
Loss of land capability	• Site clearance and establishment construction & operation • Ancillary infrastructure construction • Ancillary infrastructure operation • Cemetery functioning construction & operations	• Erosion; • Soil degradation; • Compaction; • Land contamination; and • Excavation of soil

6.3.1 Site Clearance & Establishment

It is expected that the proposed cemetery area is in a moderate sensitivity area according to the data from the DEA.

During the site clearance & establishment period, fences will be erected around the project area. Grass will be cut to construct roads for the purpose of movement and to ease traffic on the terrain.

6.3.1.1 Construction & Operation Phase

The construction & operation phase associated with site preparation will include erecting fences around the proposed area. This will lead to compaction and erosion of soil due to increased traffic which could result in the loss of land capability.

It is however worth noting that limited impacts are expected for the construction & operation phase. The pre- mitigation significance ratings scored at **"Minor – Negative"** and the post-mitigation significance rating had a score of **"Negligible – Negative"** (see Table 6-3).

6.3.1.1.1 Mitigation

Limited mitigation is required given the fact that the pre- mitigation significance ratings scored at **"Minor – Negative"** and the post- mitigation significance rating had a score of **"Negligible – Negative"**. Further mitigation is however detailed in Table 7-1.

6.3.2 Ancillary Infrastructure

It is expected that the proposed cemetery area is in a moderate sensitivity area according to the data from the Department of Environmental Affairs.

During the establishment of the ancillary infrastructure, toilet buildings will be constructed. New roads will possibly be constructed to accommodate the new buildings together with easing traffic for individuals that will be using the cemetery during its functioning period.

6.3.2.1 Construction Phase

During the construction phase when ancillary infrastructure will be erected, there will be an increase in traffic on site as well as new buildings that will result in the loss of land capability.

It is however worth noting that severe impacts are expected for the construction phase. The pre- mitigation significance rating has been scored as **"Moderate – Negative"** whilst the post-mitigation significance ratings has been reduced in score to **"Minor – Negative"** (see *Table 6-3*)**.**

6.3.2.1.1 Mitigation

Minor mitigation is required given the fact that the pre- mitigation significance rating has been scored as **"Moderate – Negative"** and the post- mitigation significance rating being scored as **"Minor – Negative".** Further mitigation is however detailed in *Table 7-1*.

6.3.2.2 Operation Phase

During the operation phase when ancillary infrastructure will be erected, traffic on site might be reduced slightly whilst the new buildings that was constructed will result in the loss of land capability.

It is however worth noting that severe impacts are expected for the construction phase. The pre- mitigation significance rating has been scored as **"Moderate – Negative"** whilst the post-mitigation significance ratings has been reduced in score to **"Minor – Negative"** (see *Table 6-3*)**.**

6.3.2.2.1 Mitigation

Minor mitigation is required given the fact that the pre- mitigation significance rating has been scored as **"Moderate – Negative"** and the post- mitigation significance rating being scored as **"Minor – Negative".** Further mitigation is however detailed in *Table 7-1*.

6.3.3 Cemetery Functioning

It is expected that the proposed cemetery area is in a moderate sensitivity area according to the data from the Department of Environmental Affairs.

During the period when the cemetery will be open to the public for normal operation, traffic will be present on the site frequently. When burials take place, the top soil will be stripped and the subsoil will be dug out to create a hole for caskets to be placed in. The removed soil will be put back in the hole after the casket is placed in the hole.

6.3.3.1 Construction & Operation Phase

The construction & operation phase for the functioning operations of the Cemetery might result in traffic increases as well as disturbing the topsoil and subsoil which will lead to the loss of land capability. During burials where pits need to be dug for caskets, the soil will be removed and mixed before being put back in the hole.

It is however worth noting that limited impacts are expected for the construction & operation phase. The pre- mitigation significance rating has been scored as **"Moderate – Negative"** and the post- mitigation significance ratings scored as **"Minor – Negative"** (see *Table 6-3*).

6.3.3.1.1 Mitigation

Limited mitigation is required given the fact that the pre- mitigation significance rating was scored at **"Moderate – Negative"** and the post- mitigation significance ratings scored **"Minor – Negative".** Further mitigation is however detailed in *Table 7-1*.

Table 6-3 Impact assessment for the Doornrug cemetery.

Site Clearance & Establishment Period														
Code	Phase	Impact	Pre-mitigation						Post-mitigation					
			Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
1	Construction & Operation	Loss of land capability	Short term	Site-specific	Moderately high - negative	Slightly detrimental	Likely	Minor - negative	Short term	Site-specific	Moderate - negative	Slightly detrimental	Probable	Negligible - negative
Ancillary Infrastructure														
Code	Phase	Impact	Pre-mitigation						Post-mitigation					
			Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
1	Construction	Loss of land capability	Short term	Site-specific	Extremely high - negative	Moderately detrimental	Certain	Moderate-negative	Short term	Site-specific	High - negative	Slightly detrimental	Certain	Minor - negative
2	Operation	Loss of land capability	Short term	Site-specific	Extremely high - negative	Moderately detrimental	Certain	Moderate - negative	Short term	Site-specific	High - negative	Slightly detrimental	Certain	Minor - negative
Cemetery functioning Period														
Code	Phase	Impact	Pre-mitigation						Post-mitigation					
			Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
1	Construction & Operation	Loss of land capability	Permanent	Site-specific	Moderately high - negative	Moderately detrimental	Highly probable	Moderate - negative	Permanent	Site-specific	Moderate - negative	Moderately detrimental	Likely	Minor - negative

7 Specialist Management Plan

Table 7-1 presents the recommended mitigation measures and the respective timeframes, targets and performance indicators for the study. The mitigations within this section have been taken into consideration during the impact assessment in cases where the post-mitigation environmental risk is lower than that of the pre-mitigation environmental risk.

Table 7-1 Mitigation measures including requirements for timeframes, roles and responsibilities for the study

Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
Monitor compaction on site	Construction/Operational phase	Grounds keeper	Project Area	During Phase
Detailed investigation into ideal locations for the construction of all the infrastructure on site	Construction/Operational phase	Project manager	Project Area	During Phase
Clearing of vegetation.	Construction/Operational Phase	Grounds keeper	Project Area	Ongoing
Implement proper storm water management plans	Life of Project	Project Manager	Project Infrastructure	Ongoing

8 Conclusion

Three soil forms were identified within the 50 m regulated area, namely Mispah, Glenrosa and Clovelly soil forms. The most sensitive of these soil forms are characterised by a land potential 6, due to the poor climate, with a 'Low' sensitivity. The land capability sensitivities (DAFF, 2017) indicate land capabilities with "Moderate" sensitivities, which do not correlate with the findings from the baseline assessment.

Considering the nature of the proposed activities and the low sensitivity soil resources, it is the specialist's opinion that no loss of land capability is expected, and no segregation of high production agricultural resources are expected. Therefore, it is recommended that the proposed activities may proceed as have been planned.

9 References

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