

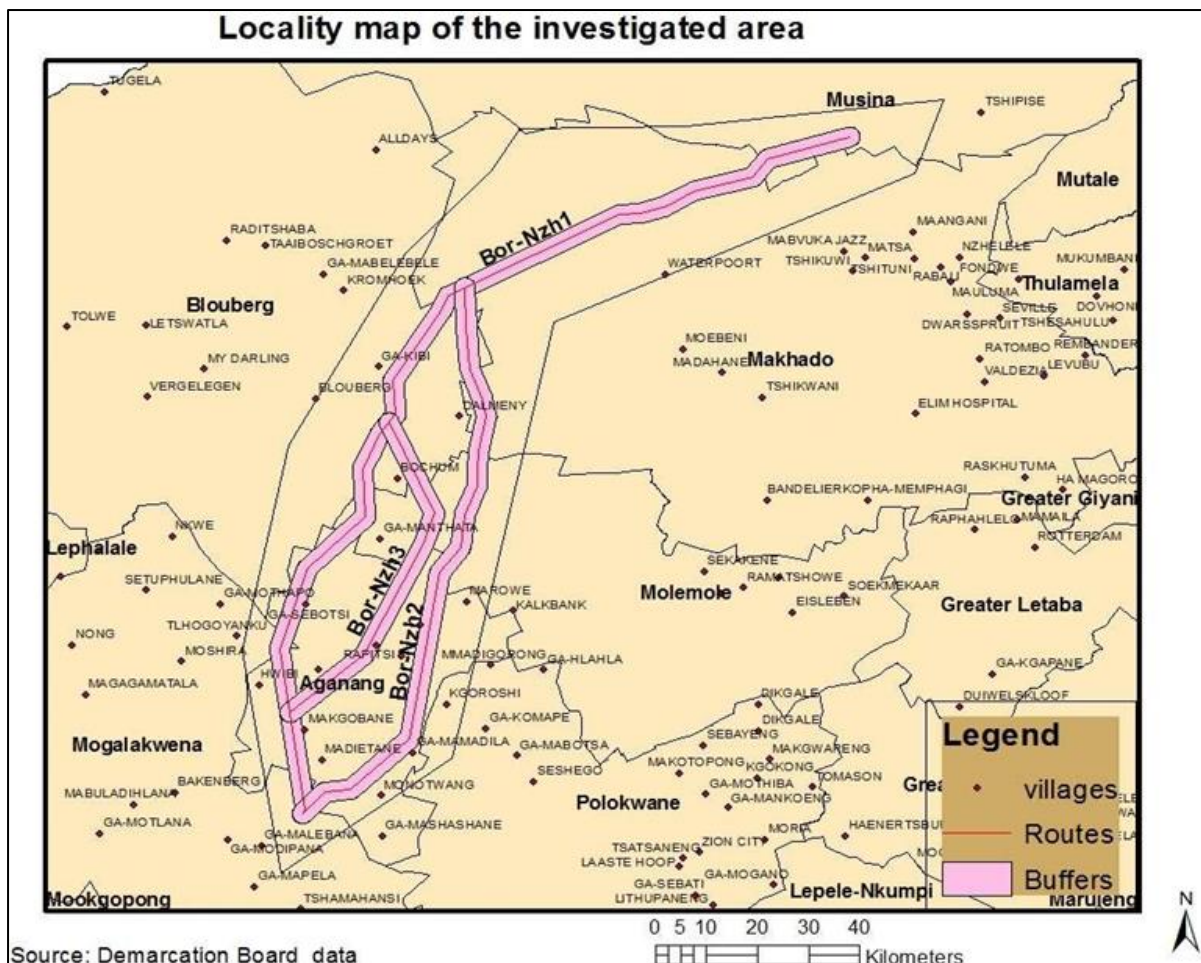
01 August 2024

Attention: Zitholele Consulting

To whom it may concern:

SOIL SPECIALIST INPUT COMPARATIVE ANALYSIS FOR THE BORUTHO-NZHELELE POWERLINE WALKDOWN (2024) SOIL AND AGRICULTURE REPORT FINDINGS AS COMPARED TO THE ORIGINAL EIA (2012) REPORT FOR THE ENVIRONMENTAL AUTHORISATION (EA) OF THE PROPOSED CONSTRUCTION OF A 400KV 250 KM BUROTHO-NZHELELE POWERLINES, LOCATED IN WATERBERG, CAPRICORN AND VHEMBE DISTRICT MUNICIPALITY, LIMPOPO PROVINCE, SOUTH AFRICA.

This letter aims to highlight the key differences and implications for agricultural potential and land use between the two reports. The project area assessed in 2012 had three corridors (western, central and eastern) as seen in Figure 1. The project area assessed during the walkdown in 2024 was a combination of the central and eastern corridors that were merged to form the project area (Figure 2).



Source: Demarcation Board data

Figure 1. Project area 2012

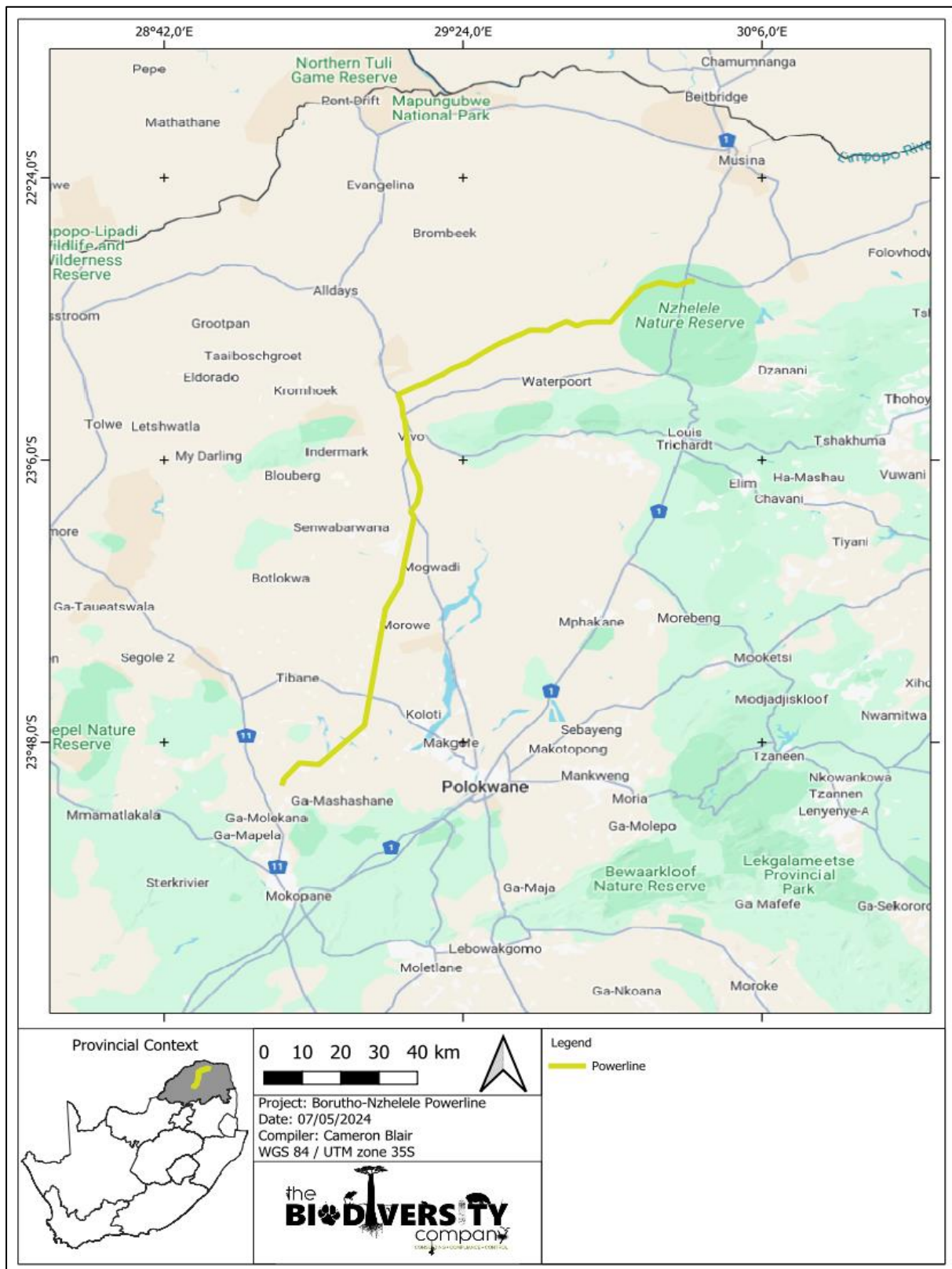


Figure 2. Project area 2024

- 1 The following key findings from the agricultural impact study (2012) and the soil and agricultural assessment walkdown, conducted by The Biodiversity Company (TBC, 2024) were presented based on the proposed soil resources found within the powerline corridor. The identified soil forms from the TBC (2024) report are presented in Figure 3 below:

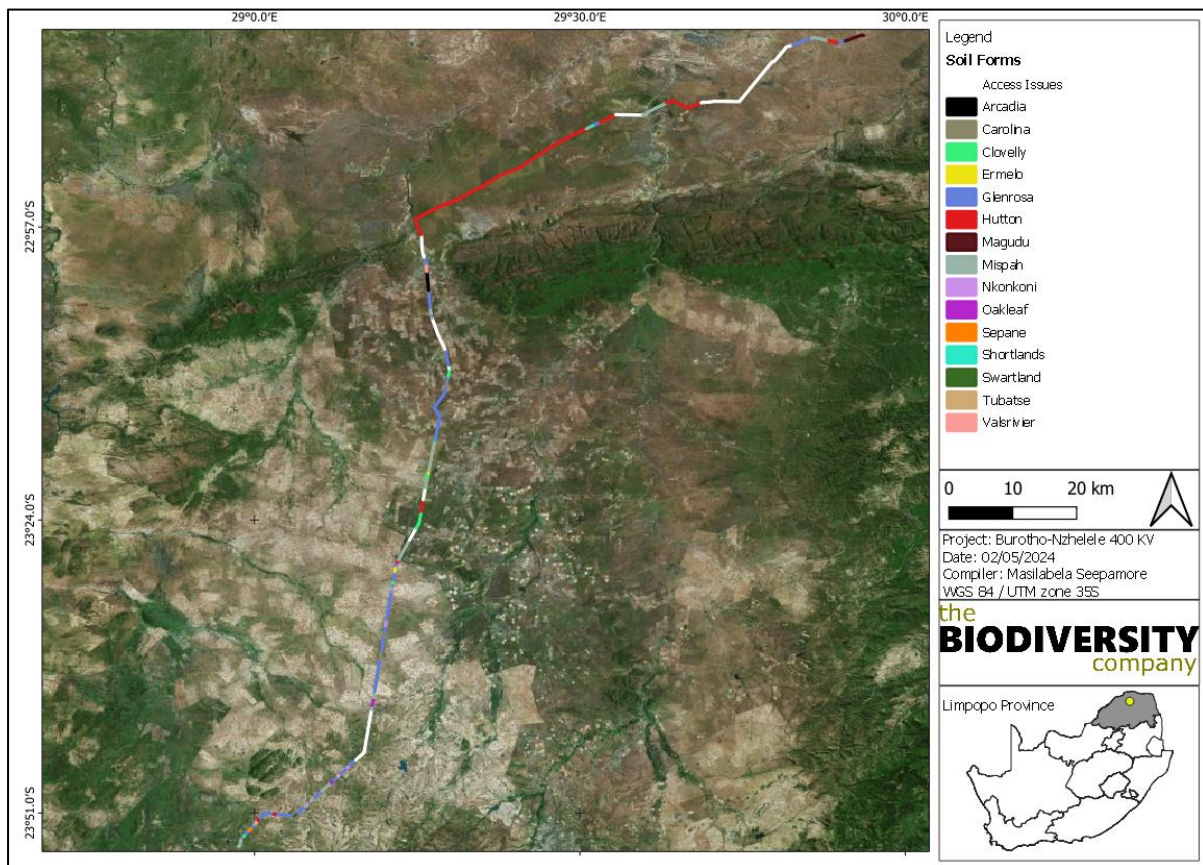


Figure 3. Soil forms found during the 2024 walkdown area

Agricultural Impact Studies (April 2012)		Agricultural Impact Walkdown Studies (March & April 2024)	
Key Findings		Key Findings	
Soil Forms and Agricultural Potential	<ul style="list-style-type: none"> High potential soils such as Hutton, Bainsvlei, and Avalon, which are deep and well-drained, with topsoil clay content varying between 12% and 20% were identified. These soils were found predominantly along the proposed powerline routes, particularly in the Western (Route 1) and Central (Route 3) corridors. Presence of low potential soils like Longlands, which are less suitable for agriculture due to their shallow depth and poor drainage. 	Soil Forms and Agricultural Potential	<ul style="list-style-type: none"> Fifteen representative soil forms, including Glenrosa, Mispah, Arcadia, and Hutton. The dominant soils, such as Glenrosa and Mispah, were characterized by shallow profiles with high clay content and impermeable horizons, leading to low agricultural potential. Soils like Hutton, which have good potential for agriculture, were present but limited in extent. These soils were associated with active or historical crop fields and required careful consideration for infrastructure placement to avoid disruption. Areas which coincide with good potential agricultural soils or active crop fields areas confirmed with the specialist include; towers, 124, 142-148, 248-325, 332-337 and 355-372.
Land Capability and Impact	<ul style="list-style-type: none"> The land capability was classified predominantly as <u>low to moderate</u>, with localized pockets of moderate to high capability found more along the Eastern corridor. The Western and Central corridors were found to have less impact on agriculture compared to the Eastern corridor, which traverses more irrigated fields. 	Land Capability and Impact	<ul style="list-style-type: none"> The land capability was determined to be class "IV" to "VI," with a climate capability level of 8, indicating very restrictive potential due to soil, slope, and climatic conditions. The overall land potential was classified as "L6" and "L7," indicating non-arable land with severe limitations. The sensitivity verification indicated that the proposed project area falls within <u>Low to Very High</u> agricultural sensitivity, necessitating specific mitigation measures to minimise impacts.
Land Use and Irrigation	<ul style="list-style-type: none"> The presence of extensive irrigation systems along the corridors, particularly in the Eastern corridor, was highlighted as a significant factor contributing to high agricultural potential. The three powerline corridors traverse similar and dominant vegetation types, the Makhado Sweet Bushveld. In addition to this, the eastern corridor experiences a significant patch of the Polokwane Plateau Bushveld to the south. The quality of the grass under the Makhado Sweet Bushveld in term of feeding is generally low whereas that of the Polokwane Plateau Bushveld is high. 	Land Use and Irrigation	<ul style="list-style-type: none"> The project area had active crop fields, however the development of the towers in active crop fields or historical crop fields is acceptable provided consent is obtained from the landowners.

	<ul style="list-style-type: none"> • On relatively terms, avoiding the eastern corridor will result in minimal disturbance of the quality of grass compared to that of the western and central corridors. • The central corridor transversed less farmlands and was dominated by irrigated farms. • The study recommended avoiding the Eastern corridor to minimise agricultural disruption. 		<ul style="list-style-type: none"> • Most of the crop fields which were previously identified are now historical crop fields, with no irrigation infrastructure, like centre pivots or drip irrigation. • Enforcing proper mitigation measures will ensure the soil resources underneath the powerline are restored within a period of 2 years.
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2 After assessing the two studies it can be concluded that most sensitive agricultural areas were avoided as highlighted in the report by TBC (2024) identified in the previous 2012 EIA studies and the changes coincide, with a few areas. The 2024 report emphasised the need for mitigation measures, and recommended engaging with landowners if the placement of towers occurs within an active crop field. The specialist proposed the adjustment of tower (124,148 and 320) if possible, as high potential soils and active crop fields are present in these areas.

The proposed placement of most towers is acceptable according to the 2024 report, and no adjustments are deemed necessary. Provided that the following mitigation measures are implemented:

- 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 powerline maintenance processes, use of biodegradable fluids where possible, avoid waste disposal on undesigned areas which are not contained.
- Associated infrastructure foundations for the pylons or towers must be (preferably) located in already disturbed areas where possible;
- 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.

2012 Mitigation Measures as listed below:

- Preference to the western corridor as it traverses less high capability land compared to the eastern and central corridors;
- Avoid the eastern corridor which has more irrigated fields and a wetland, leading to significant disturbance;

- Avoid the eastern corridor to minimize disturbance to high-quality grass species in the Polokwane Plateau Bushveld;
 - Ensure the development of irrigation systems as the area has potential for irrigation despite low precipitation;
 - Follow all necessary environmental legislation requirements during the construction of the powerline through the recommended western corridor; and
 - Consider the impact on existing farm infrastructure, especially in the western corridor which has more commercial farms.
- 3 Therefore, the updated layouts and reports of the powerline corridor can be Comparative Analysed as follows;
- Soil Potential: The 2012 study identified a higher proportion of high potential soils (Hutton, Bainsvlei, Avalon) compared to the 2024 walkdown, which found predominantly low potential soils (Glenrosa, Mispah) with limited areas of high potential soils like Hutton.
 - Land Capability: Both reports classified the land capability as low to moderate, but the 2024 report provided a more detailed classification with specific land potential levels (L6, L7) and highlighted severe limitations due to climatic conditions.
 - Impact and Mitigation: The 2012 study focused on avoiding high potential agricultural areas, particularly in the Eastern corridor, while the 2024 report provided comprehensive mitigation measures to minimise impacts across all identified soil forms.
- 4 The findings from the 2024 walkdown soil report indicate a more detailed and restrictive assessment of agricultural potential compared to the 2012 study. The emphasis on mitigation and engagement with landowners in the 2024 report reflects a more proactive approach to minimising agricultural disruption. It is crucial to integrate these findings into the planning and implementation phases of the proposed powerline project to ensure sustainable land use and minimal impact on agricultural productivity.
- 5 We trust you find the above in order. If there are any uncertainties or additional information required, please feel free to contact the undersigned.

Kind regards,



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