SOIL AND AGRICULTURAL COMPLIANCE STATEMENT FOR THE PROPOSED MINING RIGHT APPLICATION FOR THE RYST KUIL PROJECT

Beaufort West, Beaufort West Local Municipality, Western Cape Province, South Africa

7/1/2025

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Report Name	**SOIL AND AGRICULTURAL COMPLIANCE STATEMENT FOR THE PROPOSED MINING RIGHT APPLICATION FOR THE RYST KUIL PROJECT**
Specialist Theme	Soil and Agricultural Theme
Project Reference	Ryst Kuil Project
Report Version	7/1/2025
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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, Amended. We have no conflicting interests in the undertaking of this activity and have no interest in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than providing a professional service within the constraints of the project (timing, time, and budget) based on the principals of science.

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Abbreviations

Abbreviation	Definition

CARA	Conservation of Agricultural Resources Act
DAFF	Department of Agriculture, Forestry and Fisheries
DEM	Digital Elevation Model
DFFE	Department of Forestry, Fisheries and the Environment
EAP	Environmental Assessment Practitioner
EMPr	Environmental Management Programme
GNR	Government Notice Regulation
GPS	Global Positioning System
Ha	Hectares
ISCW	Institute for Soil Climate and Water
MAP	Mean Average Precipitation
MAPE	Mean Annual Potential Evapotranspiration
NEMA	National Environmental Management Act
RE	Remainder (as in farm portion)
SG	Surveyor General

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1 Introduction

1.1 Background

The Biodiversity Company was appointed by Aquatox Consulting (Pty) Ltd to conduct a soil and agricultural potential assessment for the proposed Ryst Kuil project. The proposed project area is approximately 43 Km southeast of Beaufort West, Western Cape Province. The project area is also located approximately 14 Km east of the N12 National Road.

The approach adopted for this assessment has taken cognisance of Government Notice 320 in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (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 NEMA, 1998, when applying for Environmental Authorisation”. The National Web based Environmental Screening Tool (DFFE, 2025) has characterised the agricultural theme sensitivity of the project area as predominantly “High”, with a key consideration of this assessment being the determination of agricultural theme sensitivities for the project. However, according to the Government Gazette 43110, Government Notice No. 320, if the information gathered from the site sensitivity verification differs from the designation of “very high” or “high” agricultural sensitivity, the proposed project area is to be of a “medium” or “low” sensitivity. Therefore, the proposed project area was found to have a low sensitivity from an agricultural and soil resources management perspective for the respective purpose of the proposed activities.

This report aims to present and discuss the findings from the soil resources identified within the 50 m buffered area. The report will also identify the soil suitability and land potential of these soils; the land uses within the assessment area and the risks associated with the proposed Ryst Kuil project from an agricultural and soil resources management perspective.

This report should be interpreted after taking into consideration the findings and recommendations provided by the specialist (Section 3 and 4 of this report). Further, this report should inform and guide the Environmental Assessment Practitioner (EAP) and regulatory authorities, enabling informed decision making, as to the soil resources of the proposed project.

1.2 Project Area

The extent of the property/development footprint is referred to as the project area. A map of the project area and buffered area in relation to the local region is presented in Figure 1-1. A map illustrating the proposed layout to be assessed is presented in Figure 1-2. The surrounding land uses include natural veld, grazing (livestock), waterbodies and residential area.

*

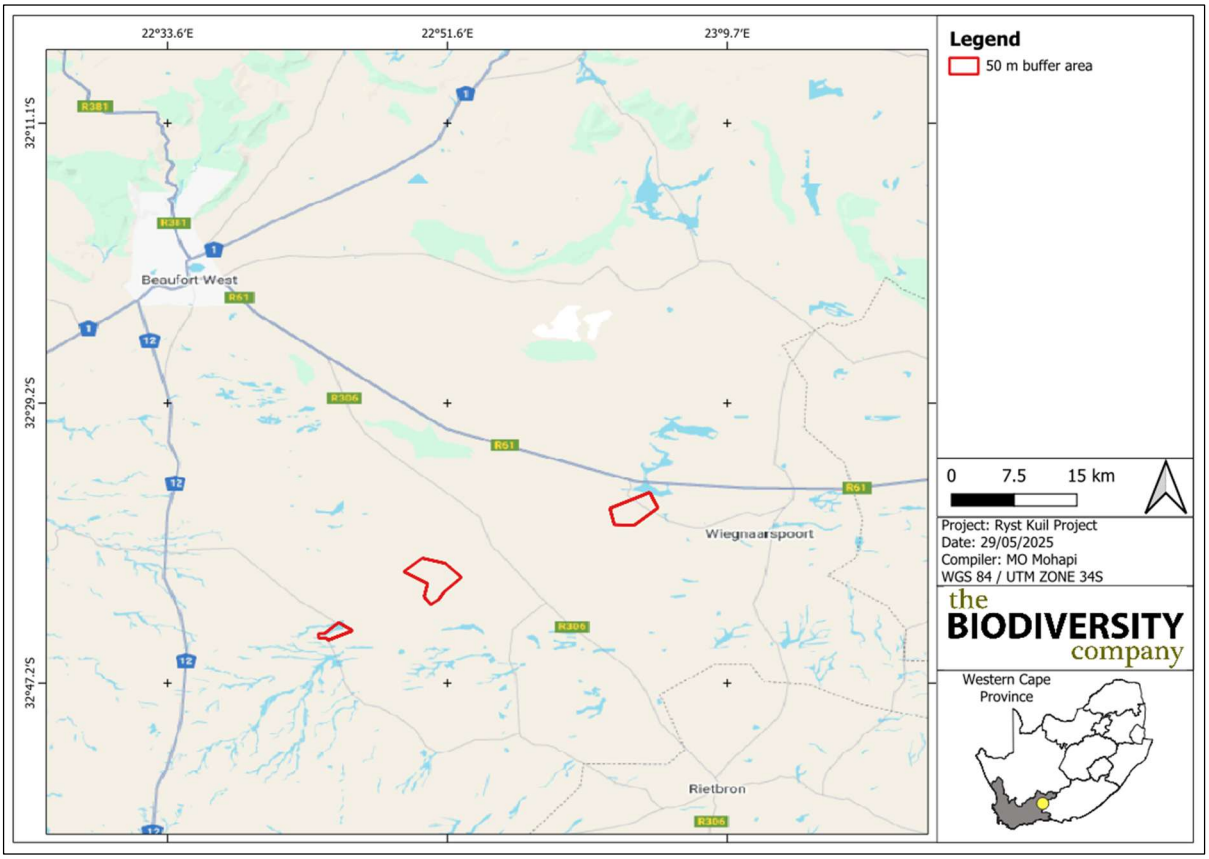


Figure 1-1 Spatial context of the proposed development

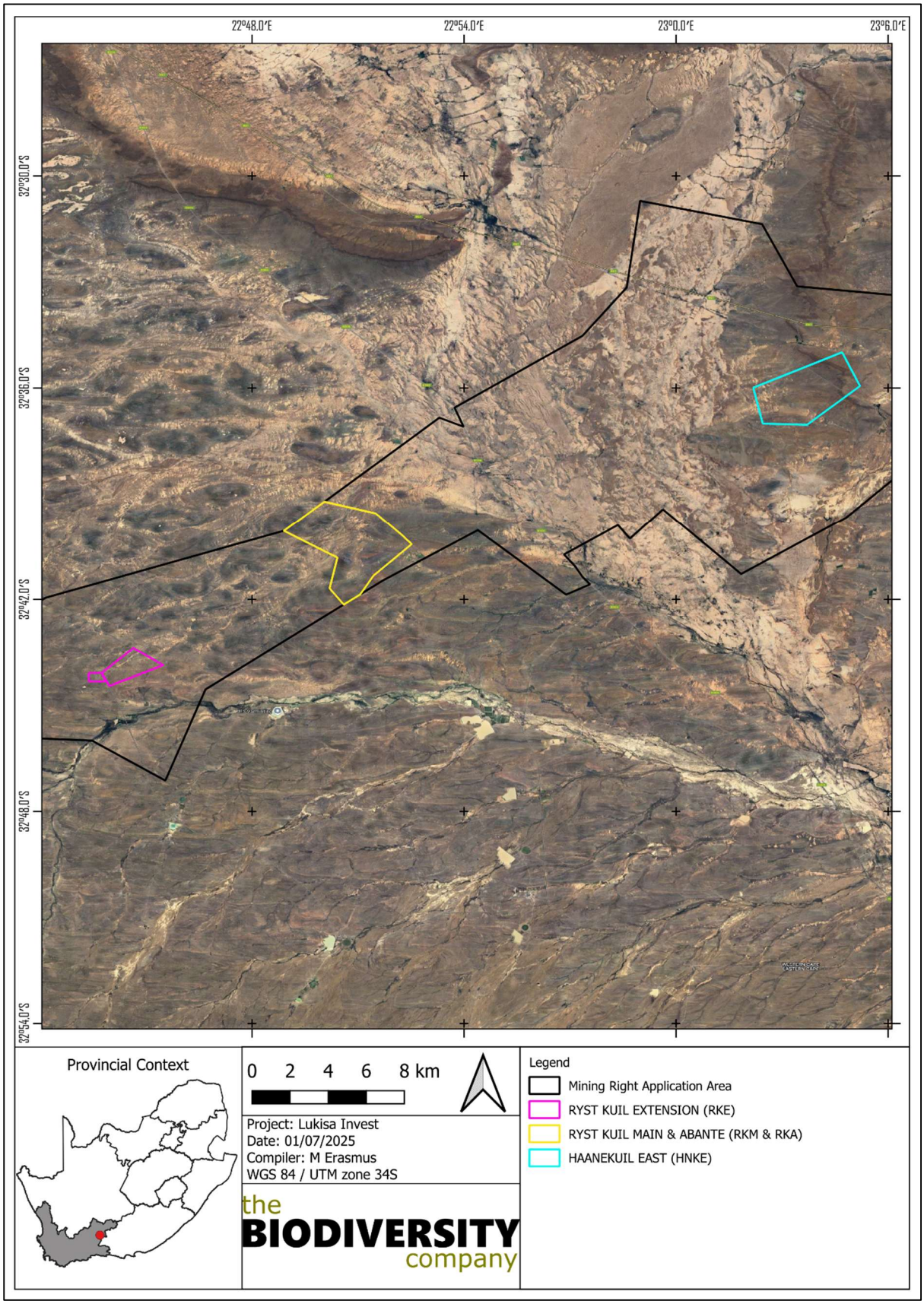


Figure 1-2 The proposed project on a local scale

1.3 Project Description

1.3.1 Description of the scope of the proposed overall activity

1.3.1.1 Listed and specified activities

Error! Reference source not found. shows the location, and area (hectares) as far as possible of the listed activities and amended infrastructure which can be seen in **Error! Reference source not found.** to Figure 1-7.

Table 1-1 A list of key legislative requirements

NAME OF ACTIVITY (All activities including activities not listed)	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
Ryst Kuil 351 RD ptn RE: Central Processing Plant (CPP)			
Land use: Agriculture to Mining	7251,9003 Ha	X	GN R983 Activity 28
Chemicals at the CPP - Sulphuric Acid (24 634t) - Pyrolusite (1080t) - Flocculant (66t) - Alamine (10m³) - Isodecanol (10m³) - Kerosene (54m³) - Sodium Carbonite (106t) - Ammonium Hydroxide (148t) - Burnt Lime (1038t) - Diesel (~75m³) - Oil (~25m³) - Hydraulic fluid (tbd)	Combined >500m³(tbd)	X	GN R984 Activity 4
CPP; TSF	217ha	X	GN R984 Activity 15 NWA S21g
Mining and mining related infrastructure: Open pit and underground operations CPP, TSF, Milling, Crushing	217 Ha	X	GN R983 Activity 12 GN R983 Activity 19 GN R984 Activity 15 GN R984 Activity 17 NWA S21j, S21a, S21g
Beneficiation plant	24Ha	X	GN R984 Activity 6 GN R984 Activity 21 GNR893 Category 4.1
Tailings Stockpile	193ha	X	GN R984 Activity 15 GN R984 Activity 6 GN R 632 & GN R633 GN R921 Category B(11) NWA S21g
ROM Stockpiles;	51ha	X	GN R984 Activity 15 GN R984 Activity 6 GN R921 Category B(11) NWA S21g
Water storage-reservoir; silt traps; Pollution control dam.	Volumes t.b.d	X	GN R983 Activity 12 GN R921 Category B(11) NWA: S21 a, b, g
Haul road (Mining operation not for public use)		X	GN R984 Activity 15 GN R984 activity 17

			GN R983 activity 19 GN R 985 activity 4
Ryst Kuil (351 RD Ptn 2) pit complex (RKA): Excavation, blasting, loading hauling, Equipment storage, berms, crushing.			
Land use: Agriculture to Mining	698,2151Ha	X	GN R983 Activity 28
Pit RKA1; RKA 2; RKA 3; RKA 4; RKA 5,	2.8ha; 46.72ha; 3.9ha; 2.8 ha; 3.1ha	x	GN R984 Activity 15 GN R 983 activity 21 GN R 984 activity 15 GN R 984 activity 17 GN R 984 activity 21
Back fill of most pits	~53ha	X	GN R984 Activity 6 NWA S21g
3 x stockpiles	19.5; 6.4; 3.5ha	X	GN R984 Activity 6 GN R921 Category B(11)
Haul road (Mining operation not for public use)		X	GN R984 activity 17 GN R983 activity 19 GN R 985 activity 4
Kat Doorn Kuil ptn RE: (RKM): Excavation, blasting, loading hauling, Equipment storage, berms, crushing.			
Land use: Agriculture to Mining	6033,6398 Ha	X	GN R983 Activity 28
Pit RKM1; RKM 2; RKM 3	17.5ha; 7.4ha; 6.5ha;	x	GN R 983 activity 21 GN R 984 activity 15 GN R 984 activity 17 GN R 984 activity 21
Back fill of most pits	~24ha	X	GN R984 Activity 6 NWA S21g
1 x stockpiles	36.8ha	X	GN R984 Activity 15 GN R984 Activity 6 GN R921 Category B(11)
Haul road (Mining operation not for public use)		X	GN R984 activity 17 GN R983 activity 19 GN R 985 activity 4
Kant Kraal ptn RE: (RKE): Excavation, blasting, loading hauling, Equipment storage, berms, crushing.			
Land use: Agriculture to Mining	6905,8035 Ha	X	GN R983 Activity 28
Pit RKE1; RKE 2; RKE3; RKE4; RKE5; RKE6; RKE7; RKE8; RKE9	2.2; 2.7; 3.6; 3.2; 8.2; 3.4; 10.2; 5.5; 2.4	x	GN R 983 activity 21 GN R 984 activity 15 GN R 984 activity 17 GN R 984 activity 21
Back fill of most pits	~35ha	X	GN R984 Activity 6 NWA S21g
5 x stockpiles	9.3ha; 5.6ha; 4.2ha; 13ha; 13ha.	X	GN R984 Activity 15 GN R984 Activity 6 GN R921 Category B(11) NWA S21g
Haul road (Mining operation not for public use)		X	GN R984 activity 17 GN R983 activity 19 GN R 985 activity 4
Haanekuil ptn 7: (HNK):): Excavation, blasting, loading hauling, Equipment storage, berms, crushing.			
Land use: Agriculture to Mining	5572,09 Ha	X	GN R983 Activity 28
Pit HNK3;	14.8ha;		GN R 983 activity 21

HNK6; HNK7; HNK8; HNK9; HNK10; HNK11; HNK12; HNK13; HNK14; HNK15; HNK16; HNK17,	2.1ha; 2.2ha; 3.9ha; 8ha; 2.1ha; 3.4ha; 2.3ha; 4.4ha; 2.3ha; 5.7ha; 2.2ha; 2.1ha;	X	GN R 984 activity 15 GN R 984 activity 17 GN R 984 activity 21
Stockpiles	52.3ha	X	GN R984 Activity 6 GN R921 Category B(11) NWA S21g
Back fill of most pits	~57ha	X	GN R984 Activity 6 NWA S21g
Haul road (Mining operation not for public use)		X	GN R984 activity 17 GN R983 activity 19 GN R 985 activity 4
Haanekuil ptn 7 & RE: (HNK): Excavation, blasting, loading hauling, Equipment storage, berms, crushing.			
Pit HNK1; HNK2,	2.7; 2.2	X	GN R983 activity 21 GN R983 Activity 27 GN R 984 activity 17 GN R 984 activity 21
Back fill of most pits	~4ha	X	GN R984 Activity 6 NWA S21g
Haul road (Mining operation not for public use)		X	GN R984 activity 17 GN R983 activity 19 GN R 985 activity 4
Haanekuil ptn RE: (HNK): Excavation, blasting, loading hauling, Equipment storage, berms, crushing.			
Land use: Agriculture to Mining	4007,9273Ha	X	GN R983 Activity 28
Pit HNK4; HNK5	1.8; 1.9;	X	GN R 983 activity 21 GN R983 Activity 27 GN R 984 activity 17 GN R 984 activity 21
Back fill of pits	~3ha	X	GN R984 Activity 6 NWA S21g
Stockpile	3	X	GN R984 Activity 6 GN R921 Category B(11)
Haul road (Mining operation not for public use)		X	GN R984 activity 17 GN R983 activity 19 GN R 985 activity 4
Transportation road			
Development (4.5m x 51.5km) and widening (by 1.5m) and upgrade (9.9km) of tracks to roads	24.66 ha	X	GN R983 activity 12 GN R983 activity 19 GN R 985 activity 4
Bridges/culverts crossing drainage lines	>100m²	X	GN R983 activity 12 NWA: S21 c & i.

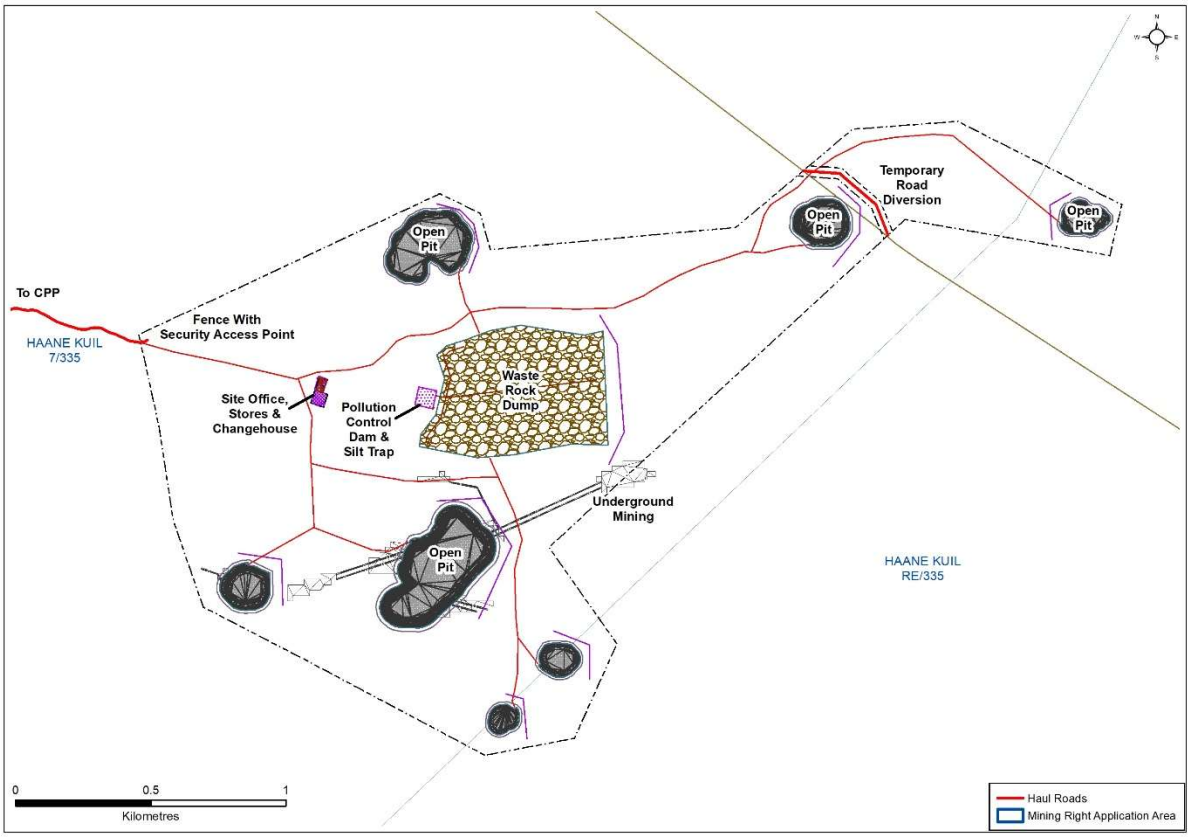


Figure 1-3 Map illustrating the Hannekuil project layout.

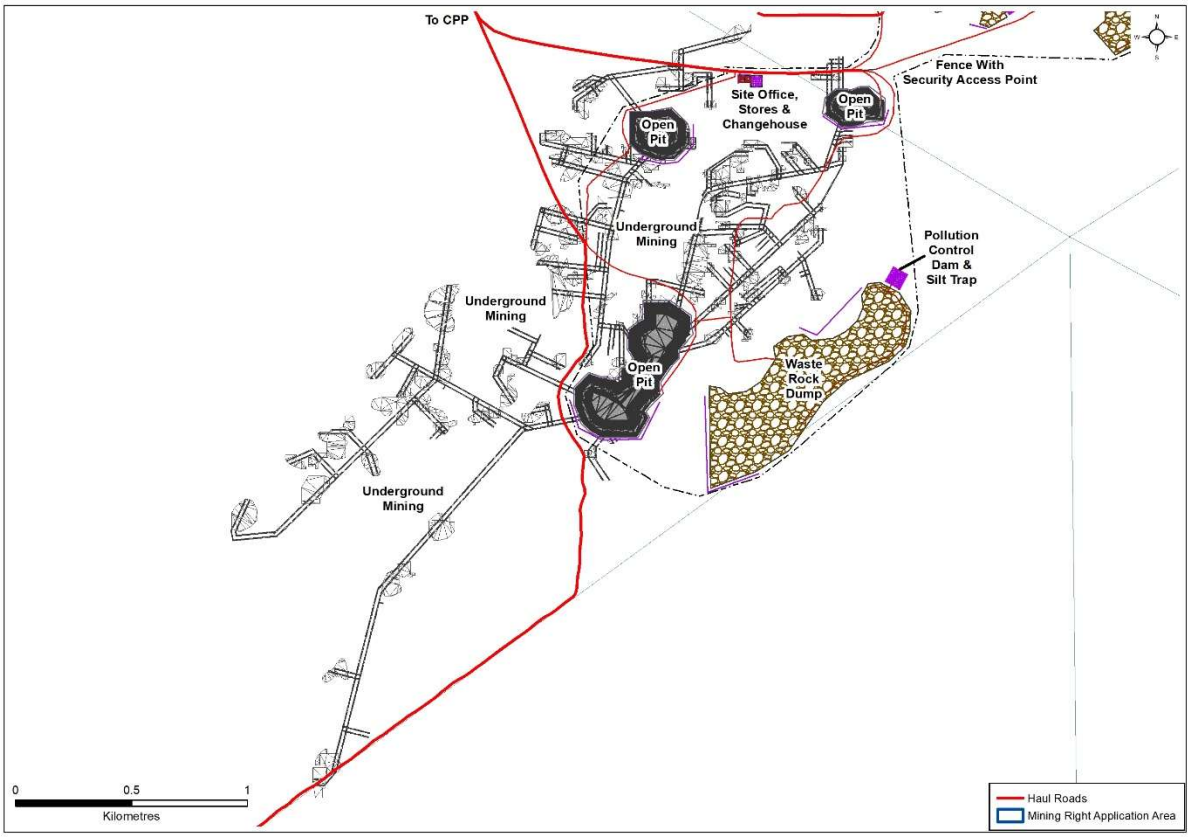


Figure 1-4 Map illustrating the Ryst Kuil Main (RKM) project layout.

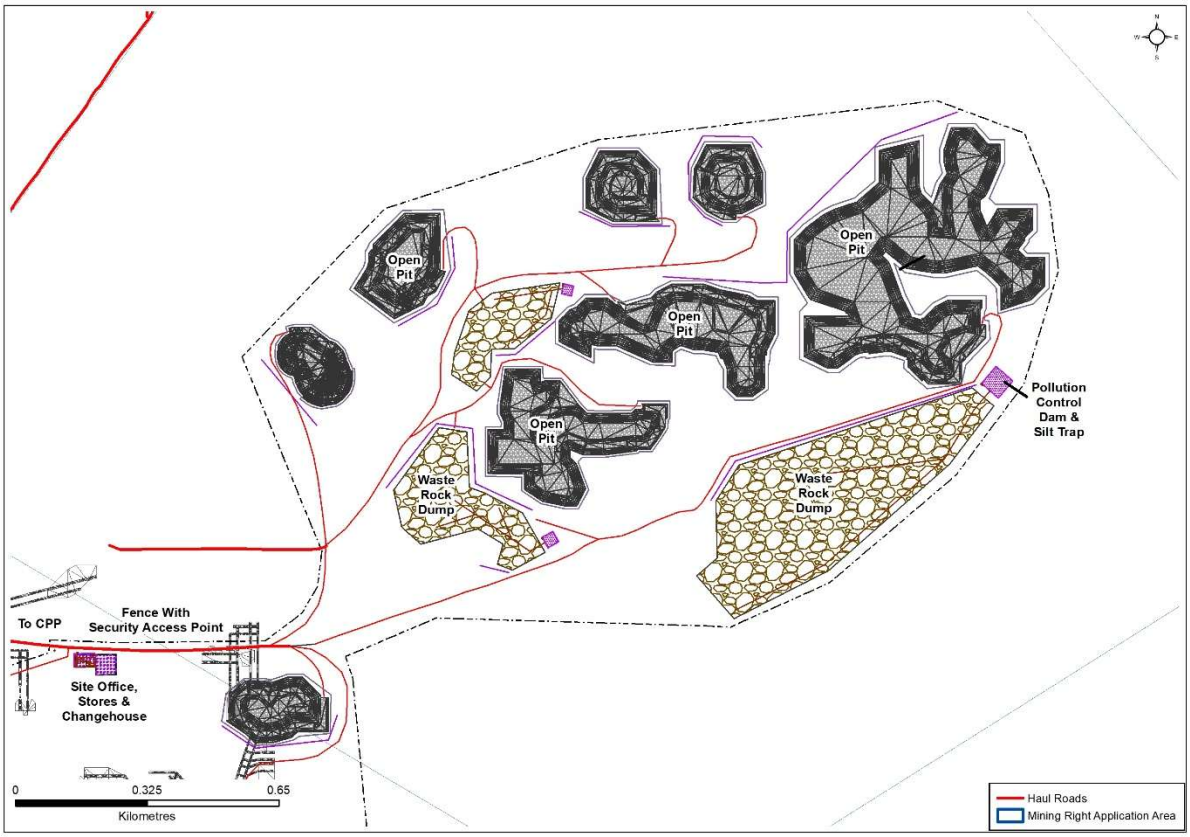


Figure 1-5 Map illustrating the Ryst Kuil Abante (RKA) project layout.

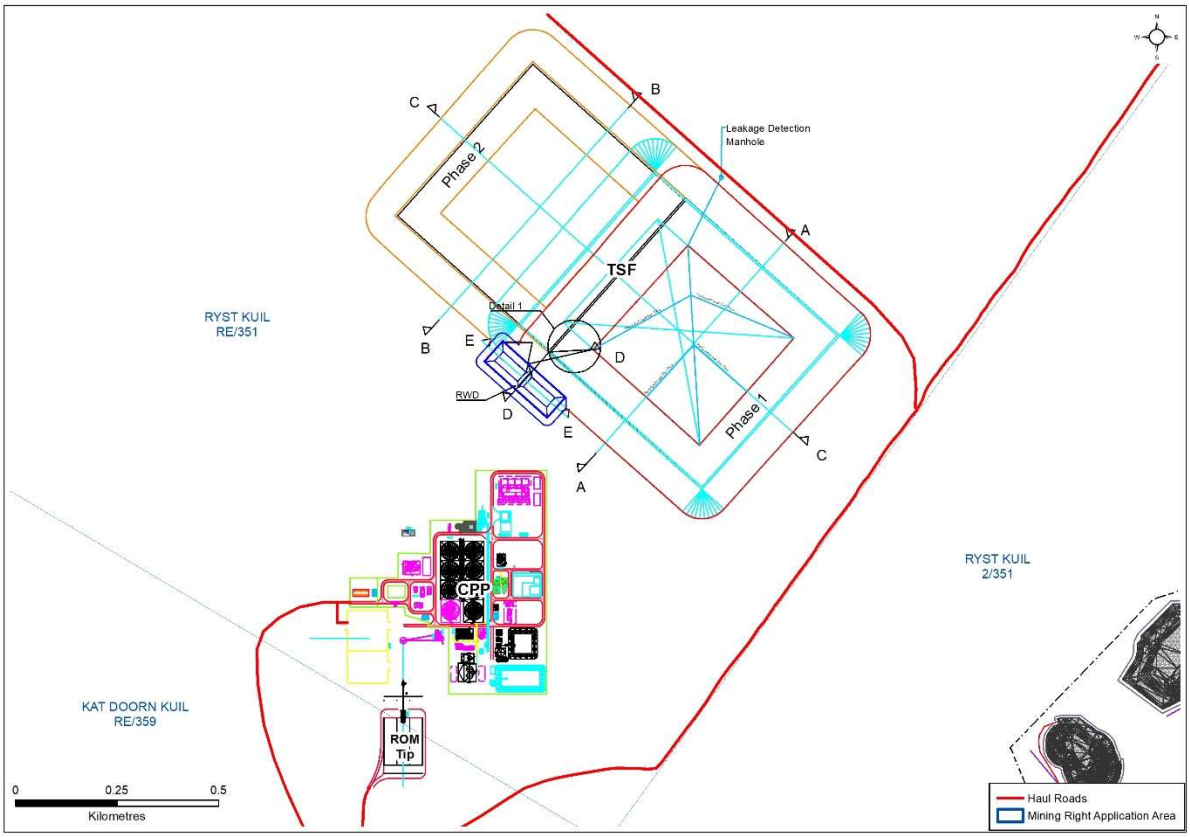


Figure 1-6 Map illustrating the RKA Tailings Storage Facility (TSF) and CPP project layout.

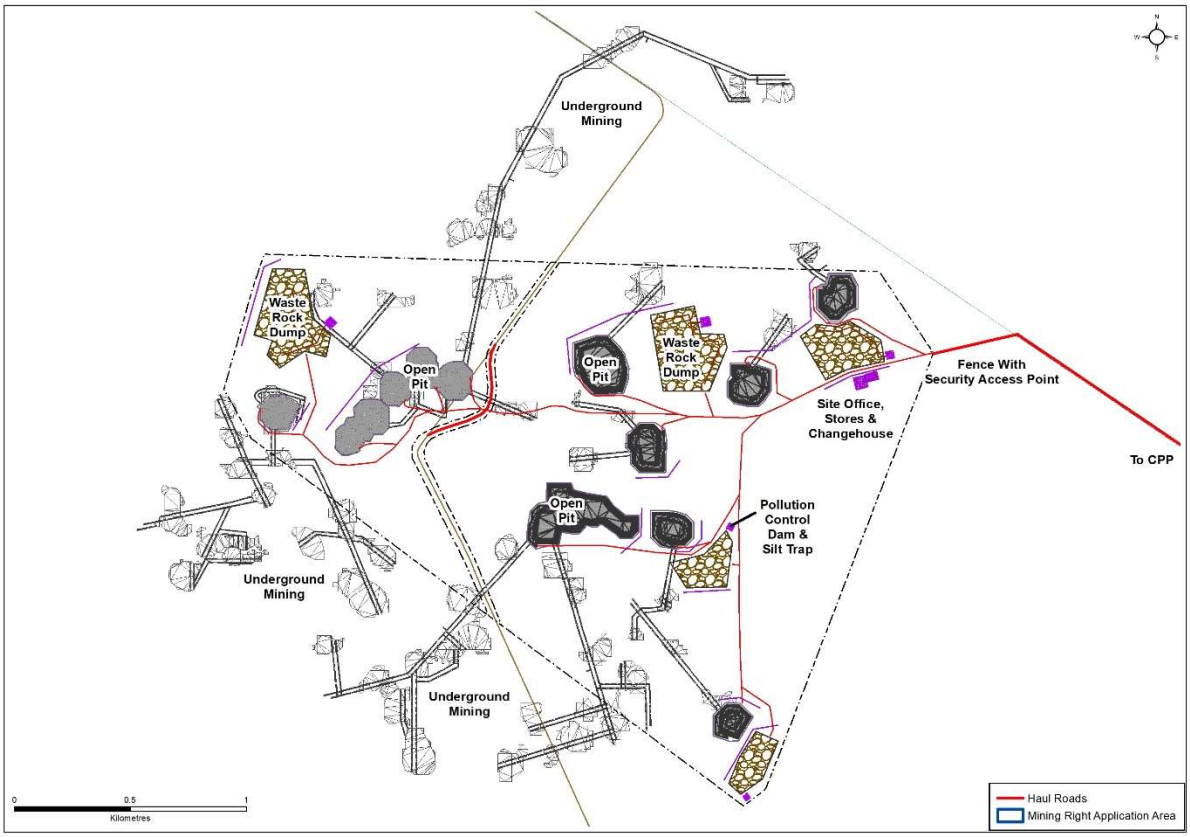


Figure 1-7 Map illustrating the RKE project layout.

1.4 Scope of Work

In addition to the requirements stipulated in GNR 320, the following Terms of Reference apply to the Agricultural Compliance Statement:

- Ensure a thorough assessment, which includes both the desktop assessment of databases and aerial photography; a description of the on-site verification of the agricultural potential of the area; and the soil forms present in the development area;
- Identify and assess potential impacts on both agricultural potential and soil resulting from the proposed project;
- Identify and describe potential cumulative soil, agricultural potential and land capability impacts resulting from the proposed project in relation to proposed and existing developments in the surrounding area; and
- Recommend mitigation, management, and monitoring measures, to minimise impacts and/or optimise benefits associated with the proposed project.

1.5 Assumptions and Limitations

The following aspects were considered as limitations;

- Only the slopes affected by the proposed development have been assessed;
- It has been assumed that the extent of the development area provided by the responsible party is accurate;
- Soil form delineations and classifications from Steenkamp (2016) have been considered for the baseline of this assessment. These were re-assed for validation of the findings;
- The GPS used for ground truthing is accurate to within five meters. Therefore, the soil and the observation site's delineation plotted digitally may be offset by up to five meters to either side; and
- No heavy metals have been assessed, nor fertility been analysed for the relevant classified soils.

1.6 Key Legislative Requirements

The report follows the protocols as stipulated for agricultural assessment in Government Notice 320 of 2020 (GNR 320). This Notice provides the procedures and minimum criteria for reporting in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (No. 107 of 1998) (NEMA).

The above mentioned are supported by additional legislation that aims to manage the impact of development on the environment and the natural resource base of the country. Related legislation to this effect includes:

- Conservation of Agricultural Resources Act (Act 43 of 1983);
- Environment Conservation Act (Act 73 of 1989);
- National Environmental Management Act (Act 107 of 1998); and

- National Water Act (Act 36 of 1998).

1.7 Legislative Framework

In line with the protocol for the specialist assessment and minimum report content requirements for environmental impacts on soil and agricultural assessment as per the Government Notice 320 published 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" – the following has been assumed:

- An applicant intending to undertake an activity identified in the scope of this protocol on a site identified on the screening tool as being of:
    - "Low and Medium sensitivity" for agriculture, must submit an Agricultural Compliance Statement.
    - If information gathered from the site sensitivity verification differs from the designation of "very high" or "high" agricultural sensitivity, and it is found to be of a "medium" or "low" sensitivity an Agricultural Compliance Statement must be submitted.

An Agricultural Compliance Statement must contain the information as presented in Table 1-2 below.

Table 1-2 Agricultural Compliance Statement information requirements as per the relevant protocol, including the location of the information within this report

Information to be Included (as per GN 320, 20 March 2020)	Report Section
details and relevant expertise as well as the SACNASP registration number of the soil scientist or agricultural specialist preparing the statement including a curriculum vitae	Page i, Appendix C
a signed statement of independence by the specialist	Appendix B
a map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the screening tool	Section 3.3
confirmation from the specialist that all reasonable measures have been taken through micro-sitting to avoid or minimise fragmentation and disturbance of agricultural activities	Section 6
a substantiated statement from the soil scientist or agricultural specialist on the acceptability, or not, of the proposed development and a recommendation on the approval, or not, of the proposed development	Section 6.2
any conditions to which this statement is subjected	Section 6.3
where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr	Section 5
a description of the assumptions made and any uncertainties or gaps in knowledge or data	Section 1.5

A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

2 Fieldwork

Field assessment for the proposed project area was conducted on the 19th to the 23rd of May 2025, to determine the soil forms and current land uses within the assessed area (Figure 2-1).

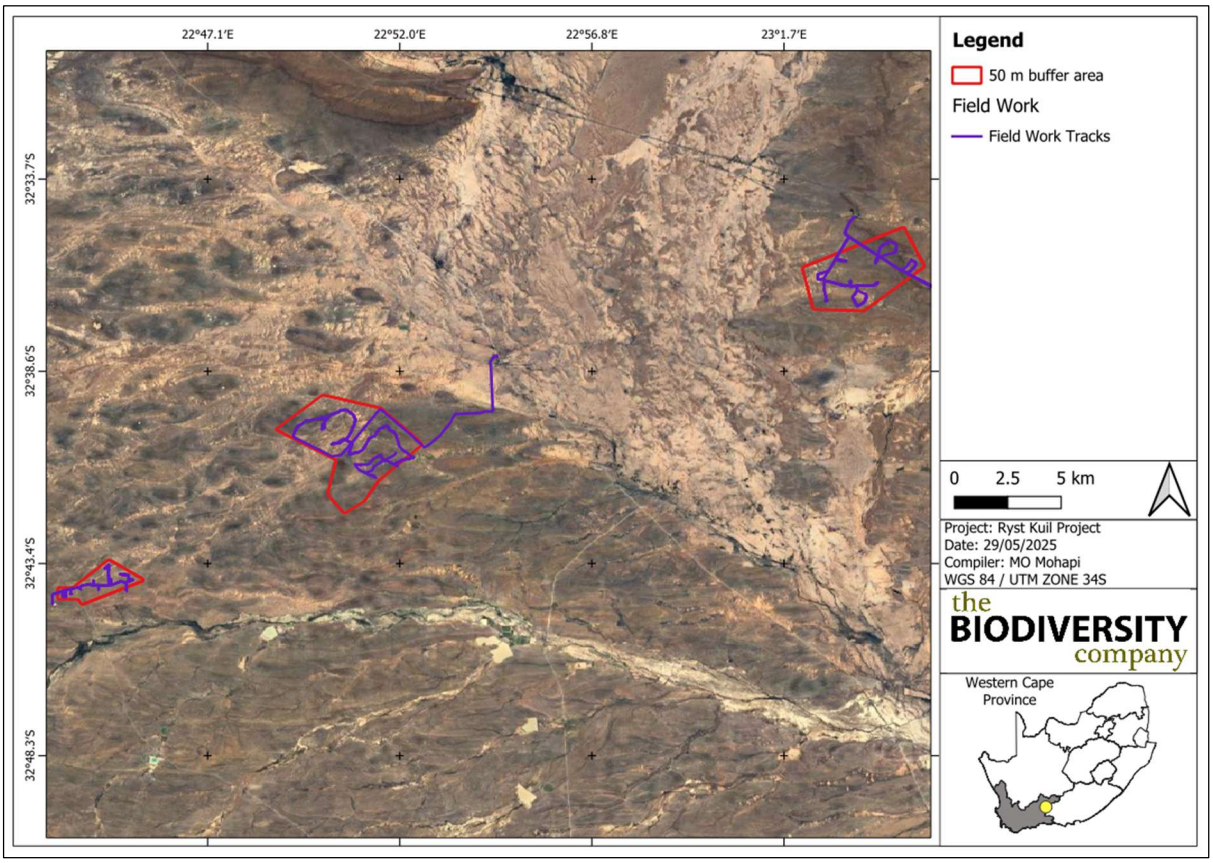


Figure 2-1 Map illustrating the check points of the field survey

3 Results and Discussion

3.1 Desktop Information

3.1.1 Climate

The project area falls within the Gamka Karoo vegetation. The area is considered to be one of the most arid regions in the Nama Karoo Biome. The area experiences summer and autumn rainfall. The overall mean average precipitation (MAP) of the proposed project area ranges from 100 to 240 mm. The maximum and minimum temperatures of the area 38.7°C and -3.2°C (Mucina & Rutherford, 2006; Figure 3-1).

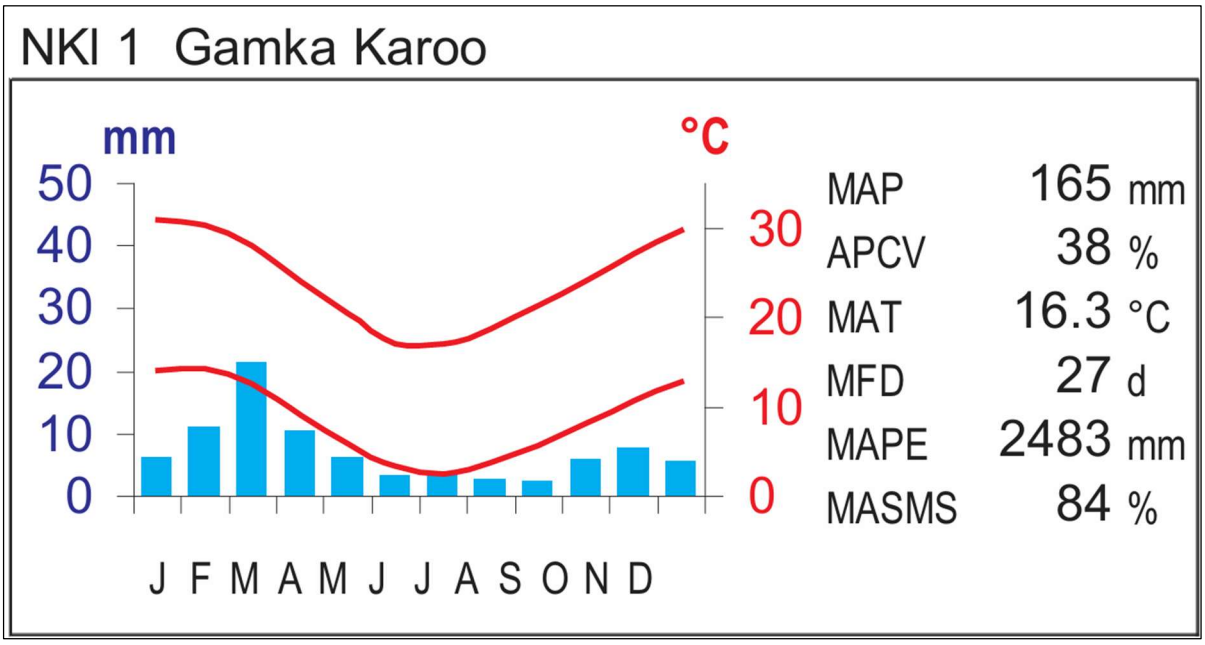


Figure 3-1 Summarised climate for the region (Mucina & Rutherford, 2006)

3.1.2 Geology & Soils

The geology of the area includes the mudstone and sandstones of the Beaufort Group (Adelaide Subgroup). The project area is also underlain by Ecca (Fort Brown Formation) shales, which weathers into very shallow and stony soils that are classified as Glenrosa and Mispah soil forms. The shallow Mispah and Glenrosa soils are from the Fc land type.

According to the land type database (Land Type Survey Staff, 1972 - 2006) the assessment area to be focused on mainly falls within the Ag 8, Fc 383, Fc 389, Fc 410 and Ia 43 land type (Figure 3-2). The Ag 8 land type comprises of Mispah, Hutton, Glenrosa and Swartland soil forms, with the occurrence of other soils occurring throughout the terrain, following the South Africa soil classification working group (2018). The Ag land type is also characterised by freely drained red and yellow apedal soils, with the depth less than 300 mm and high base status. The Fc 383 land type is predominated by Mispah, Glenrosa, Hutton and Dundee soil forms; The Fc 389 land type is predominated by Mispah, Glenrosa, Oakleaf and Hutton soil forms; The Fc 410 land type is predominated by Mispah, Hutton, Glenrosa, Swartland, Shortlands and Oakleaf soil forms, with the occurrence of other soils occurring throughout the terrain, following the South Africa soil classification working group (2018). The Fc land types are also characterised by Glenrosa and Mispah soil forms with the presence of lime in the entire landscape. The Ia 43 land type comprises of Oakleaf, Hutton, Valsrivier and Mispah soil forms, with the occurrence of other soils occurring throughout the terrain, following the South Africa soil classification working group (2018). The Ia land type is also characterised by miscellaneous land classes, with an undifferentiated deep deposit. The land terrain units for the featured land types and the expected soils are illustrated below.

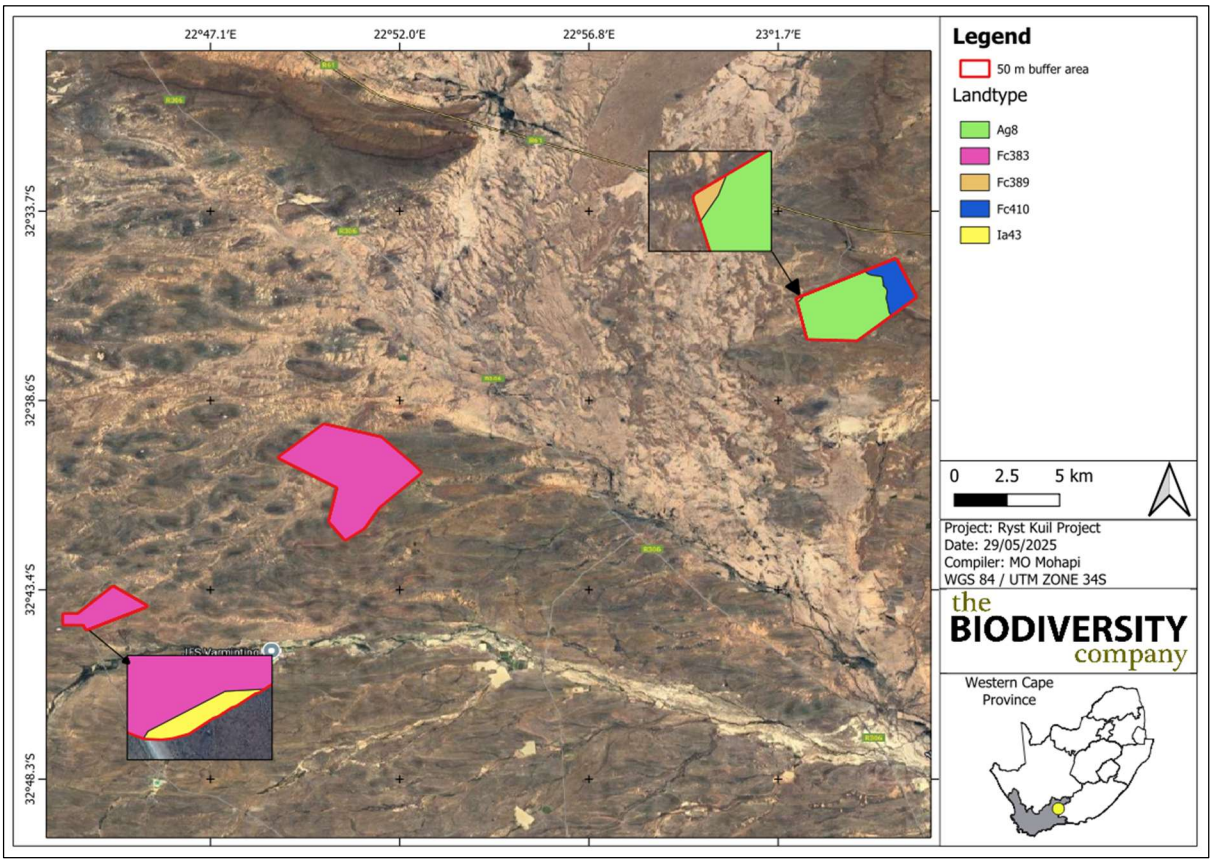


Figure 3-2 Land type associated with the proposed project area

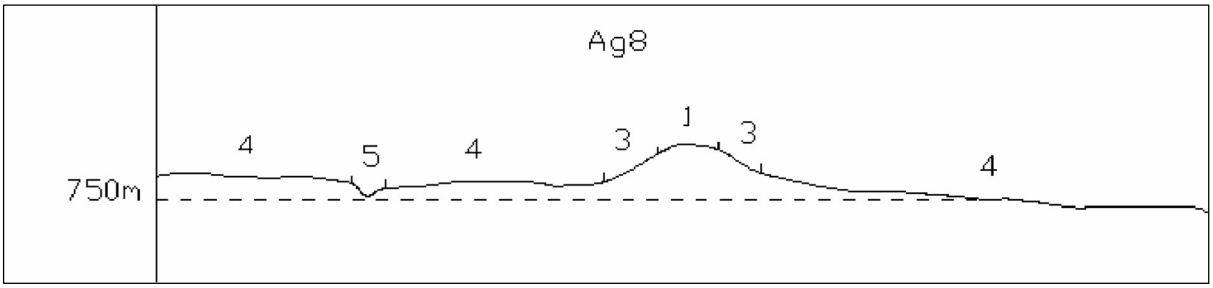


Figure 3-3 Illustration of land type Ag 8 terrain units (Land Type Survey Staff, 1972 – 2006)

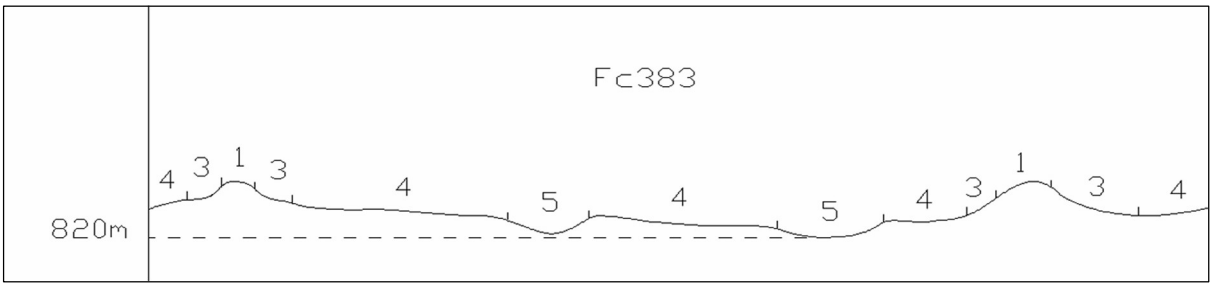


Figure 3-4 Illustration of land type Fc383 terrain units (Land Type Survey Staff, 1972 – 2006)

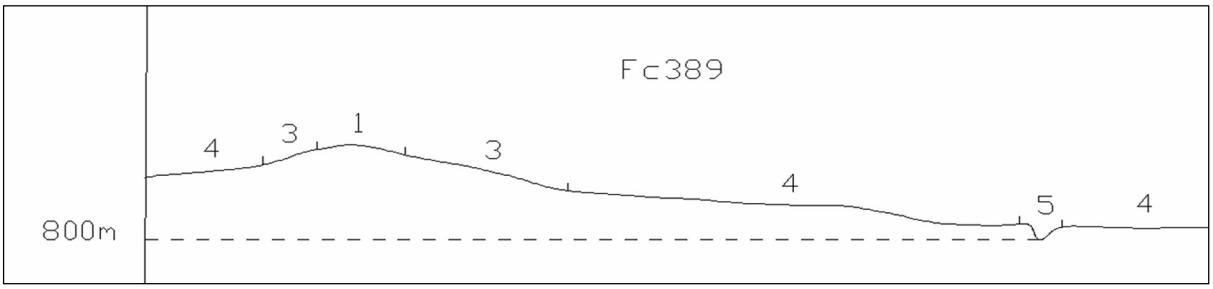


Figure 3-5 Illustration of land type Fc 389 terrain units (Land Type Survey Staff, 1972 – 2006)

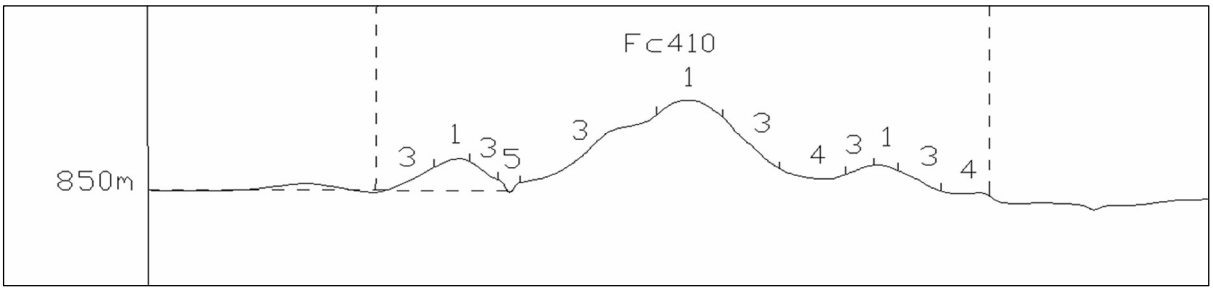


Figure 3-6 Illustration of land type Fc 410 terrain units (Land Type Survey Staff, 1972 – 2006)

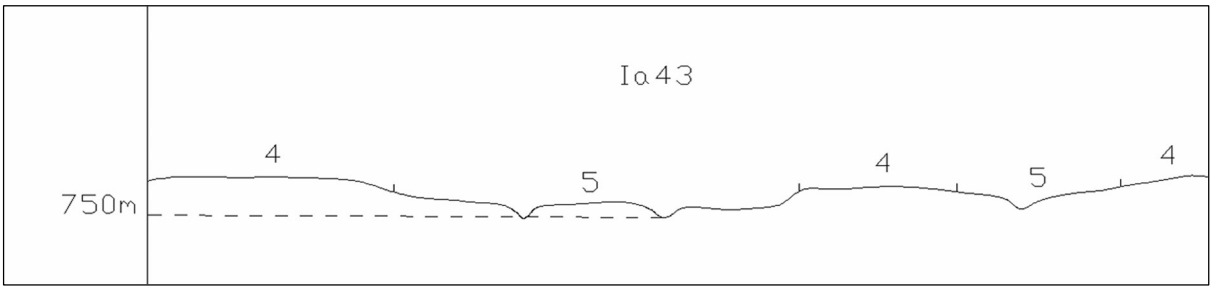


Figure 3-7 Illustration of land type Ia 43 terrain units (Land Type Survey Staff, 1972 – 2006)

Table 3-1 Soil expected at the respective terrain units within the Ag 8 land type (Land Type Survey Staff, 1972 – 2006)

Terrain Units							
1 (2%)		**3 (8%)**		**4 (75%)**		**5 (15%)**	
Bare rock	75%	Bare rock	80%	Hutton	45%	Oakleaf	60%
Glenrosa	15%	Glenrosa	10%	Glenrosa	25%	Hutton	40%
Mispah	10%	Mispah	10%	Mispah	10%		
				Swartland	10%		
				Bare rock	5%		
				Oakleaf	5%		

Table 3-2 Soil expected at the respective terrain units within the Fc 383 land type (Land Type Survey Staff, 1972 – 2006)

Terrain Units							
1 (3%)		**3 (5%)**		**4 (80%)**		**5 (12%)**	
Mispah	60%	Mispah	40%	Mispah	45%	Oakleaf	80%
Bare rock	30%	Bare rock	30%	Glenrosa	35%	Dundee	15%
Glenrosa	10%	Glenrosa	20%	Hutton	10%	Hutton	5%
		Hutton	10%	Bare rock	5%		
				Oakleaf	5%		

Table 3-3 Soil expected at the respective terrain units within the Fc 389 land type (Land Type Survey Staff, 1972 – 2006)

Terrain Units							
1 (2%)		**3 (4%)**		**4 (74%)**		**5 (20%)**	
Mispah	70%	Mispah	70%	Mispah	40%	Oakleaf	80%
Bare rock	20%	Bare rock	20%	Glenrosa	40%	Hutton	20%
Glenrosa	10%	Glenrosa	10%	Hutton	20%		

Table 3-4 Soil expected at the respective terrain units within the Fc 410 land type (Land Type Survey Staff, 1972 – 2006)

Terrain Units							
1 (15%)		**3 (70%)**		**4 (10%)**		**5 (5%)**	
Mispah	40%	Hutton	25%	Hutton	40%	Hutton	50%
Bare rock	30%	Bare rock	20%	Glenrosa	15%	Glenrosa	10%
Hutton	20%	Mispah	20%	Swartland	15%	Swartland	10%
Glenrosa	10%	Glenrosa	15%	Bare rock	10%	Shortlands	10%
		Swartland	10%	Shortlands	10%	Oakleaf	10%
		Shortlands	10%	Mispah	5%	Mispah	5%
				Oakleaf	5%	Bare rock	5%

Table 3-5 Soil expected at the respective terrain units within the Ia 43 land type (Land Type Survey Staff, 1972 – 2006)

Terrain Units			
4 (10%)		**5 (90%)**	
Oakleaf	25%	Oakleaf	80%
Hutton	20%	Hutton	8%
Valsrivier	20%	Valsrivier	5%
Mispah	20%	Dundee	5%
Bare rock	5%	Bare rock	2%
Swartland	5%		
Sterkspruit	5%		

3.2 Desktop Review

The following is summarised from: Steenekamp, P.I. (2016). *Soil, Land Capability and Land Use Specialist Study – Tasman RSA Mines Karoo Uranium Project*. Rehab Green Monitoring Consultants CC, prepared for Ferret Mining & Environmental Services (Pty) Ltd. 21 January 2016.

The Eastern Block Application Area, specifically the farms Kantkraal, Rystkuil, and Hanekuil is located within the arid Karoo region and is characterised by predominantly very shallow soils of low agricultural potential, primarily used for extensive sheep grazing. According to Steenekamp (2016), the area is dominated by Mispah, Glenrosa, Coega, Swartland, Valsrivier, and Augrabies soil forms. These soils typically exhibit loamy sand textures, limited effective depth (often <300 mm), and are underlain by hard rock or calcareous materials, with minimal internal drainage and high stoniness in many areas.

On the farm Kantkraal, the proposed infrastructure is situated on Gs and Sw soil types:

- Gs: Very shallow (200–300 mm) reddish-brown loamy sands underlain by weathered rock, located on footslopes with 1–30% surface stoniness. Classified as grazing land of very low capability.
- Sw: Shallow (200–450 mm), weakly structured sandy clay loams found in dry drainage zones. These are better drained and fall under riparian zones, with slightly higher ecological value.

On the farm Rystkuil, infrastructure is largely sited on Ms and Sw soils:

- Ms: Extremely shallow (50–250 mm) loamy sand soils underlain by hard rock, found on wide, gently undulating footslopes. These soils are fragile and agriculturally limited.
- Sw soils (as above) provide marginally better potential in dry drainage areas.

On the farm Hanekuil, infrastructure intersects Gs, Ms, Ms/R, and Sw soil units:

- Ms/R: Represents complex associations of very shallow soils (0–100 mm) and exposed rock on steep rocky slopes and drainage lines, with up to 60% surface rock. These areas have very low to negligible land capability.
- The Sw soils again contribute riparian functionality but are not considered arable.

Land capability classification (Steenekamp, 2016) across the three farms confirms the predominance of grazing potential (61.9% of the Eastern Block), with riparian areas making up 27.4%, and wilderness areas 10.6%. No arable or wetland-capable soils were identified. The existing soil conditions and terrain indicate a fragile landscape with limited resilience to disturbance, where careful planning and mitigation will be essential to minimise long-term degradation.

3.3 Findings

Three (3) representative soil forms were identified within the proposed project area namely; Swartland, Glenrosa and Mispah soil forms (Figure 3-8). The proposed project area is predominated by shallow profiles such as the Mispah and Glenrosa soil forms, with the presence of physically weathering parent material, resulting into a friable soil, fractured rocks within the planes and hard rock fragments. The other areas are characterised of shallow yellow apedal soils and shallow duplex soils that are underlain by lithic subsoils and hard rocks. A marginal portion of the proposed project area was also found to be physically disturbed and with some evidence of chemical pollution due to human activities.

The Mispah soil form consists of an orthic topsoil on top of a hard rock horizon. The Glenrosa soil form consists of an orthic topsoil on top of a lithic subsoil horizon. These dominant soil forms are characterised by very restrictive and impermeable underlying horizons that inhibits root penetration, water and nutrient movements and drainage throughout the profile. Due to their restrictive morphology,

these soil forms are considered to be unproductive for agricultural purposes (crop farming) and have a low agricultural suitability.

The Swartland soil form consists of an orthic topsoil on top of a pedocutanic subsoil horizon that is underlain by lithic horizon. The Swartland soil form is characterised by a strong structure and a significant accumulation of clay material in the underlying horizons. The clay horizons restrict root development and less accessibility of nutrients to the plants. However, with proper management which include tilling, enhancing drainage and appropriate fertilization, the Swartland soil can support some crops and be used for agricultural purposes. During the site assessment, the Swartland soils were found along the drainage lines and natural veld, with no evidence of historical or active crop fields.

Lastly, the anthrosols including the Industria and Grabouw were also identified within the the general area. The Industria soils comprise of radioactive contamination with the presence of natural and anthropogenic materials. The pollution may result from mining or other human activities which may results into chemical spillages towards soil resources. The Grabouw soil form are physically disturbed soils that has soil profile material mixing due to human activities which are no longer arranged in clearly visible layers. The soils were also found along the excavated areas and compacted areas within the proposed project area. All the identified soil horizons within the proposed project area, as well as the current land uses are illustrated in Figure 3-9 and Figure 3-10, respectively.

The land capability of the proposed project area is categorised under natural veld grazing and afforestation due to the limitations restricting cultivation practices. Furthermore, due to the available arid climatic conditions, the proposed project area is suitable for natural vegetation.

Accordingly, following Smith, (2006) which the national DAFF, (2017) land capabilities protocols were further expanded from, the above-mentioned identified soil forms are restricted to land capability classes IV (i.e. Carolina and Swartland soil forms) categorised by LC 6-8 (Moderate); land capability VI (i.e. Glenrosa, Mispah and Coega soil forms) categorised by LC 1-5 (Very low to Low), and land capability VIII (i.e. Industria and Grabouw soil forms) categorised by LC 1-5 (Very low). The baseline soil land capability was aligned and compared to the National Land Capability data (DAFF, 2017). A climate capability level 8 has been assigned to the area given the low Mean Annual Precipitation (MAP) and the high Mean Annual Potential Evapotranspiration (MAPE) rates.

By using the determined land capability classes and the determined climate capability, a land potential of “L6” was calculated for areas associated with Swartland soil forms; “L7” was calculated for areas associated with Mispah and Glenrosa forms.

According to Smith (2006), the “L6” land potential level is characterised by very restrictive potential with regular and/or severe limitations due to soil, slope, temperatures, or rainfall. The “L7” land potential level is characterised by low potential with severe limitations due to soil, slope, temperature, or rainfall. The areas associated with the “L6 and L7” land potentials are considered non-arable. Therefore, the proposed project area falls predominately on non-arable land.

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

Land potential levels of the proposed area are illustrated in Figure 3-11. The identified land potential levels were used to determine the overall sensitivity of resources relevant to this assessment area.

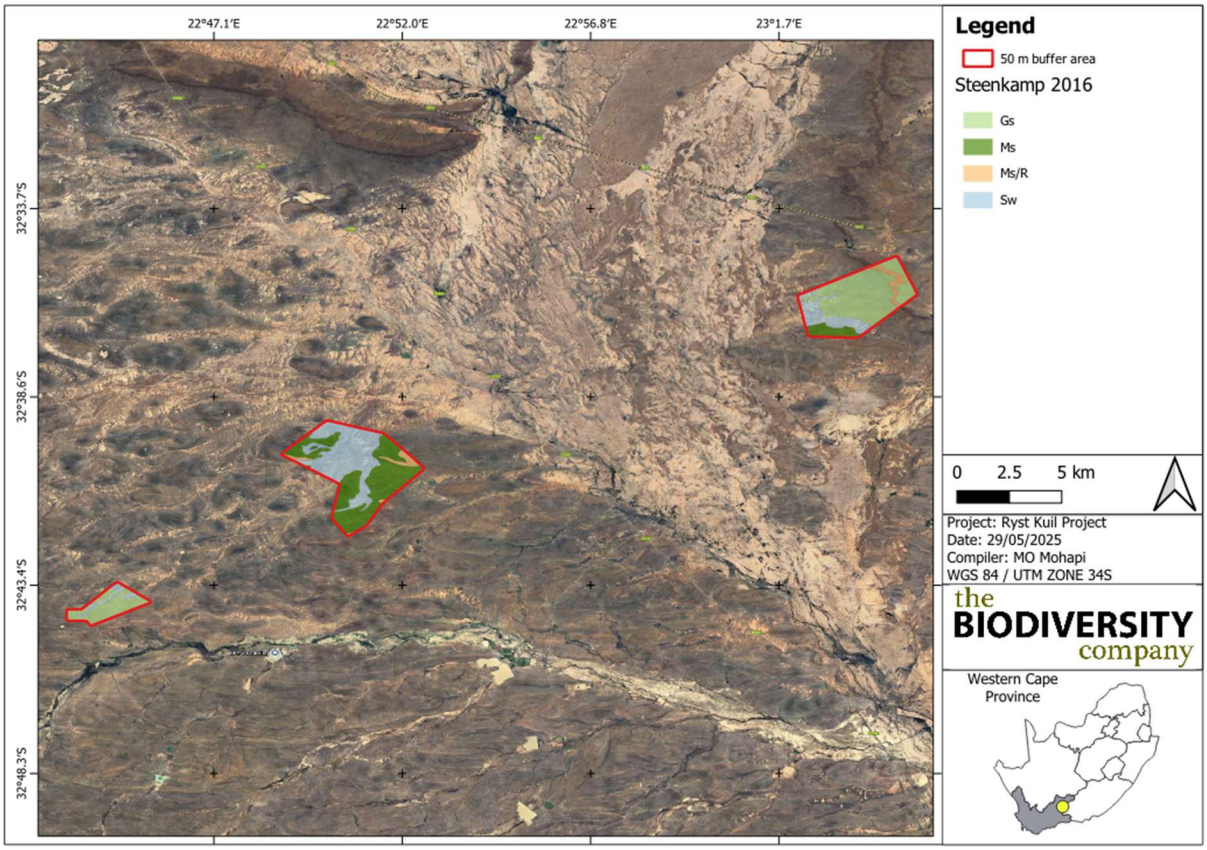


Figure 3-8 Soil forms found within the proposed project area

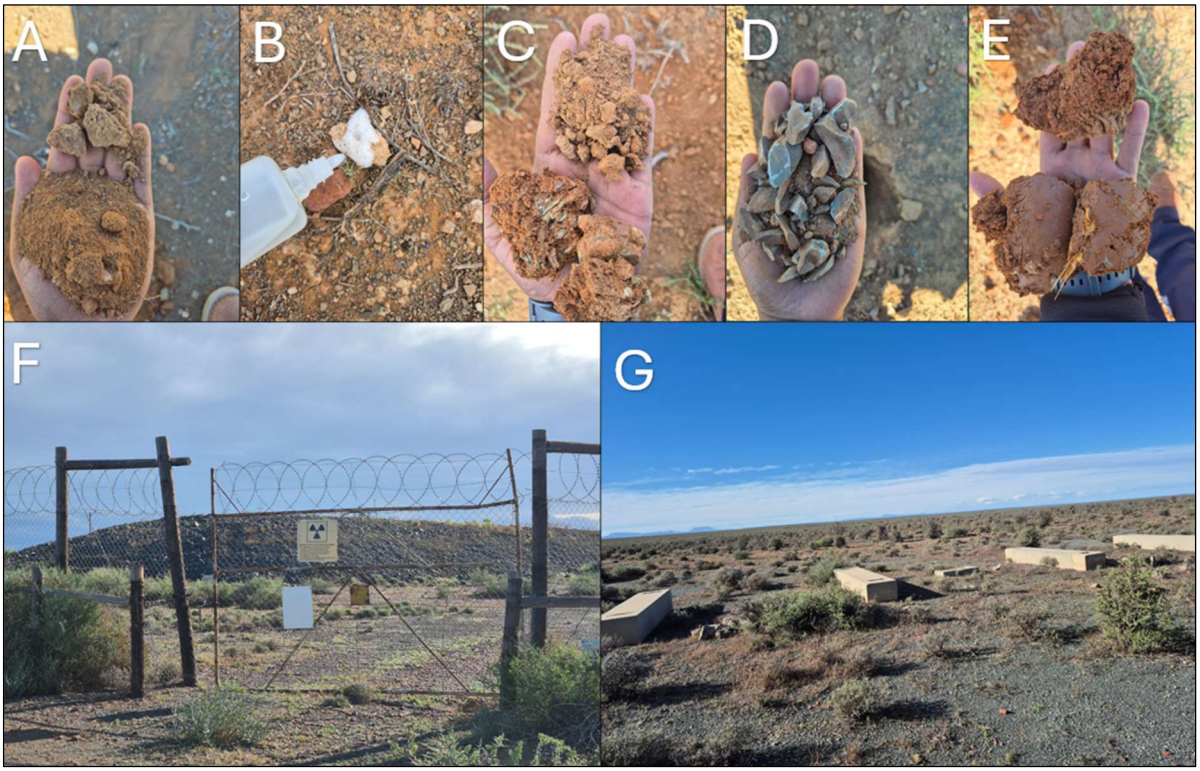


Figure 3-9 Diagnostic soil horizons identified on-site: A) Mispah soil form with exposed; B) Coega soil form; C) Gleylithic subsoil; D) Mispah soil form; E) Swartland soil form; F) Industria soil form; and G) Grabouw soil form

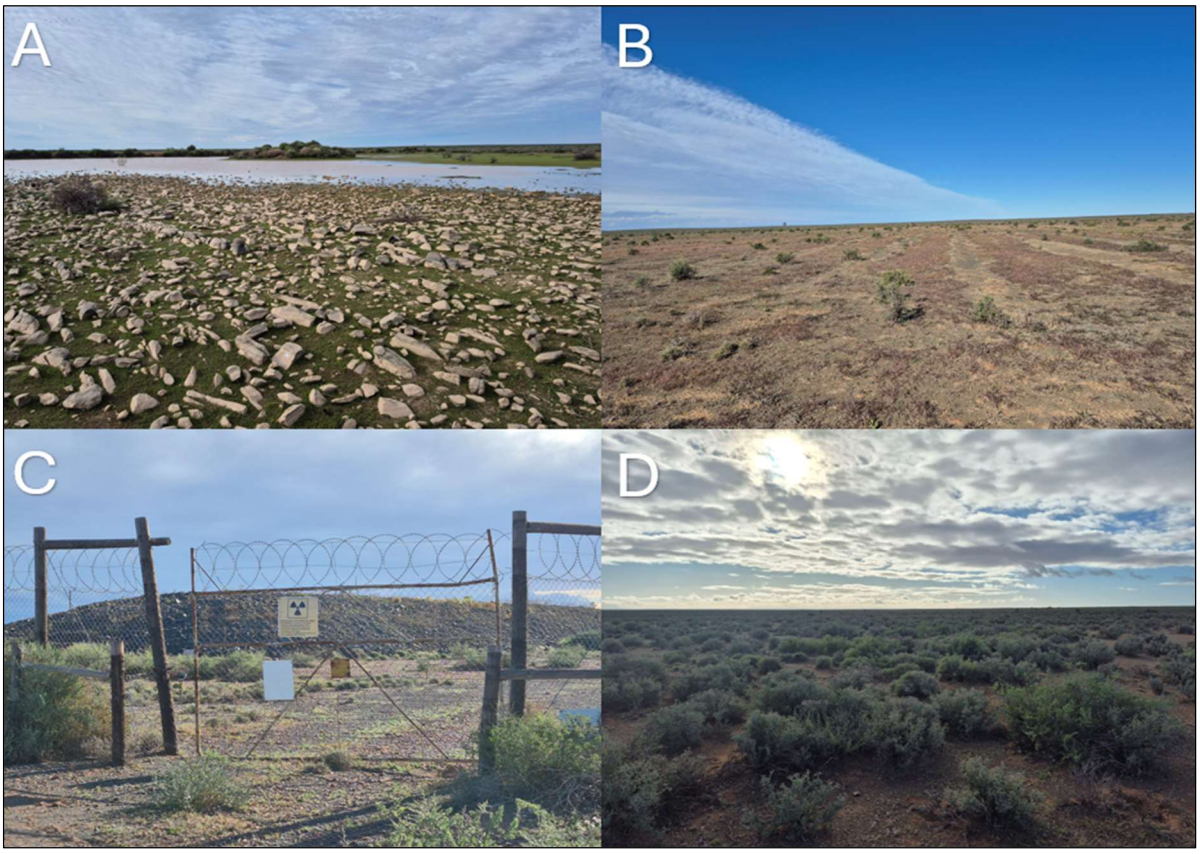


Figure 3-10 Different land uses found within the proposed project area; A) Wetland; B) Old crop field; C) Old mine; and D) Natural veld

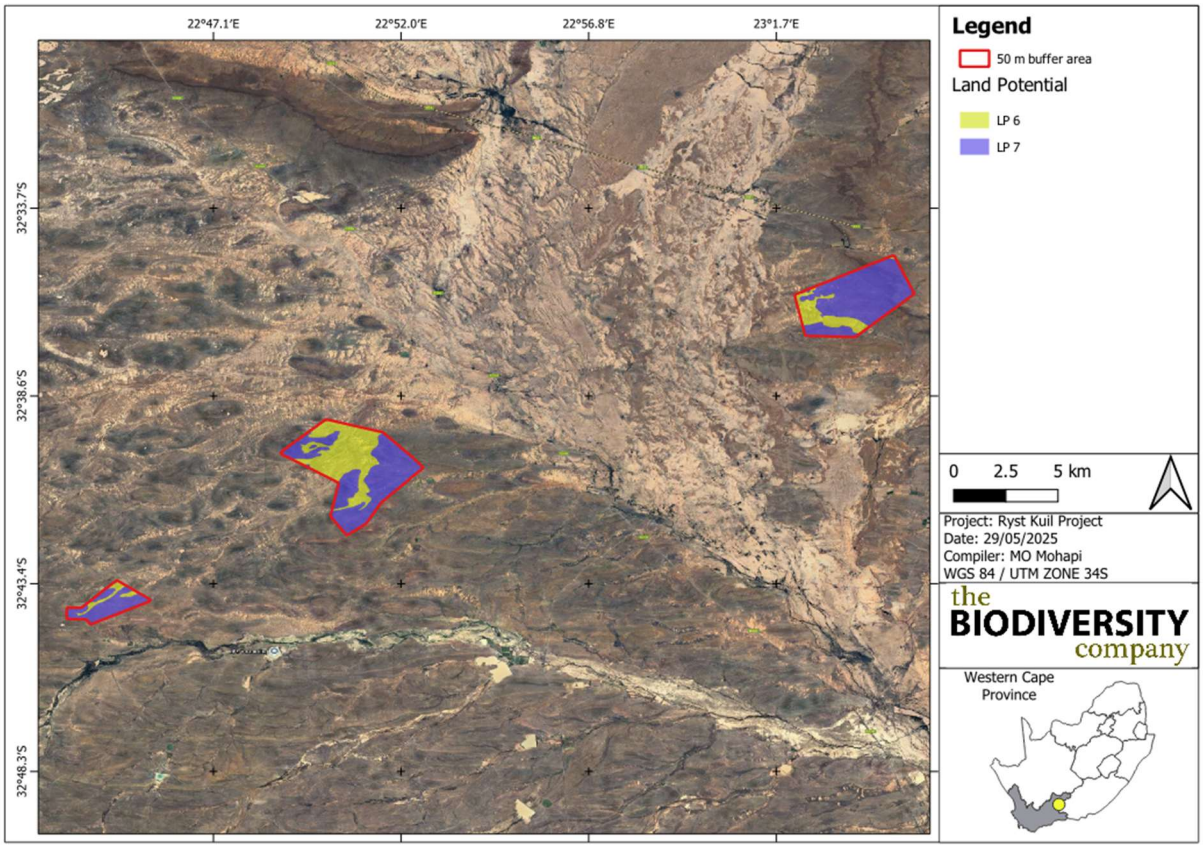


Figure 3-11 Land Potential of the proposed project area

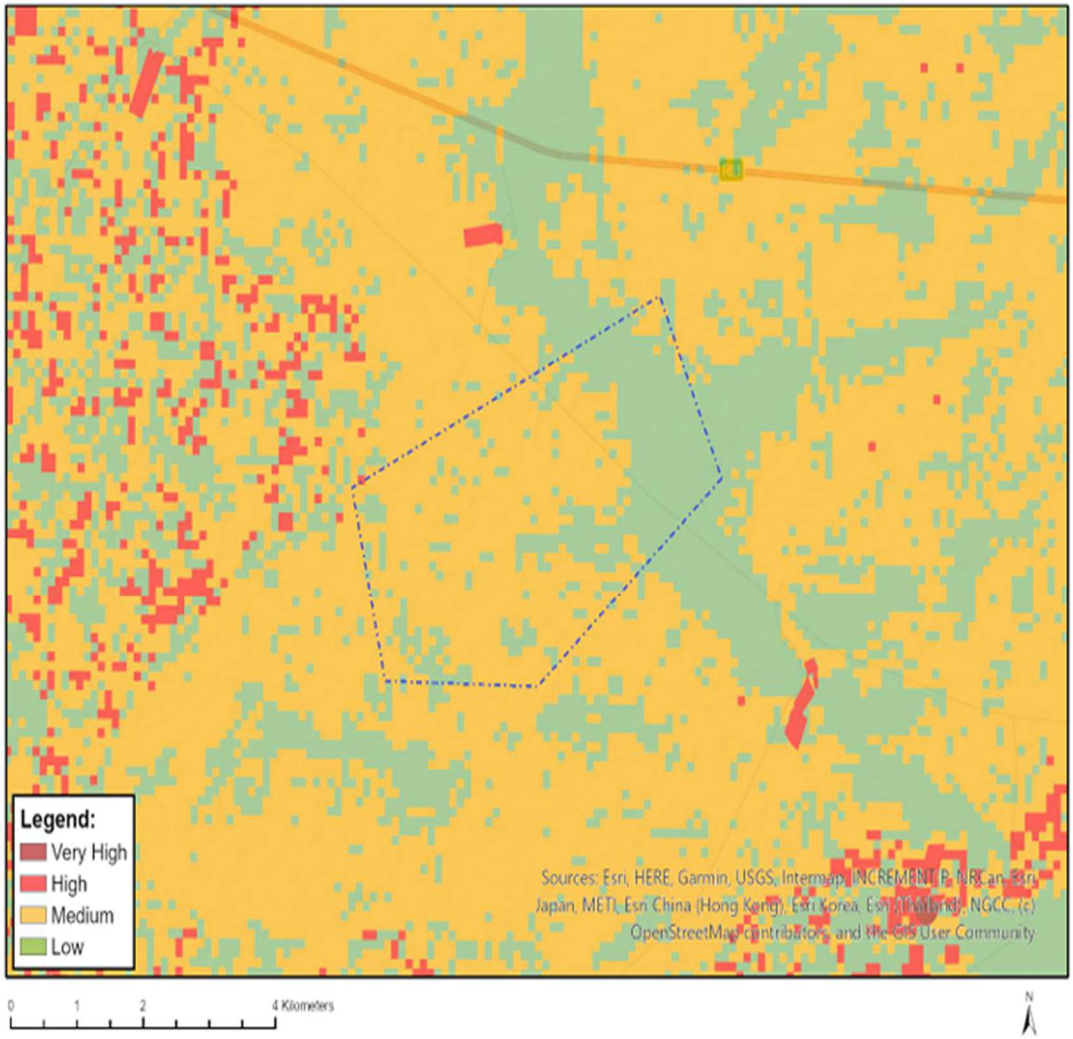
3.4 Sensitivity Verification

3.4.1 Screening Report – Ryst Kuil Project

The following is deduced from the National Web-based Environmental Screening Tool Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, as amended):

- Agriculture Theme Sensitivity indicates that the proposed project area falls within the 'Low to High' agricultural sensitivity (Figure 3-12 to Figure 3-14).

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



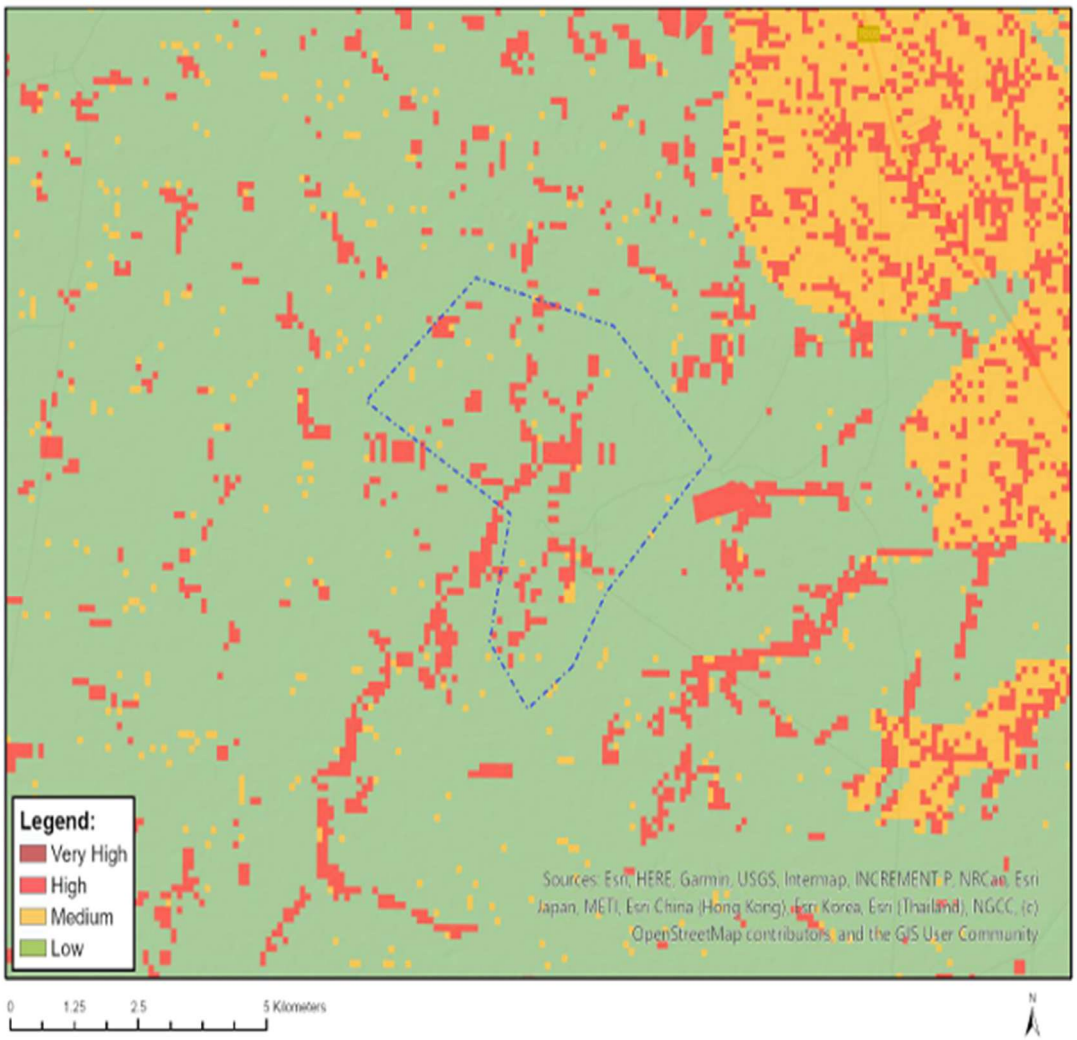
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	08. Moderate
Low	04. Low-Very low
Low	05. Low
Medium	06. Low-Moderate
Medium	07. Low-Moderate

Figure 3-12 Map of Relative Agricultural Theme Sensitivity for the Haanekuil site – Ryst Kuil Project generated by the Environmental Screening Tool

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



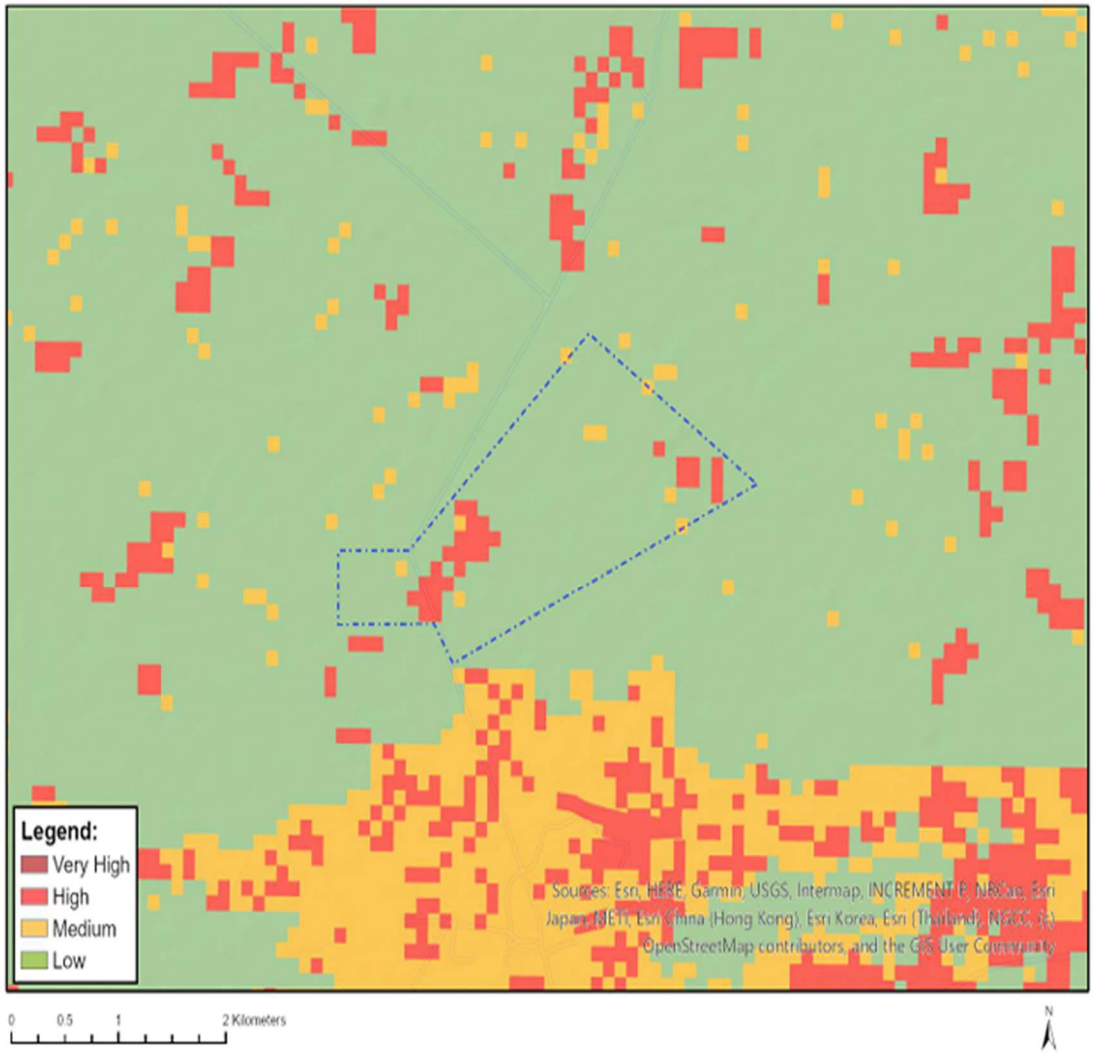
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	08. Moderate
High	09. Moderate-High
Low	04. Low-Very low
Low	05. Low
Medium	06. Low-Moderate

Figure 3-13 Map of Relative Agricultural Theme Sensitivity for the Ryst Kuil Main and Abante site – Ryst Kuil Project generated by the Environmental Screening Tool

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	08. Moderate
Low	04. Low-Very low
Low	05. Low
Medium	06. Low-Moderate

Figure 3-14 Map of Relative Agricultural Theme Sensitivity for the Ryst Kuil Extension site – Ryst Kuil Project generated by the Environmental Screening Tool

Fifteen land capabilities have been digitised by (DAFF, 2017) across South Africa, of which six potential land capability classes are located within the assessment area, including;

- Land Capability 4 (Very Low to Low);
- Land Capability 5 (Low);
- Land Capability 6 (Low to Moderate);
- Land Capability 7 (Low to Moderate);
- Land Capability 8 (Moderate Sensitivity); and
- Land Capability 9 (Moderate to High Sensitivity).

The land capability dataset (DAFF, 2017) indicates that the proposed project area predominately has “Very Low to Moderate” sensitivities for the assessed project area sites, with marginal areas categorised as with “Moderate to High” sensitivity (Figure 3-12 to Figure 3-14). No active cropping areas with high sensitive boundaries were identified within the proposed project area following the DFFE, (2025) agricultural screening theme tool. Therefore, there is no segregation of high sensitive cropping areas in the proposed project area sites.

The verified baseline findings and calculated land potential disputes the agricultural theme screening tool in all areas associated with high sensitivity. The baseline findings confirm the very low to low sensitivities and medium sensitivity only in areas associated with the Swartland soil form. Historical crop fields were identified and were confirmed to be inactive with the presence of restrictive Mispah and Glenrosa low potential soils. No irrigation infrastructure such as centre pivots, canals or drip irrigation is associated with the three proposed project areas.

The proposed activities are expected to have an overall negligible impact on the soil resources, historical crop fields and natural veld areas. The land capability and land potential of the resources in the assessment area are both reclassified with an overall “low” sensitivity, with “medium” sensitivity along the marginal natural veld areas (Figure 3-15).

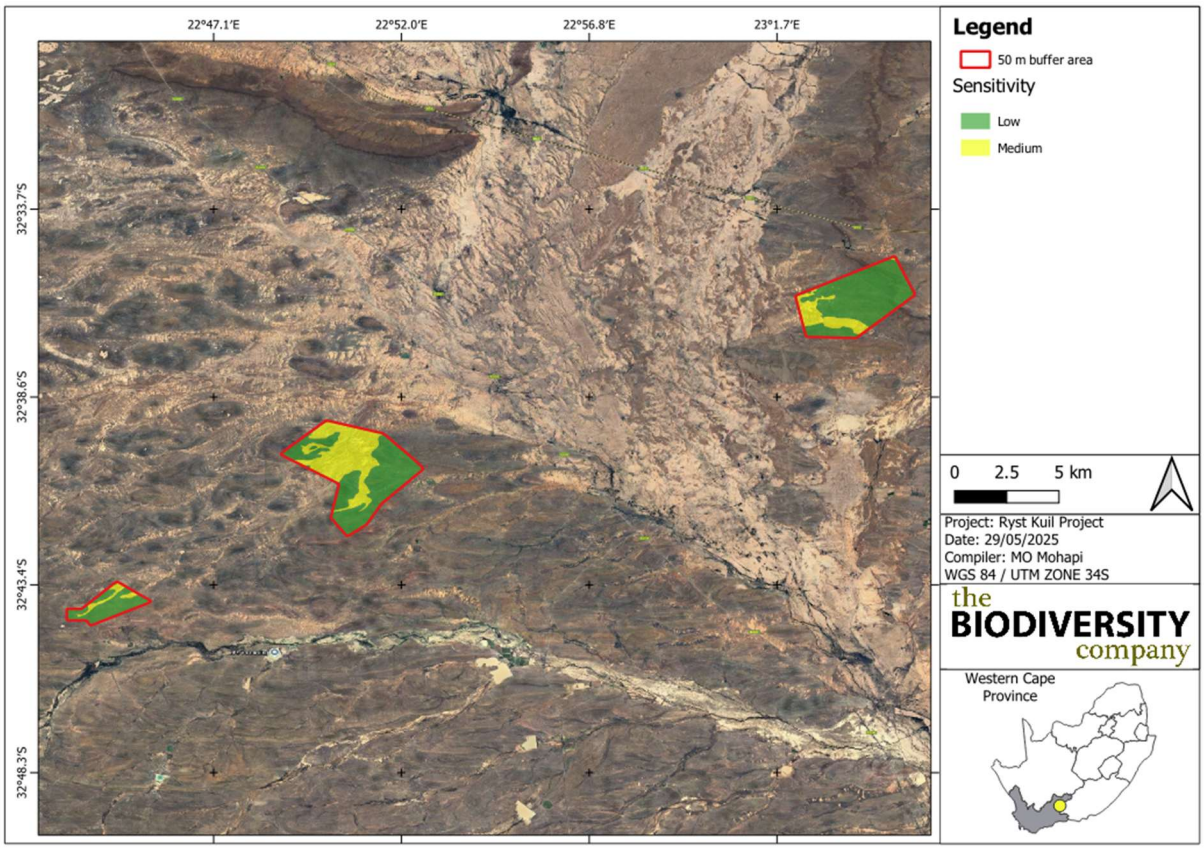


Figure 3-15 Overall site verified sensitivity of the project area

Considering the soil properties, agricultural potential as well as the current land use of the proposed development area, the area has a predominately “low” agricultural sensitivity. The proposed activities are expected to have impact on the agricultural potential of the proposed project. The allocated sensitivities for the theme are either disputed or validated in Table 3-6 below.

Table 3-6 Summary of the screening tool vs specialist assigned sensitivities

Screening Tool Theme	Feature	Screening Tool	Specialist	Tool Validated or Disputed by Specialist - Reasoning
Agricultural Theme	LC 8 (Moderate High)	High	Low	Disputed – Land capability 1-5 (Very Low to Low). The presence of historical crop fields on low potential soils including Mispah and Glenrosa.
	LC 6-8 (Moderate)	Medium	Medium	Validated – Land Capability 6-8 (Moderate). The presence of moderate potential soils including the Carolina and Swartland soil forms.
	LC 4-5 (Very Low to Low)	Low	Low	Validated - Land Capability 1-5 (Very Low to Low). The presence of low potential soils including Mispah, Glenrosa soil forms.

4 CARA Requirements

Under Conservation of Agricultural Resources Act (no. 43 of 1983, CARA), approvals are necessary for various activities, such as cultivating virgin land, veld burning, cultivating localized alien plants for commercial purposes and the draining of wetland systems.

For the cultivation of virgin land, CARA specifies that only arable land should be cultivated. However, disturbances to topsoil resulting from the construction of proposed activities does not fall under this category of cultivation as defined by CARA but rather soil disturbance. Therefore, the construction and operation of the camps do not require consent under CARA.

Additionally, since the proposed development does not involve veld burning or the commercial cultivation of localized alien plants, it does not require consents under those provisions of CARA.

Similarly, a specialist wetland assessment was undertaken for the required authorisations. The proposed layout of the Ryst Kuil Project and the associated infrastructures has adhered to the recommendation to avoid most watercourses, and to also adhere to the prescribed buffer width. Furthermore, the proposed project will not result in the direct draining of the water regimes due to the activities. The overall residual impact to the wetland systems was determined to be low. The project is compliant and will not require consent under CARA for any activities.

In summary, Ryst Kuil Project and the associated infrastructure is compliant with CARA regulations and does not necessitate consent under the Act following the site confirmation.

5 Impact and Management Measures

5.1 Anticipated Impact Framework

An impact framework was considered for the impact assessment. The following list provides a framework for the identified major impacts associated with the project (Table 5-1).

Table 5-1 Anticipated impacts for the proposed support infrastructure on agricultural resources

Main Impact	Project activities that can cause loss/impacts to soils (especially regarding the proposed infrastructure areas)	Secondary impacts anticipated
Loss of land capability	• Construction, operation and decommissioning of proposed activities; • Construction, operation and decommissioning of construction camps and layout areas; • Potential leaks or spillage (i.e. hydrocarbons); • Mixing of soil; • Soil dust precipitation in bare surface or gravel access roads; • Dust precipitation; and • Removal of vegetation for the proposed support infrastructure	• Soil erosion; • Soil degradation; • Surface compaction; • Increase in soil salinity; • Land contamination; and • Loss of soil via aeolian processes.

5.2 Mitigation

The following measures are provided:

- Vegetation clearance must be restricted to areas authorised for development;
- Land clearing and preparation may only be undertaken immediately prior to construction activities and within authorised areas;
- Minimise project footprint as far as possible. Manage location of topsoil stripping stockpiling, demarcation of topsoil stockpiles and prevention of stockpile erosion and contamination. This can protect the topsoil stockpiles to keep it viable for rehabilitation purposes;
- Make use of existing roads or upgrades tracks before new roads are constructed. The number and width of internal access routes must be kept to a minimum. Usually, areas with sandy soils are avoided as far as possible for heavy vehicles, since these are the dominate soils, dust suppressions methods should be implemented to reduce wind erosion during this phase;
- Implementation of embedded controls such as geotextiles, gabion baskets can effective control soil erosion on-site;
- A stormwater management plan must be implemented for the development. Using drainage control measures and culverts to manage surface runoff. The plan must provide input into the road network and management measures;
- Losses of fuel and lubricants from vehicles to be contained during construction and the maintenance processes, use of biodegradable fluids where possible, avoid waste disposal on undesigned areas which are not contained.
- Rehabilitation of the area must be initiated from the onset of the project. Soil stripped from infrastructure placement can be used for rehabilitation efforts; and
- An alien invasive plant species and control programme must be implemented from the onset of the project.

5.3 Management Measures

The assessment of impact significance considers pre-mitigation as well as implemented post-mitigation scenarios. The aim of the management outcomes (below) is to present the mitigation measures in such a way that they can be incorporated into the Environmental Management Programme (EMPr) for the project, allowing for more successful implementation and auditing of the mitigations and monitoring guidelines. The project management measures for the soils and agriculture resources during the construction phase presents the prescribed mitigation measures for construction phase for the assessment are presented in Table 5-2. Table 5-3 presents the prescribed mitigation for operational phase for the assessment. Table 5-4 presents the prescribed mitigation measures for the decommissioning, rehabilitation and closure phases for the assessment.Table 5-2 The project management measures for the soils and agriculture resources during the construction phase

Environmental Theme: Agriculture

Impact Management Outcome: Protection of soil resources
Phase: Construction

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Cleared areas must be rehabilitated and stabilised to avoid impacts to adjacent areas	Contractor/ Environmental Officer	Implement a rehabilitation plan	Construction Phase	Environmental Officer	Throughout phase	Rehabilitation implemented
Make use of existing access routes as much as possible before new routes are considered. Any selected "new" route must be authorized.	Contractor	Design engineer to consider this for final layout	Construction Phase	Environmental Officer	Throughout phase	All routes authorised
Promptly remove all alien and invasive plant species that may emerge during construction (i.e., weedy annuals and other alien forbs) must be removed	Environmental Officer	Implement an alien vegetation management plan	Construction Phase	Environmental Officer	Throughout phases	Implement alien vegetation management plan
Limit soil disturbance.	Contractor/ Environmental Officer	Clear/disturb soil on a need basis only	Construction Phase	Environmental Officer	Throughout phase	Soil disturbance is reduced
Keep excavation and soil heaps clear of potential contaminates or waste	Contractor	Separate topsoil and sub-soil	Construction Phase	Environmental Officer	Throughout phase	Soil heaps are managed
Minimize unnecessary clearing of vegetation beyond the development footprints	Contractor/ Environmental Officer	Visibly demarcate authorised working areas	Construction Phase	Environmental Officer	Throughout phase	Clearance is minimised

Make sure all excess consumables are removed from site and deposited at an appropriate waste facility	Contractor/ Environmental Officer	Restrict to designated working/storage/service areas	Construction Phase	Environmental Officer	Throughout phase	Restricted to demarcated area
Appropriately contain any generator diesel storage tanks, machinery spills (e.g., accidental spills of hydrocarbons oils, diesel etc.) or construction materials on site (e.g., concrete) in such a way as to prevent them leaking and entering wetlands or buffer areas	Contractor/ Environmental Officer	Restrict to designated working/storage/service areas	Construction Phase	Environmental Officer	Throughout phase	Restricted to demarcated area
Provide appropriate sanitation facilities for workers during construction and service them regularly	Contractor	Provide service ablution for contractors/labour	Construction Phase	Environmental Officer	Throughout phase	Ablution facilities provided and serviced
The Contractor should supply sealable and properly marked domestic waste collection bins and all solid waste collected must be disposed of at a licensed disposal facility	Contractor	Implement waste management plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented
The Contractor must be in possession of an emergency spill kit that must be complete and available at all times on site	Contractor	Implement spill response plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented
Any possible contamination of topsoil by hydrocarbons must be avoided. Any contaminated soil must be treated in situ or be placed in	Contractor	Implement spill response plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented

containers and removed from the site for disposal in a licensed facility						
A stormwater management plan must be development and implement for the purpose of this project to control runoff from the development site	Contractor	Implement stormwater management plan	Construction Phase	Environmental Officer	Throughout all the phases	Plan is implemented

Table 5-3 The project management measures for the soils and agriculture resources during the operational phase

Environmental Theme: Agriculture

Impact Management Outcome: Protection of soil resources
Phase: Operational

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Implement dust suppression on stockpiles like the gravel roads.	Contractor/ Environmental Officer	Implement scheduled dust suppression plan	Operational Phase	Environmental Officer	Throughout phases.	Plan is implemented
Implement erosion control methods like mulching, geotextile sheets, reduce soil compaction, chemical spills which can affect soil fertility.	Environmental Officer	Implement an alien vegetation management plan	Operational Phase	Environmental Officer	Throughout phases	Implement alien vegetation management plan
Ensure successful rehabilitation of areas disturbed during construction and these areas are stabilized to avoid impacts to adjacent areas	Contractor/ Environmental Officer	Implement spill rehabilitation plan	Operational Phase	Environmental Officer	Quarterly during first two years of operation.	Plan is implemented

Table 5-4 The project management measures for the soils and agriculture resources during the decommissioning, rehabilitation and closure phase

Environmental Theme: Agriculture

Impact Management Outcome: Protection of soil resources
Phase: Decommissioning, Rehabilitation and Closure

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Rehabilitation of the Project area will be	Contractor/Environmental Officer	Implement soil compaction rehabilitation	Rehabilitation and closure Phase	Environmental Officer	Throughout phases	Implement erosion control,

undertaken, which includes the ripping of the compacted soil surfaces and establishment of vegetation.						revegetation and alien vegetation management plan on disturbed areas
Ensure successful rehabilitation of areas disturbed during construction to decommissioning and these areas are stabilized to avoid impacts to adjacent areas	Contractor/ Environmental Officer	Implement soil re-vegetation, spillage or residual waste contamination rehabilitation plan	Rehabilitation and closure Phase	Environmental Officer	Should be assessed once a year for soil compaction, fertility, and erosion.	Plan is implemented
Ensure rehabilitation of contaminated soil by removal of pollutants by implementing methods such as bioremediation and phytoremediation	Contractor/ Environmental Officer	Implement soil spillage or residual waste contamination rehabilitation plan	Rehabilitation and closure Phase	Environmental Officer	Should be assessed once a year for possible contaminants	Plan is implemented

6 Conclusion

Three (3) representative soil forms were identified within the proposed project area namely; Swartland, Glenrosa and Mispah soil forms. The proposed project area is predominantly characterized with the Mispah and Glenrosa soil forms, categorised as land potential L7. These dominant soil forms have a low agricultural potential for most cropping practices and mostly suitable for natural veld and livestock grazing. The moderate potential soils which were identified within the project area include the Swartland soil form, and which is characterised by land potential L6, suitable for natural vegetation. Anthrosols which were identifies within the project area including Industria and Grabouw soil forms, which are characterised by land potential L8, with extreme severe limitations and very low agricultural potential uses.

The land capability dataset (DAFF 2017) indicates that the proposed project area is dominated by “Very low to Moderate” land capability sensitivities, with the remaining extent having a “Moderate to High” land capability sensitivity. The verified baseline findings, current land uses and the calculated land potential level concur with the agricultural theme in areas associated with very low to moderate land capability and further dispute the medium to high sensitivities. The specialist baseline findings confirmed that, the proposed project area has a low agricultural potential through the site assessment and verification due to the dominant low potential soil forms and available restrictive climatic conditions.

It is the specialist’s opinion that the proposed project is expected to have negligible impact on the soil resources, with an overall low impact on the historical crop fields and natural veld areas. The proposed project and associate infrastructure may be favourably considered for development, provided mitigation measures are implemented.

6.1 Management Measures

An impact assessment is not required to be included in the Agricultural compliance statement, but where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr must be provided. The following measures are provided:

- Vegetation clearance must be restricted to areas authorised for development;
- Land clearing and preparation may only be undertaken immediately prior to construction activities and within authorised areas;
- A stormwater management plan must be developed and implemented for the project; and
- If soil erosion is detected, the area must be stabilised using geo-textiles and facilitated re-vegetation.

6.2 Specialist Statement

The proposed development area will have an overall minimal residual impact on the agricultural production capability of the area. The proposed development can be favourably considered for authorisation. The following serves to substantiate this statement:

- The site verified land capability of the proposed project area is found to range from low to medium;
- The agricultural potential of the area is low;
- No active farming was determined within the proposed project area; and
- The overall agricultural sensitivity for the proposed project area is low.

6.3 Statement Conditions

The project may be favourably considered for authorisation provided that the recommended mitigation measures are adhered to.

7 References

Department of Agriculture, Forestry and Fisheries, 2017. *National land capability evaluation raster data: Land capability data layer*, 2017. Pretoria.

National Environmental Screening Tool. 2025. National Environmental Screening Tool, 2025. Available from the Department of Forestry, Fisheries and the Environmental website: https://screening.environment.gov.za/screeningtool/index.html#/pages/welcome.

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

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Steenekamp, P.I. (2016). *Soil, Land Capability and Land Use Specialist Study – Tasman RSA Mines Karoo Uranium Project*. Rehab Green Monitoring Consultants CC, prepared for Ferret Mining & Environmental Services (Pty) Ltd. 21 January 2016.

8 Appendix Items

8.1 Appendix A: Methodology

8.1.1 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.

8.1.2 Field Survey

The site was traversed on foot. A soil auger was used to determine the soil form/family and depth. The soil was 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.

8.1.3 Land Capability

Land capability and agricultural potential will 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 8-1 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 8-1 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 the table below. The final land potential results are then described in the subsequent table.

Table 8-2 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 8-3 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

The land capability of the proposed footprint will be compared to the National Land Capability which was refined in 2014- 2016. The National Land Capability methodology is based on a spatial evaluation modelling approach and a raster spatial data layer consisting of fifteen (15) land capability evaluation values (Table 8-4), usable on a scale of 1:50 000 – 1:100 000 (DAFF, 2017). The previous system is based on a classification approach, with 8 classes (Table 8-1). Land capability and land potential will also be determined in consideration of the screening tool to ultimately establish the accuracy of the land capability sensitivity from (DAFF, 2017).

Table 8-4 National Land Capability Values (DAFF,2017)

Land Capability Evaluation Value	Land Capability Description
1	Very low
2	
3	Very Low to Low
4	
5	Low
6	Low to Moderate
7	
8	Moderate

9	Moderate to High
10	
11	High
12	High to Very High
13	
14	Very High
15	

8.2 Appendix B Specialist declarations

DECLARATION

I, Matthew Mamera, 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 48 and is punishable in terms of Section 24F of the Act.

Dr Matthew Mamera

Soil Scientist

The Biodiversity Company

July 2025

DECLARATION

I, Maletsatsi Mohapi, 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 48 and is punishable in terms of Section 24F of the Act.

Maletsatsi Mohapi

Soil Scientist

The Biodiversity Company

July 2025

8.3 Appendix C Curriculum vitae

Matthew Mamera

PhD Soil Science (*Pri Nat Sci*)

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Email: matthew@thebiodiversitycompany.com
Identity Number: 8810315983183
Date of birth: 31 October 1988

Profile Summary

Working experience throughout South Africa

Specialist experience with pedology and agriculture.

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

Experience hydropedological modelling

Areas of Interest

Mining, Farming, Soil and Water quality contamination, Soil Sanitation management, Soil Carbon, Sustainability and Conservation.

Key Experience

- Environmental Impact Assessments (EIA)
- Environmental Management Programmes (EMP)
- Wetland delineations
- Rehabilitation Plans
- Soil taxonomic classification (SA forms and WRB groups)
- Soil Hydropedology assessments
- Agriculture potential assessments
- Land contamination assessments

Country Experience

South Africa: All Provinces

Zambia - Kitwe and Mufulira

Angola- Zenza – Cacuso; Luena – Saurimo

Namibia

Nationality

South African Permanent Residence

Languages

English – Proficient

Ndebele, Xhosa, Shona – Proficient

Qualifications

- PhD (University of the Free States)- Soil Science (Hydropedology, Sanitation and Water quality management)
- MSc (University of Fort Hare) – Soil Science (Hydropedology, Sanitation and Water quality management)
- BSc Honours *Cum laude* (University of Fort Hare) – Soil Science (Hydropedology, wetlands delineation and rehabilitation)
- BSc Agricultural Soil Science
- Pri Nat Sci 116356
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Maletsatsi Octovia Mohapi

Master of Science (M.Sc) Agriculture - Soil Science (*Cand Nat Sci)*

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Profile Summary

Working experience throughout South Africa.

Specialist has experience in agriculture and wetland ecology.

Specialist expertise include soil identification and classification, soil chemistry, physics, pedology, wetland delineation, rehabilitation, and management.

Areas of Interest

Farming, Mining, Soil and Wetlands sustainability and conservation, Infrastructure development, Vegetation monitoring and rehabilitation.

Key Experience

- Soil taxonomic classification
- Soil chemical and physical laboratory analysis
- Wetland delineations
- Vegetation Monitoring
- Rehabilitation Plans
- Agriculture potential assessments
- Environmental Impact Assessments (EIA)
- Environmental Management Programmes (EMP)

Country Experience

South Africa: All Provinces

Nationality

South African

Languages

English – Proficient

Sesotho, Setswana, and Sepedi – Proficient

Qualifications

- MSc (University of the Free State) – Agriculture (Soil Science)
- BSc Honours (University of the Free State) – Soil Science (Soil chemistry, Pedology, Biology and Physics)
- BSc Geography and Environmental science (Geography, Soil science and Ecology)
- SSSSA- Membership no: 1092
- Cand Nat Sci: 154457