The Agricultural Compliance Statement for the Matsopa Minerals Prospecting Right Application (Ref. 10631 PR)

Koppies, Fezile Dabi District Municipality

January 2022

Client

Prepared by:

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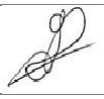
Report Name	**The Agricultural Compliance Statement for the Matsopa Minerals Prospecting Right Application**
Submitted to	CABANGA environmental
Report Reviewer	**Andrew Husted**  Andrew Husted is Pr Sci Nat registered (400213/11) in the following fields of practice: Ecological Science, Environmental 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	**Ivan Baker**  Ivan Baker is Cand. Sci Nat registered (119315) in environmental science and geological science. Ivan is an experienced wetland and ecosystem service specialist, a hydropedologist and pedologist. He completed his MSc in environmental science and hydropedology at the North-West University of Potchefstroom.
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, **Ivan Baker** 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.

Ivan Baker

Soil Specialist

The Biodiversity Company

January 2022

1 Introduction

Matsopa Minerals (Pty) Ltd has submitted an application for prospecting in terms of the Mineral and Petroleum Resources Development Act, Act 28 of 2002 (MPRDA) over the farms Geluk 237 and Goudlaagte 238, situated near the town of Koppies, Free State Province. The application relates to the search for commercially viable ore bodies of the following minerals:

- Clay, including Bentonite Clay (CB),
- Clay (General),
- Shale/Brick Clay (CS), and
- Illite-Montmorillinte Group (Clay) (CI).

The Biodiversity Company was appointed to compile an agricultural compliance statement for the proposed Prospecting Right Application.

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. Considering the fact that no site assessment has been undertaken, the most sensitive soil form that is expected within the relevant land type will be considered as the baseline conditions.

1.1 Scope of Work

According to the National Web based Environmental Screening Tool, the proposed development is located within a “Medium” sensitivity land capability area. The protocols for minimum requirements (DEA, 2020) stipulates that in the event that mitigation and remedial measures will allow for the land capability to be restored within two years (as in the case with prospecting), a compliance statement will be required only. 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 Ivan Baker

Ivan Baker is Cand.Sci.Nat. registered (119315) in environmental science and geological science. Ivan is a wetland and ecosystem service specialist, a hydropedologist and pedologist that has completed numerous specialist studies ranging from basic assessments to EIAs. Ivan has carried out various international studies following FC standards. Ivan completed training in Tools for Wetland Assessments with a certificate of competence and completed his MSc in environmental science and hydropedology at the North-West University of Potchefstroom.

2 Project Area

The project area is located approximately 10 km north of Koppies, immediately west of Koppies Bentonite Mine and north of the R82 regional road in the Free State Province. The surrounding land uses include farming, mining and watercourses (see Figure 2-1). The prospecting right area (PRA) encompasses two farms, namely Geluk 237 and Goudlaagte 238 . Approximately 330 drilling sites have been proposed throughout the PRA (see Figure 2-2), these will be drilled to a maximum depth of 30m.

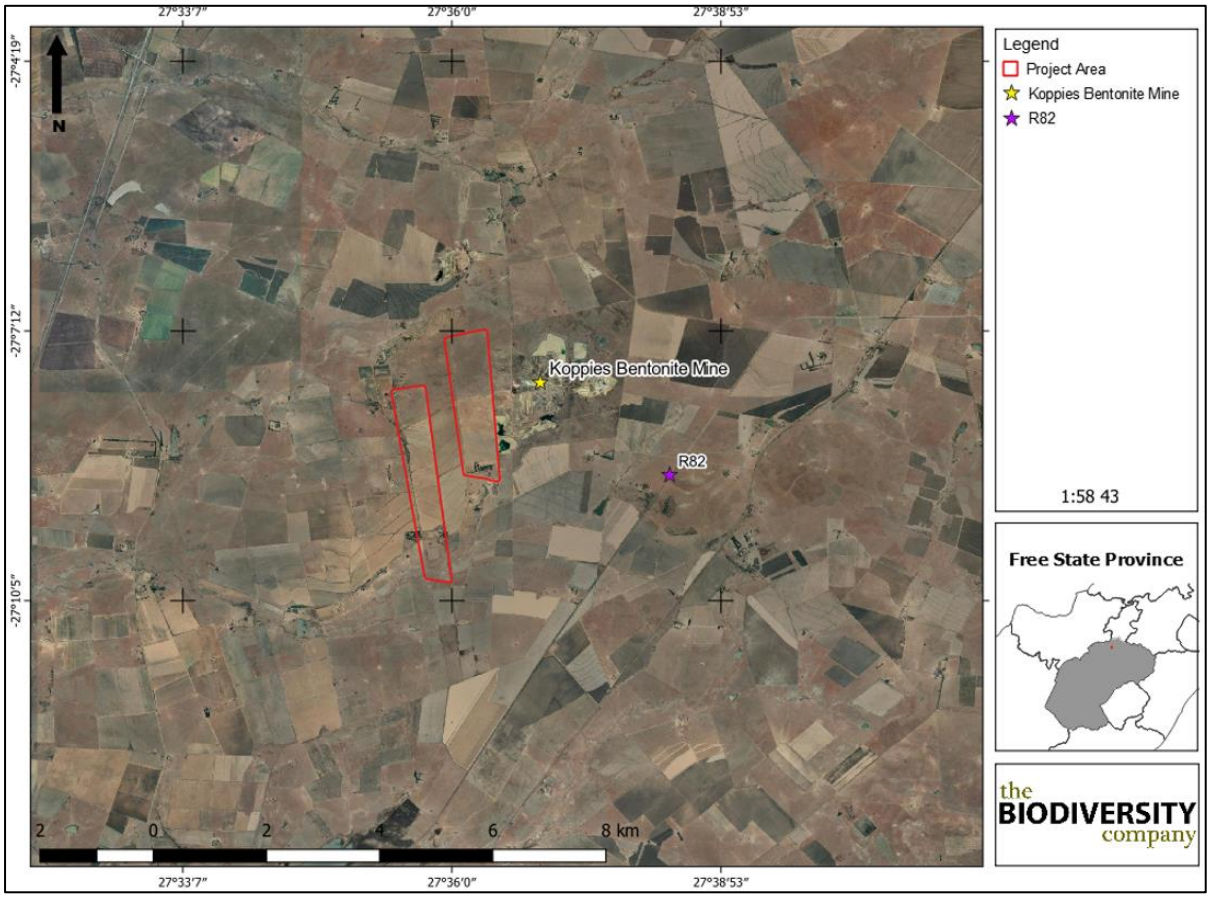

Figure 2-1 Locality map of the project area

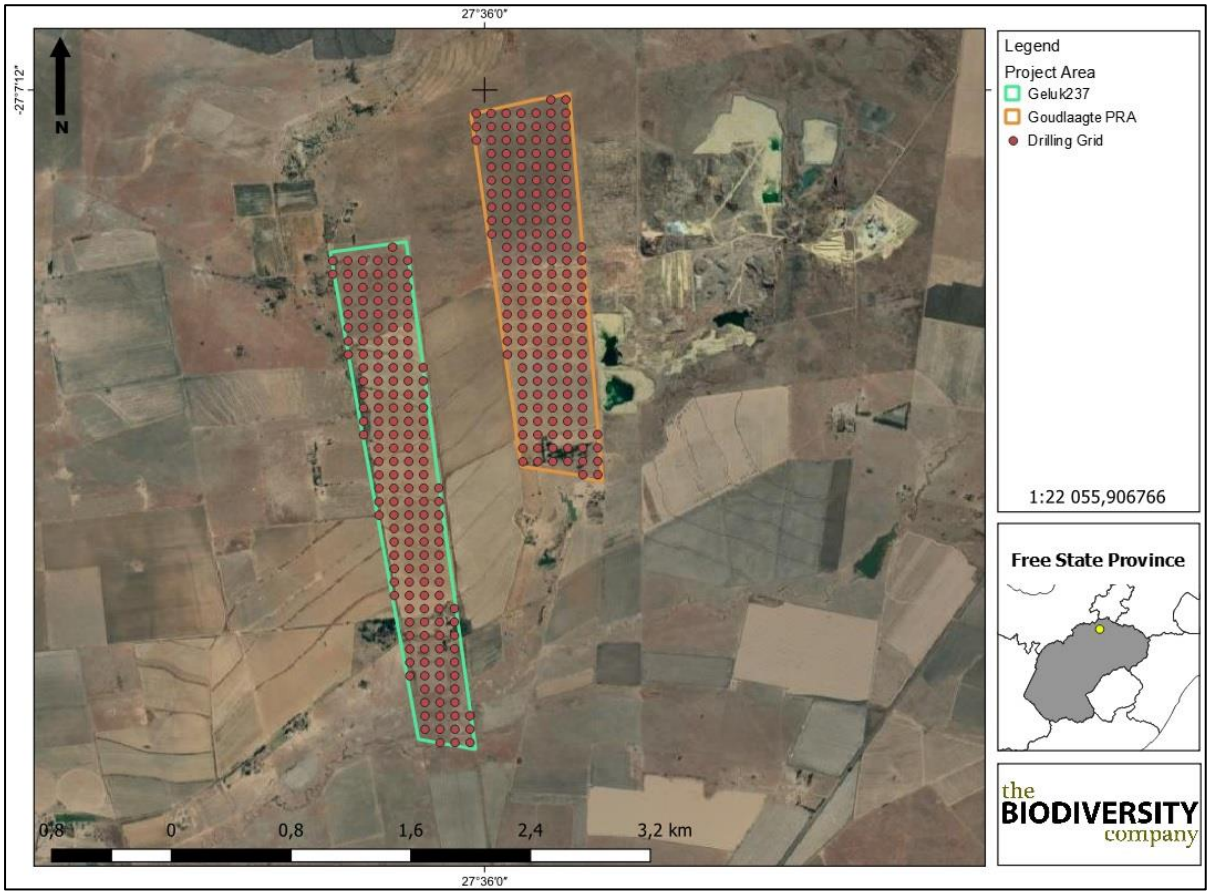

Figure 2-2 Proposed drilling grid

3 Methodology

3.1 Site Inspection

The site will be traversed by vehicle and on foot. A soil auger has been used to determine the soil form/family and depth. The soil will be hand augured to the first restricting layer or 1.2 m. Soil survey positions were recorded as waypoints using a handheld GPS. Soils were identified to the soil family level as per the “Soil Classification: A Taxonomic System for South Africa” (Soil Classification Working Group, 2018). Landscape features such as existing open trenches were also helpful in determining soil types and depth.

3.2 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.

3.3 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.

3.4 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

3.5 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 Gh 6 vegetation type is characterised by a summer rainfall with a Mean Annual Precipitation (MAP) of 560 mm which peaks in December and January. The Mean Annual Temperature has been calculated at approximately 15 ℃ with a relatively high frost occurrence (Mucina & Rutherford, 2006) (see Figure 4-1).

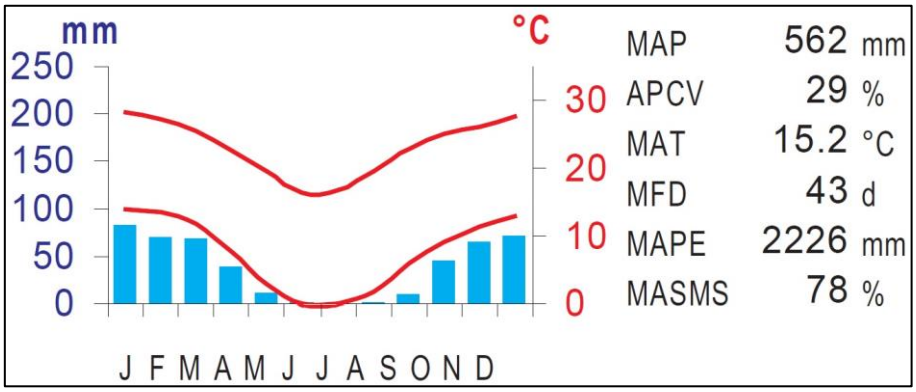

Figure 4-1 Climate for the Central Free State Grassland (Mucina & Rutherford, 2006)

4.2 Soils and Geology

The Adelaide Subgroup's Sandstone and Sedimentary mudstone are found in the extreme northern section of this vegetation type together with that of the Ecca Group. This geology gives rise to Melanic, Vertic and red soils typically from the Dc land type (Mucina and Rutherford, 2006).

According to the land type database (Land Type Survey Staff, 1972 - 2006) the proposed drilling sites are located within the Dc 7 land type. According to the land type database (Land Type Survey Staff, 1972 - 2006), the Dc land type consists of prismacutanic and/or pedocutanic diagnostic horizons with the addition of one or more of the following; Vertic, melanic and red structured diagnostic horizons. The relevant terrain units and expected soils are illustrated and listed in Figure 4-2 and

Table 4-1.

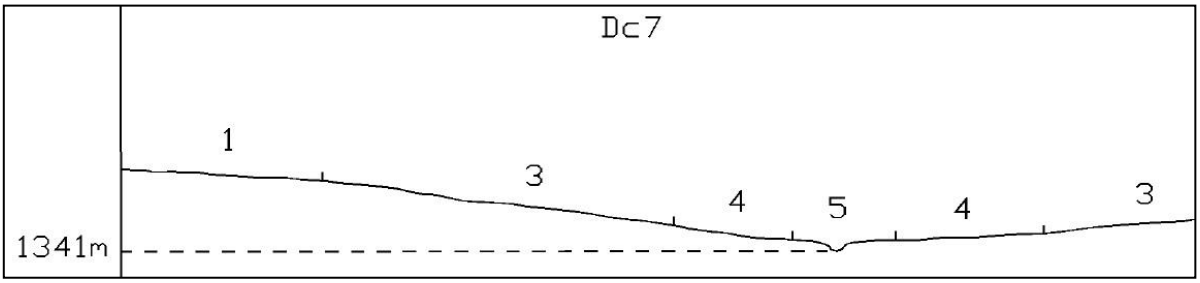

Figure 4-2 Illustration of land type Dc 7 terrain units (Land Type Survey Staff, 1972 - 2006

Table 4-1 Soils expected at the respective terrain units within the Dc 7 land type (Land Type Survey Staff, 1972 - 2006)

Terrain units							
1 (20%)		**3 (40%)**		**4 (35%)**		**5 (5%)**	
Arcadia	26%	Valsrivier	55%	Valsrivier	58%	Rensburg	70%
Valsrivier	25%	Bonheim	16%	Bonheim	17%	Katspruit	12%
Swartland	16%	Arcadia	14%	Arcadia	11%	Bonheim	10%
Mayo	10%	Swartland	5%	Katspruit	6%	Arcadia	8%
Bare Rock	5%	Bare Rock	2%	Sterkspruit	6%		
Glenrosa	5%	Glenrosa	2%	Estcourt	2%		
Westleigh	4%	Mayo	2%				
Shortlands	4%	Westleigh	2%				
Hutton	4%	Shortlands	1%				
Avalon	1%	Avalon	1%				

4.3 Terrain

The slope percentage of the project area has been calculated and is illustrated in Figure 4-3. The majority of the regulated area is characterised by a slope percentage between 0 and 5%, with some smaller patches within the project area characterised by a slope percentage up to 18. This illustration indicates a non-uniform topography with gentle to steep slopes being present. The Digital Elevation Model (DEM) of the project area (Figure 4-4) indicates an elevation of 1 420 to 1 490 Metres Above Sea Level (MASL).

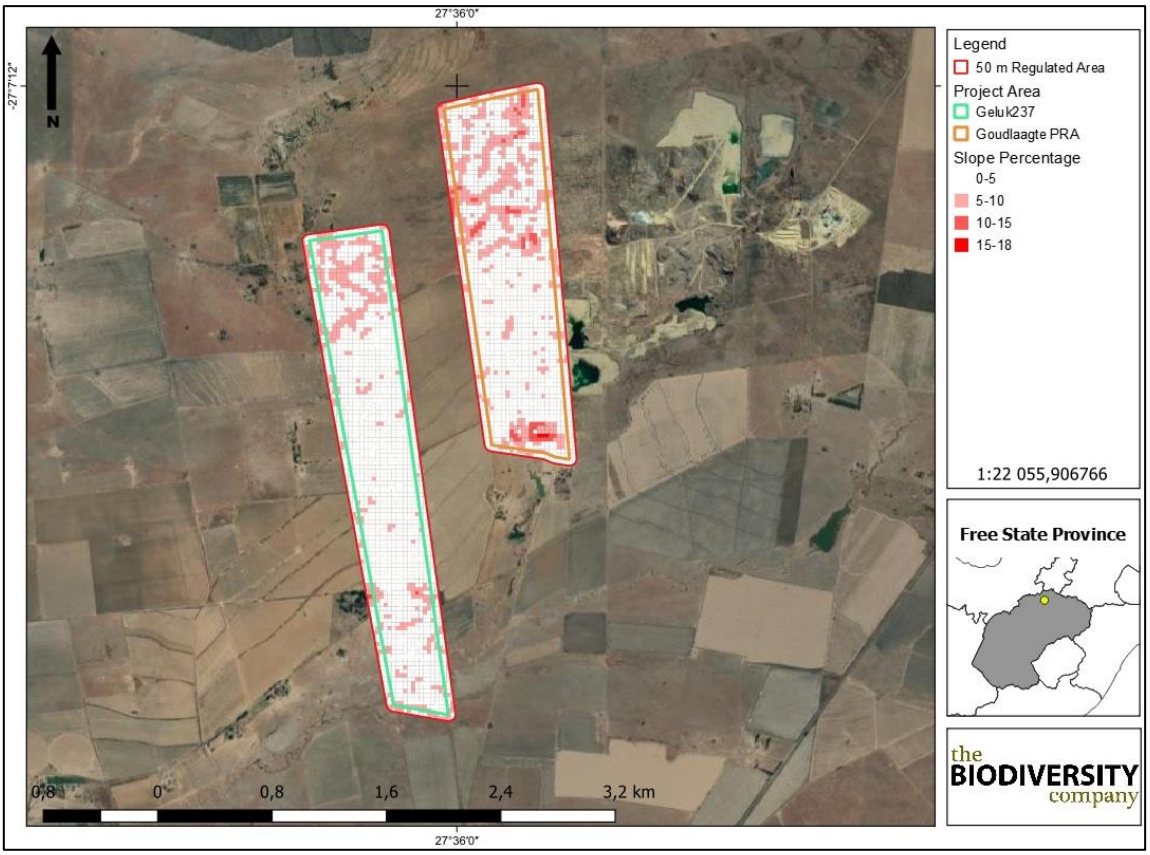

Figure 4-3 Slope percentage map for the regulated area

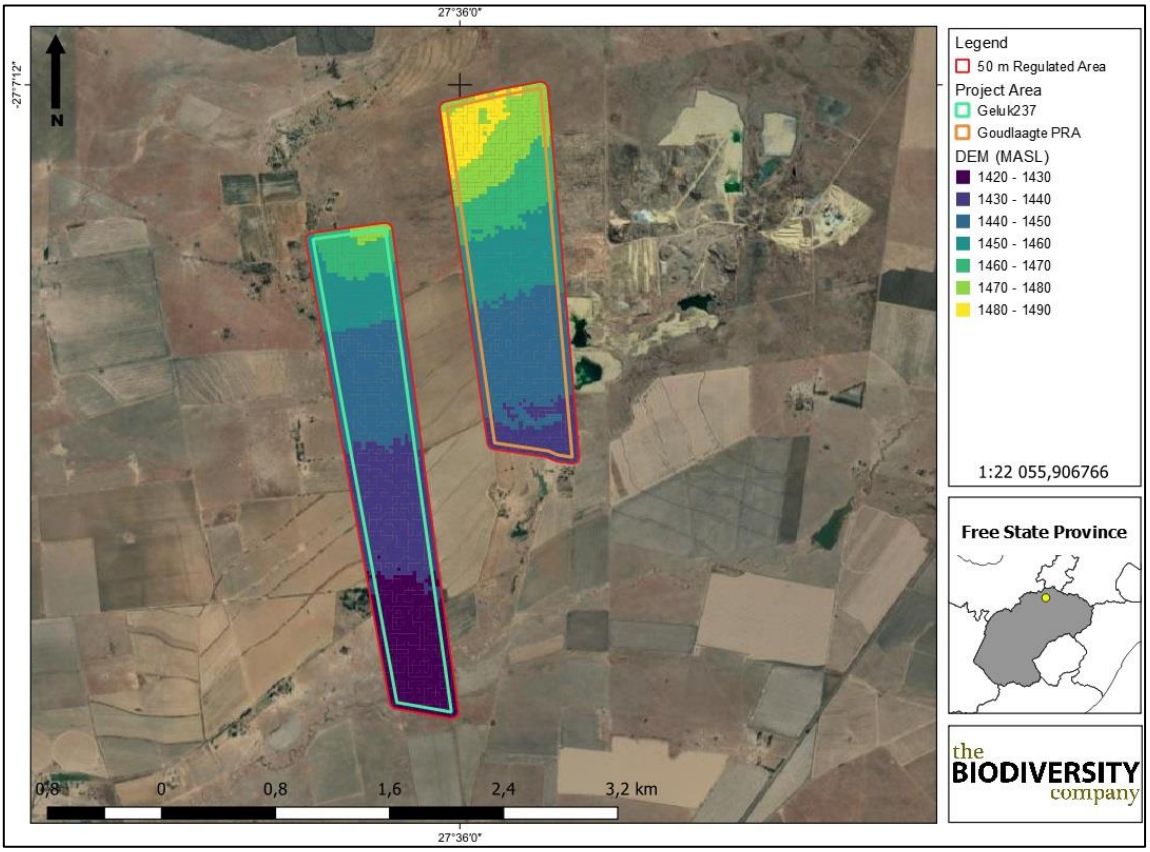

Figure 4-4 Digital Elevation Model of the regulated area (metres above sea level)

5 Results and Discussion

5.1 Baseline Findings

Various soil forms were identified within the 50 m regulated area, including Glenrosa, Rensburg, Valsrivier, Sterkspruit and Westleigh (see Figure 5-1). Of these soil forms, the Valsrivier and Sterkspruit soil forms are most sensitive.

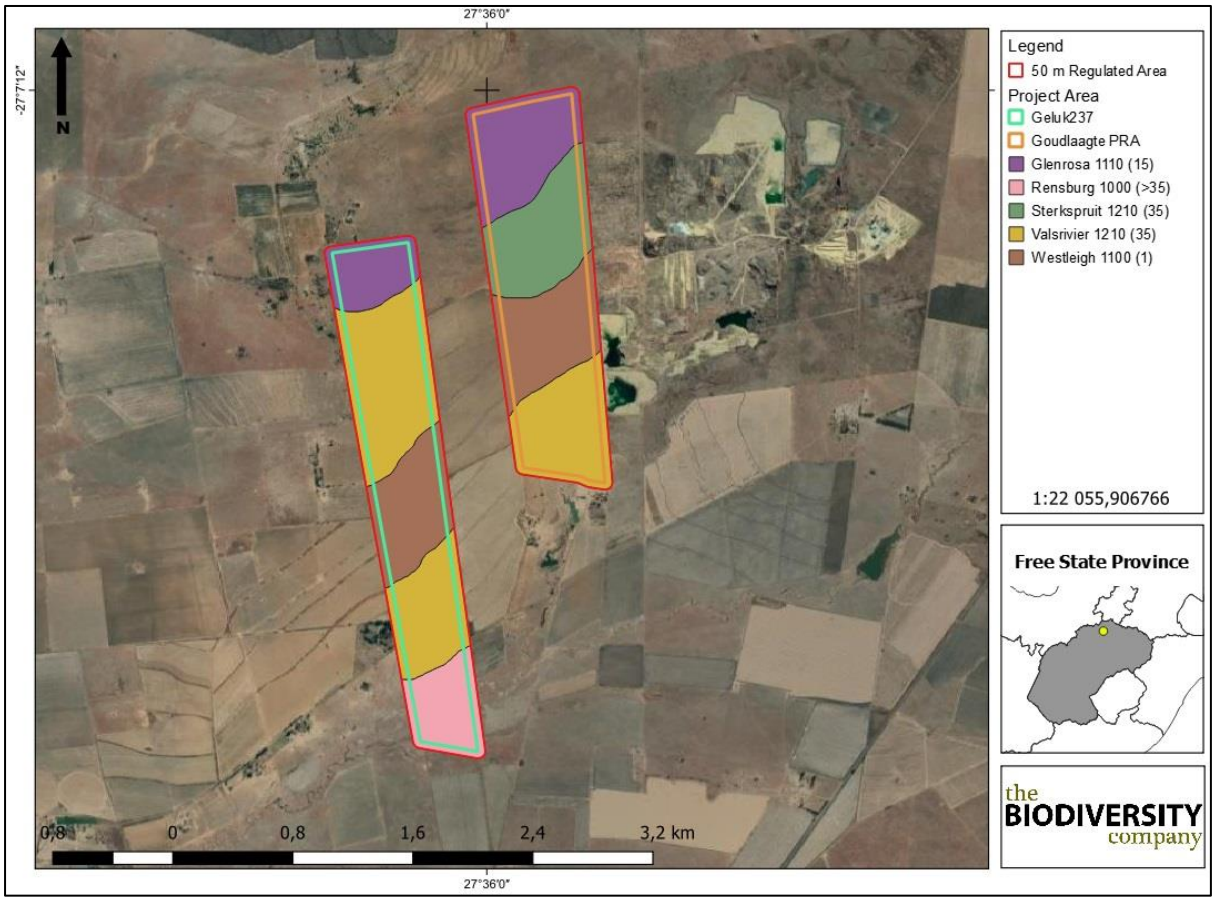

Figure 5-1 Soil forms delineated within the 50 m regulated area

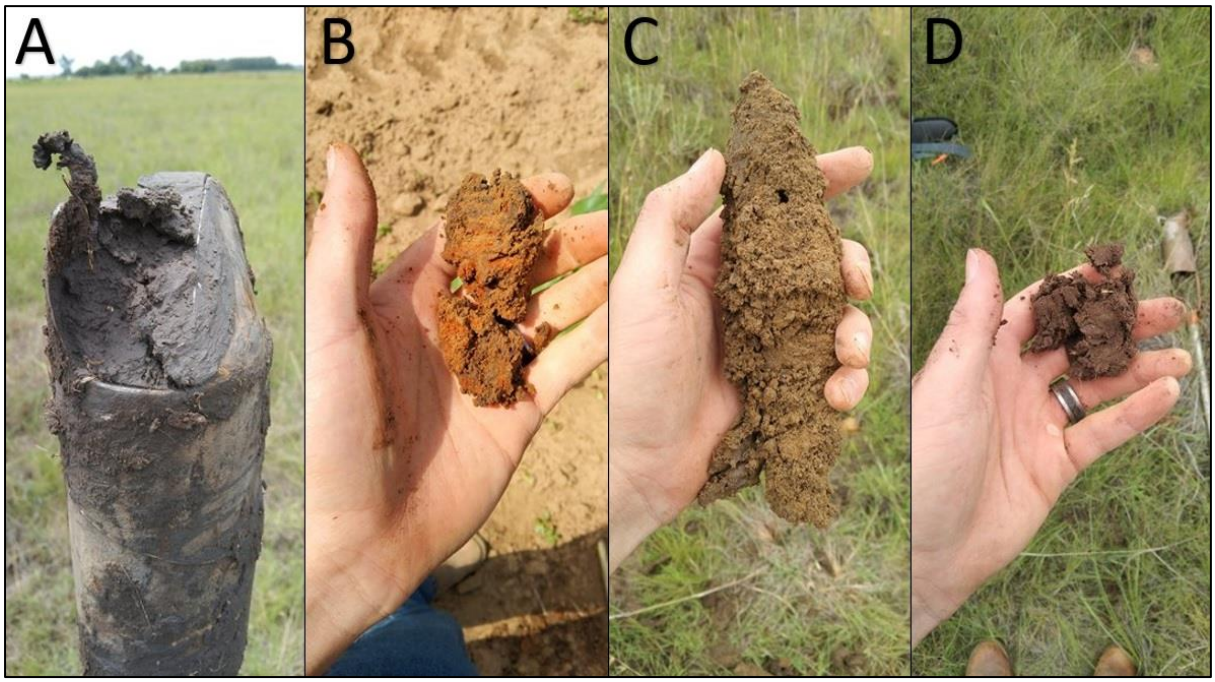

Figure 5-2 Identified diagnostic horizons. A) Gleyic horizon. B) Soft plinthic horizon. C) Prismacutanic horizon. D) Pedocutanic horizon.

The land capability of the Sterkspruit and Valsrivier soils have been determined be class “III” 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 “L6”. The “L6” land potential is regarded to have very restricted potential. Regular and/or severe limitations due to soil, slope, temperatures or rainfall. 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.

Fifteen land capabilities have been digitised by (DAFF, 2017) across South Africa, of which three potential land capability classes are located within the proposed footprint area’s assessment corridor, namely land capability 5 to 8 (ranging from low/moderate to moderate). The baseline findings and the sensitivities as per the Department of Agriculture, Forestry and Fisheries (DAFF, 2017) national raster file concur with one another.

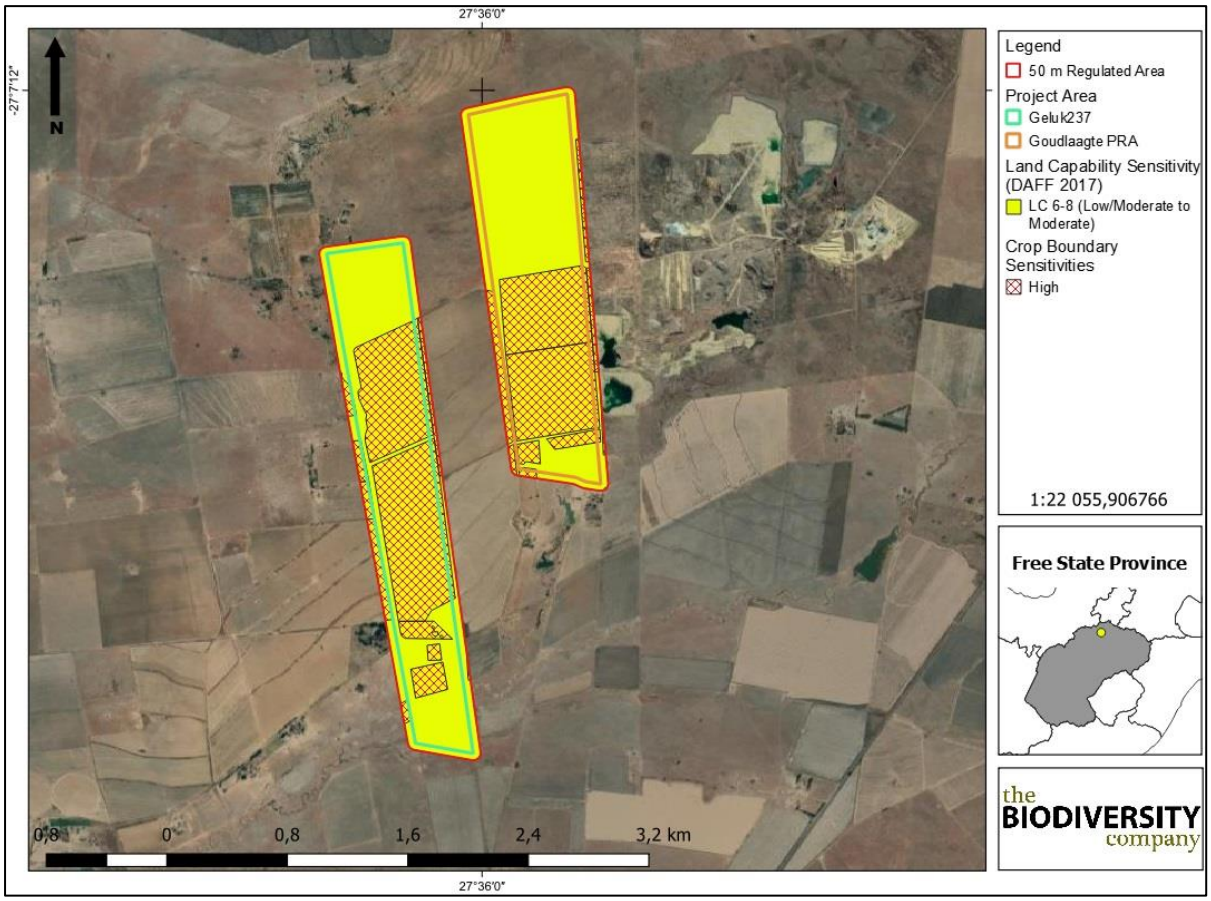

Figure 5-3 Land Capability Sensitivity (DAFF, 2017)

6 Conclusion

Various soil forms were identified within the 50 m regulated are, namely the Rensburg, Valsrivier, Sterkspruit, Westleigh and Glenrosa soil forms. The most sensitive of these soil forms are characterised by a land potential 6, due to the poor climate. The land capability sensitivities (DAFF, 2017) indicate land capabilities with “Moderate” sensitivities, which correlates with the findings from the baseline assessment.

Considering the nature of the proposed activities and the low to moderate sensitivity soil resources, it is the specialist’s opinion that no segregation of farming practices nor loss of land capability for periods longer than 7 days are expected. Borehole drilling together with rehabilitation back to the initial land capability will take place within 7 days which ensures the conservation of land potential resources. Therefore, it is recommended that the proposed activities proceed as have been planned.

7 References

Land Type Survey Staff. 1972 - 2006. Land Types of South Africa: Digital Map (1:250 000 Scale) and Soil Inventory Databases. Pretoria: ARC-Institute for Soil, Climate, and Water.

Mucina, L., & Rutherford, M. C. 2006. The Vegetation of South Africa, Lesotho, and Swaziland. Strelitzia 19. Pretoria: National Biodiversity Institute.

Smith, B. 2006. The Farming Handbook. Netherlands & South Africa: University of KwaZulu-Natal Press & CTA.

Soil Classification Working Group. 1991. Soil Classification A Taxonomic system for South Africa. Pretoria: The Department of Agricultural Development.

Soil Classification Working Group. 2018. Soil Classification A Taxonomic system for South Africa. Pretoria: The Department of Agricultural Development.

8 Appendix A- Specialist CV

Masters in Environmental Science and Hydropedology

Cell: +27 79 898 4056

Email: ivan@thebiodiversitycompany.com

Identity Number: 9401105251087

Date of birth: 10 January 1994

Profile Summary

Working experience throughout Southern Africa

Working experience in West-Africa

Specialist experience with mining, construction and agriculture.

Specialist expertise include hydropedology, pedology, land contamination, agricultural potential, land rehabilitation, rehabilitation management and wetlands resources.

Experience hydropedological modelling (HYDRUS model)

Areas of Interest

Mining, Oil & Gas, Renewable Energy & Bulk Services Infrastructure Development, Farming, Land contamination, Sustainability and Conservation.

Key Experience

- Environmental Impact Assessments (EIA)
- Environmental Management Programmes (EMP)
- Wetland delineations and ecological assessments
- Rehabilitation Plans and Monitoring
- Soil-and rock classification
- Level 1, 2 and 3 hydropedology assessments
- Agriculture potential assessments
- Land contamination assessments
- Modulation of surface- and subsurface flows (HYDRUS model)

Countries worked in

South Africa	Mozambique
Swaziland	Zimbabwe
Guinea	

Nationality

South African

Languages

English – Proficient

Afrikaans – Proficient

Qualifications

- MSc (North-West University of Potchefstroom) – Hydropedology
- BSc Honours (North-West University of Potchefstroom) – Environmental geology-Pedology and rehabilitation
- BSc Environmental sciences
- Pr Sci Nat candidateship

SELECTED PROJECT EXPERIENCE

Project Name: Environmental impact assessment for the construction of Road DR08606 leading to Mlamli Hospital, Sterkspruit

Personal position / role on project: Wetland ecologist

Location: Sterkspruit, Eastern Cape Province, South Africa

Main project features: To conduct a wetland assessment, as a component of the environmental authorisation process and Water Use Licence Application (WULA) for the construction of Road DR08606 leading to Mlamli Hospital

Project Name: Biodiversity Baseline & Impact Assessment Report for the proposed Nondvo Dam Project

Personal position / role on project: Wetland ecologist

Location: Mbabane, Swaziland

Main project features: To conduct various assessments according to IFC standards in regard to delineation of wetlands and assessing ecosystem services.

Project Name: Agricultural Potential Assessment - Proposed Kalabasfontein Coal Mining Project Extension

Personal position / role on project: Project Manager and Soil Specialist.

Location: Bethal, Mpumalanga, South Africa

Main project features: To conduct a soil assessment to identify any sensitive resources that might be affected by the proposed mining activities and associated infrastructure as part of an environmental impact assessment.

Project Name: Soil assessment for the closure of the St Helena Shaft, Harmony

Personal position / role on project: Soil specialist

Location: Welkom, Free State, South Africa

Main project features: To conduct a thorough soil and fertility assessment to recommend relevant mitigation and rehabilitation measures to finalise closure at the relevant mine

Project Name: Wetland Functionality Assessment for the Environmental, Health and Socio-Economic Baseline Studies for Block 2 at Siguiri Gold Mine

Personal position / role on project: Wetland ecologist

Location: Siguiri, Guinea, West-Africa

Main project features: To conduct various assessments according to IUCN standards in regard to delineation of wetlands and assessing ecosystem services.

Project Name: Level 3 Hydropedological Assessment for the Sara Buffels Mining Project

Personal position / role on project: Hydropedologist

Location: Ermelo, Mpumalanga, South-Africa

Main project features: To conduct various assessments to determine the hillslope hydrology and to acquire information relevant to the vadose zone's hydraulic properties to quantify sub-surface flows by means of modelling.

Project Name: Level 3 Hydropedological Assessment for the Buffalo Coal Mining Project

Personal position / role on project: Hydropedologist

Location: Dundee, KwaZulu-Natal, South-Africa

Main project features: To conduct various assessments to determine the hillslope hydrology and to acquire information relevant to the vadose zone's hydraulic properties to quantify sub-surface flows by means of modelling

Project Name: Biodiversity Baseline & Impact Assessment for the proposed Tetereane 15MW Solar PV Plant

Personal position / role on project: Ecosystem Services Specialist

Location: Cuamba, Mozambique, Southern-Africa

Main project features: To conduct various assessments according to IUCN standards in regard to ecosystem services

Project Name: Land contamination assessment for the proposed Fleurhof Development

Personal position / role on project: Soil Specialist

Location: Fleurhof, South Africa

Main project features: To conduct assessments relevant to the determination of land contamination, including recommendations, mitigations and risk assessments.

OVERVIEW

An overview of the specialist technical expertise include the following:

- Ecological wetland assessment studies, including the integrity (health) and functioning of the wetland systems.
- Wetland offset strategy designs.
- Wetland rehabilitation plans.
- Monitoring plans for wetland systems.
- Soil classification and agricultural assessments.
- Stripping and stockpiling guidelines.
- Soil rehabilitation plans.
- Soil and stockpile monitoring plans.
- Hydropedological assessments.

TRAINING

Some of the more pertinent training undergone includes the following:

- Tools for a Wetland Assessment (Certificate of Competence) – Rhodes University 2018; and
- Workshop on digital soil mapping.

EMPLOYMENT EXPERIENCE

Internship at SRK consulting (January 2017-August 2017)

- **Field assistant** for SRK consulting during 2017 included the sampling of surface and groundwater as well as on site tests, the accumulation of various different data sets from field loggers, presenting and arranging the relevant data and ultimately using it for my own personal post-graduate studies.

Internship at The Biodiversity Company (August 2017-December 2017)

Employed as an intern (wetland and soil scientist) during the last few months of 2017. During this period, I was part of a variety of soil- and wetland projects, both as report writer and/or field assistant.

CURRENT EMPLOYMENT: The Biodiversity Company (January 2018 – Present)

- **Scientific report writing** to ensure that the relevant standards and requirements have been attained, namely local country legislation, as well as WB, EP and IFC requirements.

ACADEMIC QUALIFICATIONS

North-West University of Potchefstroom: MAGISTER SCIENTIAE (MSc) - Hydropedology:

Title: *Characterisation of vadose zone processes in a tailings facility*

North-West University of Potchefstroom (2016): BACCALAUREUS SCIENTIAE HONORIBUS (Hons) – Environmental Geology- Pedology and rehabilitation

North-West University of Potchefstroom (2015): BACCALAUREUS SCIENTIAE IN NATURAL AND ENVIRONMENTAL SCIENCES. Majors: Geology and Geography