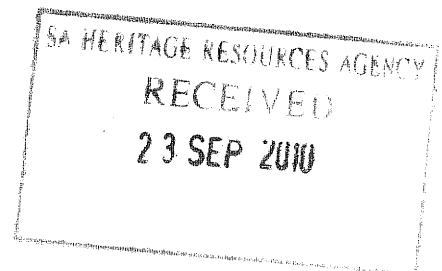


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**A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY  
FOR THE PROPOSED NEW 132KV POWER LINE RUNNING  
BETWEEN THE KWAGGAFONTEIN AND AMANDLA  
SUBSTATIONS IN THE MPUMALANGA AND LIMPOPO  
PROVINCES OF SOUTH AFRICA**

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## EXECUTIVE SUMMARY

A Phase I Heritage Impact Assessment (HIA) study, as required in terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999), was done for Eskom's proposed 132kV power line to be established between the Amandla and the Kwaggafontein Substations in the Limpopo and Mpumalanga Provinces of South Africa.

The aims with the Phase HIA study were the following:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1) do occur within the perimeters of the Eskom Project Area and, if so, to determine the level of significance of these heritage resources.
- To make recommendations regarding the mitigation or the conservation of any significant heritage resources that may be affected by the proposed Eskom Project.

None of the proposed routes for the 132kV power line running between the Amandla and Kwaggafontein Substations revealed any outstanding or significant heritage resources. Therefore, the Preferred Route as well as the two Alternative Routes can be used for the construction of the new power line.

However, when considering heritage resources in a wider context (perspective) it is recommended that the Preferred Route be used for the construction of the 132kV power line between the Amandla and the Kwaggafontein Substations due to the fact that the Preferred Route follows stretches of land which have been affected by development in the past while stretches along Alternative 01 and the total length of Alternative 02 crosses pristine land where undetected heritage resources may exist.

### General

It is possible that this Phase I HIA study may have missed heritage resources in the Eskom Project Area as heritage sites may occur in thick clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during the Eskom Project the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

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## 1 INTRODUCTION

This study contains the report on the Phase I Heritage Impact Assessment study which was done according to Section 38 of the National Heritage Resources Act (No 25 of 1999) for Eskom's proposed new 132kV power line running from the Amandla Substation to the Kwaggafontein Substation in the Mpumalanga and Limpopo Provinces of South Africa.

The construction of the new power line along one of several alternatives is hereafter referred to as the Eskom Project whilst the alternatives for the proposed new power line corridor are referred to as the Eskom Project Area.

Focused archaeological research has been conducted in the Mpumalanga and Limpopo Provinces of South Africa for more than four decades. This research consists of surveys and of excavations of Stone Age and Iron Age sites as well as the recording of rock art and historical sites. The Limpopo Province has a rich heritage comprised of remains dating from the pre-historical and from the historical (or colonial) periods of South Africa. Pre-historical and historical remains in the Limpopo Province therefore form a record of the heritage of most groups living in South Africa today.

Various types and ranges of heritage resources that qualify as part of South Africa's 'national estate' as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) occur in the Limpopo Province (see Box 1, next page).

### **Box 1: Types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999).**

The National Heritage Resources Act (Act No 25 of 1999, Section 3) outlines the following types and ranges of heritage resources that qualify as part of the national estate, namely:

- (a) places, buildings structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and paleontological sites;
- (g) graves and burial grounds including-
  - (i) ancestral graves;
  - (ii) royal graves and graves of traditional leaders
  - (iii) graves of victims of conflict
  - (iv) graves of individuals designated by the Minister by notice in the Gazette;
  - (v) historical graves and cemeteries; and
  - (vi) other human remains which are not covered by in terms of the Human Tissue Act, 1983 (Act No 65 of 1983)
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) moveable objects, including -
  - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
  - (ii) objects to which oral traditions are attached or which are associated with living heritage;
  - (iii) ethnographic art and objects;
  - (iv) military objects;
  - (v) objects of decorative or fine art;
  - (vi) objects of scientific or technological interest; and
  - (vii) books, records, documents, photographs, positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

The National Heritage Resources Act (Act No 25 of 1999, Art 3) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value ...'. These criteria are the following:

- (a) its importance in the community, or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects
- (e) ;its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- (h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
- (i) sites of significance relating to the history of slavery in South Africa

## 2 AIMS WITH THIS PROJECT

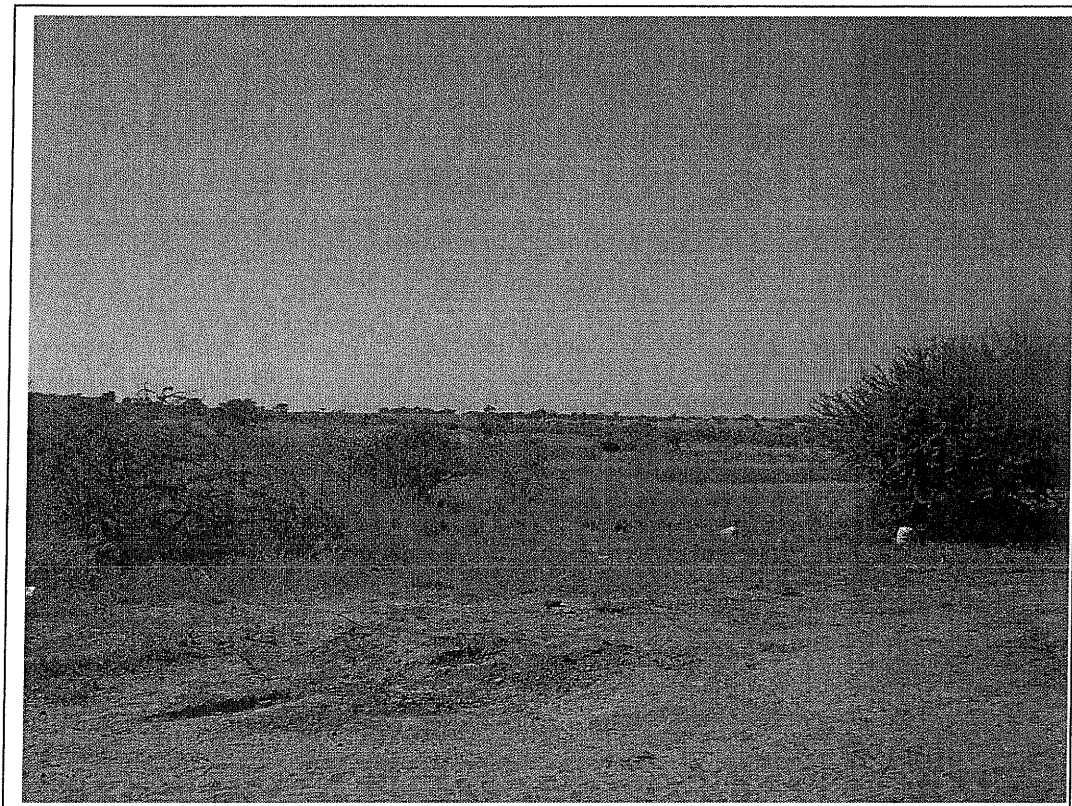
The Eskom Project may impact on any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No. 25 of 1999). Consequently, Eskom (Menlyn) and Dynamic Integrated Geo-Environmental Solutions (DIGES), the company responsible for compiling an Environmental Impact Assessment (EIA) report for the Eskom Project commissioned the author to undertake a Phase I HIA study for the proposed Eskom Project Area with the following aims

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1) do occur within the perimeters of the Eskom Project Area and, if so, to determine the level of significance of these heritage resources.
- To make recommendations regarding the mitigation or the conservation of any significant heritage resources that may be affected by the proposed Eskom Project.

### 3 THE ESKOM PROJECT AREA

#### 3.1 Location

The Eskom Project Area stretches between the Amandla Substation next to Road 573 in the north-east and the Kwaggafontein Substation near the town with the same name further to the south-west. The Eskom Project Area stretches along the Pretoria/Marble Hall road (Road 573) (also generally known as the 'Moloto Road') and crosses parts of the Mpumalanga and Limpopo Provinces of South Africa (2528 Pretoria; 1:250 000) (Figures 1 & 2).



**Figure 1- The Eskom Project Area covers outstretched pieces of land (Preferred Route, Alternative Route 01) as well as mountainous terrain (Alternative 01, Alternative 02) between the Amandla and Kwaggafontein Substation in the Eskom Project Area (above).**



The proposed new power line and the alternatives follow a north-eastern to south-western trajectory along Road 573 (also known as the Moloto Road) which runs between Koedoespoort (near Pretoria) and numerous villages which used to be located within the former homeland of KwaNdebele.

### **3.2 The Eskom Project**

The Eskom Project involves the following components:

- The construction of a 132kV power line from the existing Amandla Substation to the Kwaggafontein Substation. The proposed new 132kV power line may be constructed along one of three alternative routes (see Figure 3):

## **4 METHODOLOGY**

This Phase I HIA study was conducted by means of the following:

- Surveying the proposed Eskom Project Area with a vehicle and selected spots on foot.
- Briefly surveying literature relating to the pre-historical and historical context of the Eskom Project Area.
- Consulting maps of the proposed Eskom Project Area.
- Consulting archaeological (heritage) data bases.
- Consulting spokespersons regarding the possible presence of graves and graveyards in the project area.
- Synthesising all information obtained from the data bases, fieldwork, maps and literature survey.

### **4.1 Fieldwork**

The proposed Eskom Project Area was surveyed with a vehicle where accessible roads existed while selected, sensitive spots in the project area were surveyed on foot.

### **4.2 Databases, literature survey and maps**

Databases kept and maintained at institutions such as the Provincial Heritage Resources Agency (PHRA) and the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria were consulted to determine whether any heritage resources of significance has been identified during earlier heritage surveys in or near the Eskom Project Area.

The author is not unacquainted with the Eskom Project Area at large as he had done several heritage impact assessment studies near the proposed project area (see Part 8, 'Select Bibliography').

Literature relating to the pre-historical and the historical unfolding of the Eskom Project Area was reviewed (see Part 5, 'Contextualising the Eskom Project Area').

It is important to contextualise the pre-historical and historical background of the Eskom Project Area in order to comprehend the identity and meaning of heritage sites in and near the project area.

In addition, the Eskom Project Area was studied by means of maps on which it appears (2529 Pretoria; 1 250 000 map).

#### **4.3 Assumptions and limitations**

It is possible that this Phase I HIA study may have missed heritage resources in the Eskom Project Area as heritage sites may occur in thick clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during the Eskom Project the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

#### **4.4 Some remarks on terminology**

Terms that may be used in this report are briefly outlined in Box 2.

## Box 2. Terminologies that may be used in this report

The Heritage Impact Assessment (HIA) referred to in the title of this report includes a survey of heritage resources as outlined in the National Heritage Resources Act, 1999 (Act No 25 of 1999) (See Box 1).

Heritage resources (cultural resources) include all human-made phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

The term 'pre-historical' refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the Eskom Project Area, to the first appearance or use of 'modern' Western writing brought to the Eskom Project Area by the first Colonists who settled in this area during the 1840's.

The term 'relatively recent past' refers to the 20<sup>th</sup> century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may, in the near future, qualify as heritage resources.

It is not always possible, based on observations alone, to distinguish clearly between archaeological remains and historical remains, or between historical remains and remains from the relatively recent past. Although certain criteria may help to make this distinction possible, these criteria are not always present, or, when they are present, they are not always clear enough to interpret with great accuracy. Criteria such as square floor plans (a historical feature) may serve as a guideline. However, circular and square floors may occur together on the same site.

The term 'sensitive remains' is sometimes used to distinguish graves and cemeteries as well as ideologically significant features such as holy mountains, initiation sites or other sacred places. Graves in particular are not necessarily heritage resources if they date from the recent past and do not have head stones that are older than sixty years. The distinction between 'formal' and 'informal' graves in most instances also refers to graveyards that were used by colonists and by indigenous people. This distinction may be important as different cultural groups may uphold different traditions and values with regard to their ancestors. These values have to be recognised and honoured whenever graveyards are exhumed and relocated.

The term 'Stone Age' refers to the prehistoric past, although Late Stone Age peoples lived in South Africa well into the historical period. The Stone Age is divided into an Earlier Stone Age (3 million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years to 40 000 years ago) and the Late Stone Age (40 000 years to 200 years ago).

The term 'Iron Age' refers to the last two millennia and 'Early Iron Age' to the first thousand years AD. 'Late Iron Age' refers to the period between the 16<sup>th</sup> century and the 19<sup>th</sup> century and can therefore include the historical period.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the pre-historical, historical or the relatively recent past.

The term 'study area', or 'Eskom Project Area' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types of heritage resources in any given area.

Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include the documenting of rock art, engraving or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavations of archaeological sites; the exhumation of bodies and the relocation of graveyards, etc. Phase II work may require the input of specialists and requires the co-operation and approval of SAHRA.

## **5 CONTEXTUALISING THE ESKOM PROJECT AREA**

No fully-flexed archaeological survey has as yet been undertaken in the Eskom Project Area. From the limited knowledge gained from a few heritage impact assessment studies it is known that this area, as South Africa elsewhere, was occupied by humans from the earliest times. However, no evidence exists which indicate that the area was occupied by particular groups of people (cultures) over a considerable long period of time. It can therefore be expected that heritage remains which may occur will be fragmentary and scattered across the Eskom Project Area. It can also be expected that only a narrow range of all the types and ranges of heritage resources that are outlined in the National Heritage Resources Act (No 25 of 1999), will actually occur in the Eskom Project Area but not necessarily in the Eskom Project Area itself.

The following brief overview of archaeological (pre-historical), cultural and ethnographic information, as well as historical evidence, will help to contextualise the Eskom Project Area within the wider area.

### **3.1 Stone Age sites**

Stone Age sites are marked by stone artefacts that are found scattered on the surface of the earth or that are parts of the deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (ESA) (dating from 2.5 million years ago to 250 000 years ago), Middle Stone Age (MSA) (dating from 250 000 years ago to 22 000 years ago) and the Late Stone Age (LSA) (dating from 22 000 years ago to about 2 000 years ago).

The ESA is divided into the Olduwan and the Acheulian Industrial Complexes. The Acheulian dates from 500 000 years ago and is widely distributed across the world. Tools dating from the Acheulian also occur throughout South Africa. At least one Acheulian site is known to exist near Wonderboompoort, close to where the MRC

commences. It is highly likely that more Acheulian sites may occur in the MRC Project Area

MSA sites are probably the most common types of Stone Age sites which occur throughout South Africa. These sites are either associated with caves or with 'open' sites, i.e. with sites which occur on the surface of the earth. It can be expected that MSA sites may occur in eroded areas, dry dongas or ploughed agricultural fields. At least one MSA site was observed on the banks of the Kgobokwane River, near the villages of Matlala and Nganeng outside the Eskom Project Area.

The LSA is associated with small microlithic tools, rock paintings and engravings which were done by the San, Khoi Khoi and, in more recent times, by Negroid (Iron Age) farmers. LSA sites, like MSA artefacts, occur in cave sites or as scatters of tools on the surface of the earth. These types of artefacts may also be found in areas which have experienced erosion or where rock types, suitable for the manufacture of small LSA artefacts, abound. LSA tools were found with MSA tools in a donga near the banks of the Kgobokwane River, outside the Eskom Project Area.

### **3.2 Early Iron Age**

The Iron Age is associated with the first Bantu-Negroid agro-pastoralists who lived in semi-permanent villages and who practised metal working during the last two millennia. The Iron Age is divided into the Early Iron Age (EIA) (covers the 1<sup>st</sup> millennium AD) and the Later Iron Age (LIA) (covers the first 880 years of the 2<sup>nd</sup> millennium AD).

EIA communities lived near Groblersdal, to the east of the Eskom Project Area. These communities were culturally similar to the EIA communities who lived elsewhere in the Mpumalanga, Limpopo, KwaZulu/Natal and the North-West Province during the AD600-900. Early Iron Age sites have been recorded near

Marble Hall, in the Loskop Dam Nature Reserve and to the north of the Loskop Dam.

The presence of an EIA site was also recorded on the farm Derdepoort 326, north of the Magaliesberg but far to the south of the Eskom Project Area.

### **3.3 Late Iron Age and historical remains**

The Late Iron Age (LIA) is associated with ethnic groups such as the Tswana, Pedi, Ndebele, Zulu, Venda and other groups. Settlements that date from the LIA are mostly associated with stone walls and date from the last four hundred years. Large parts of the MRC Project Area are devoid of conspicuous mountain ranges, 'randjes' or kopjes where stone walled sites could have been established. However, the Ditlhabane mountain range which incorporates the Simon Skosana and the Mabusa Nature Reserves, occur near the Eskom Project Area. The mountainous terrain in these nature reserves may hold LIA sites.

According to oral tradition LIA clans occupied the Eskom Project Area prior to the arrival of the first Colonists in the middle of the 19<sup>th</sup> century. These people include the Kgatla of Motša who lived at Marapjane (Schilpadfontein) from as early as the 17<sup>th</sup> century and possibly Koni clans related to Matlala and Dikgale who established villages with similar names in the larger project area, probably more than two centuries ago, AD1790-1800. None of the early settlements that were occupied by these people have been documented. There are a few low, inconspicuous kopjes between Masobe (Pankop) and Mmametlhake as well as near Seabe and Marapjane, to the west of the Eskom Project Area, where settlements constructed with stone walls may be found.

Larger tribal groupings such as the Bantwane, Bakôpa and Bakgatla lived towards the Loskop Dam and Groblersdal in the east, outside the Eskom Project Area, whilst the Hwaduba and Kgatla Môsêtia and Kgatla Motša/Mmakau lived towards

the west and the south-west, also outside the Eskom Project Area. Consequently, no large tribal groupings occupied the Eskom Project Area during the LIA. People who lived in the project area during the last four hundred years must have been limited to small groups or clans who did not establish large permanent settlements with formidable proportions.

These small scattered groups in the Eskom Project Area were joined by the (Southern) Ndebele who arrived in this area from the 1920's onwards. The sojourn of the Southern Ndebele peoples, who initially left Kwa Zulu/Natal during the 16<sup>th</sup> century, ended in the Eskom Project Area when the Manala and the Ndzundza-Ndebele left their respective homes near the Bronberg in Pretoria and KoNomtjarhelo (Erholweni) near Roossenekal during the early 20<sup>th</sup> century. KwaNdebele officially became the homeland of the Southern Ndebele in the 1980's. The Eskom Project Area therefore is today primarily occupied by descendants of the following sections of the Ndebele, namely the Manala, Ndzundza-Ndebele and the Hwaduba. Historically, the Eskom Project Area has not been occupied for much longer than a century by substantial numbers of Ndebele people. Small groups and clans of the Kgatla, Koni and other minor Sotho communities also lived in the area but for a longer period of time.

Some individually known Ndebele sites close to the Eskom Project Area include Komjekejeke on Downbern 594 near Wallmansthal, north of Pretoria, and KwaMkina on Derdepoort 326, also north of Pretoria. KwaMkina has disappeared as this area has been developed in the more recent past. Kwamhlanga is located on Welgelegen 158 JR in the former KwaNdebele homeland.



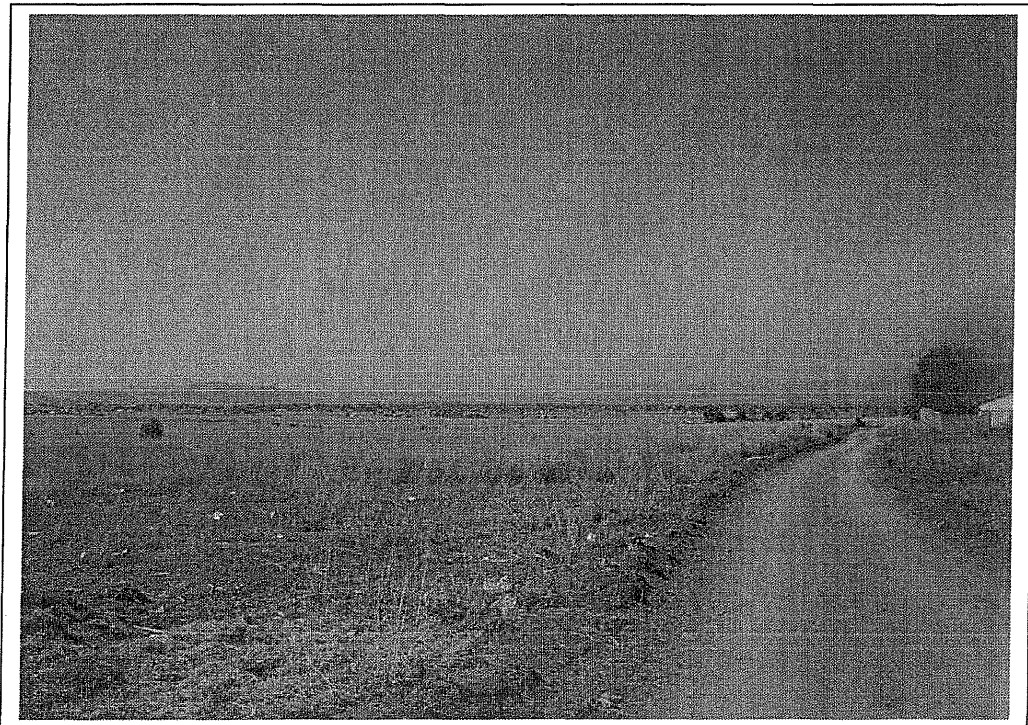
## 6 THE PHASE I HERITAGE IMPACT ASSESSMENT

The Phase I HIA study for the proposed 132kV power line running between three alternative routes between the Amandla and Kwaggafontein substations were subjected to a Phase I HIA study which revealed the following:

### 6.1 The Preferred Route

The preferred route runs as follows:

- From the Amandla Substation south-westwards along the eastern shoulder of Road 573 for approximately 800m before bending towards the east.
- The power line then runs across open veldt for more than a kilometre before bending to the south-east.



**Figure 2- The south-eastern stretch for the Preferred Route runs across open grass veldt before bending around the village of Mthenti (above).**

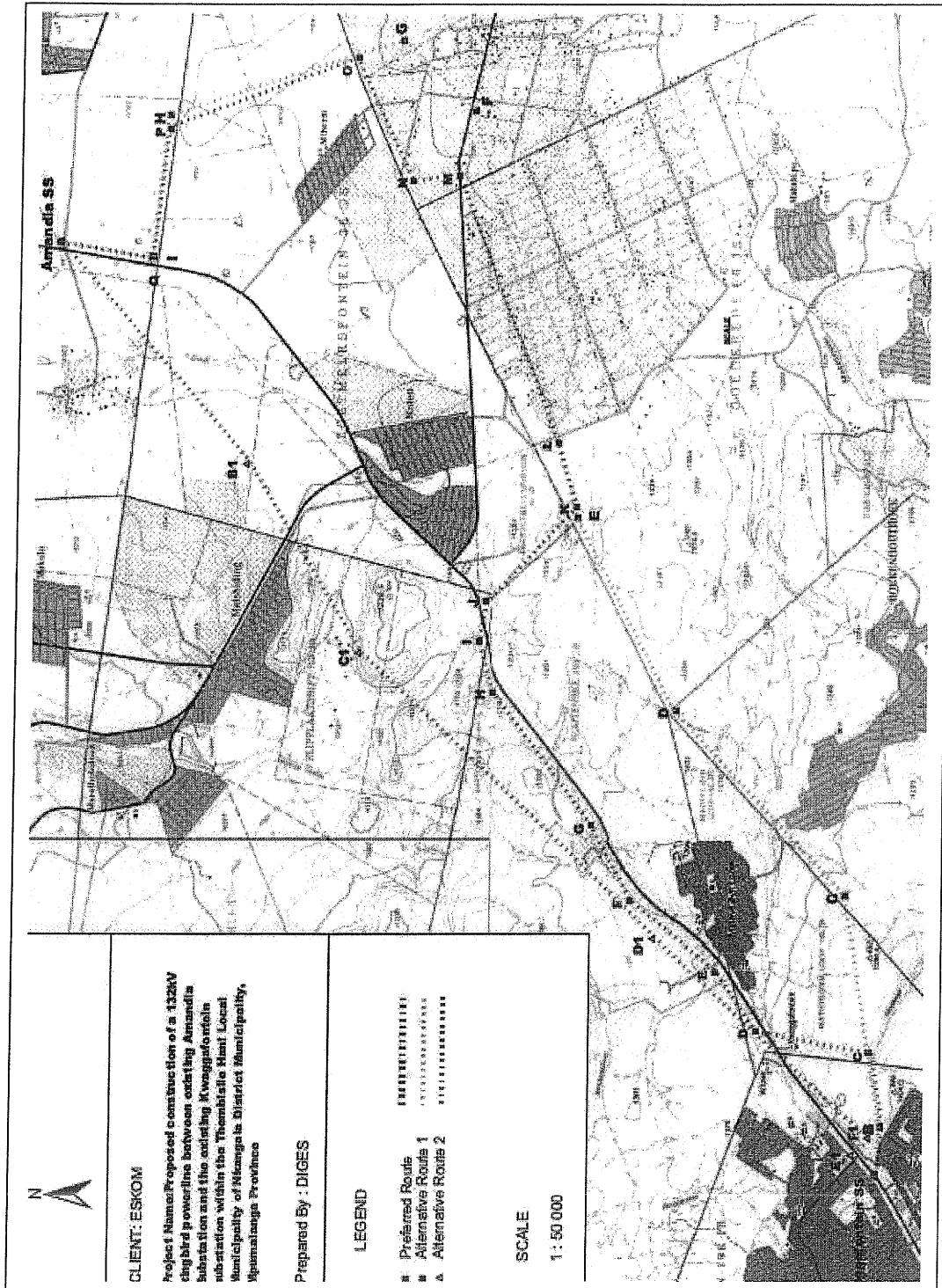
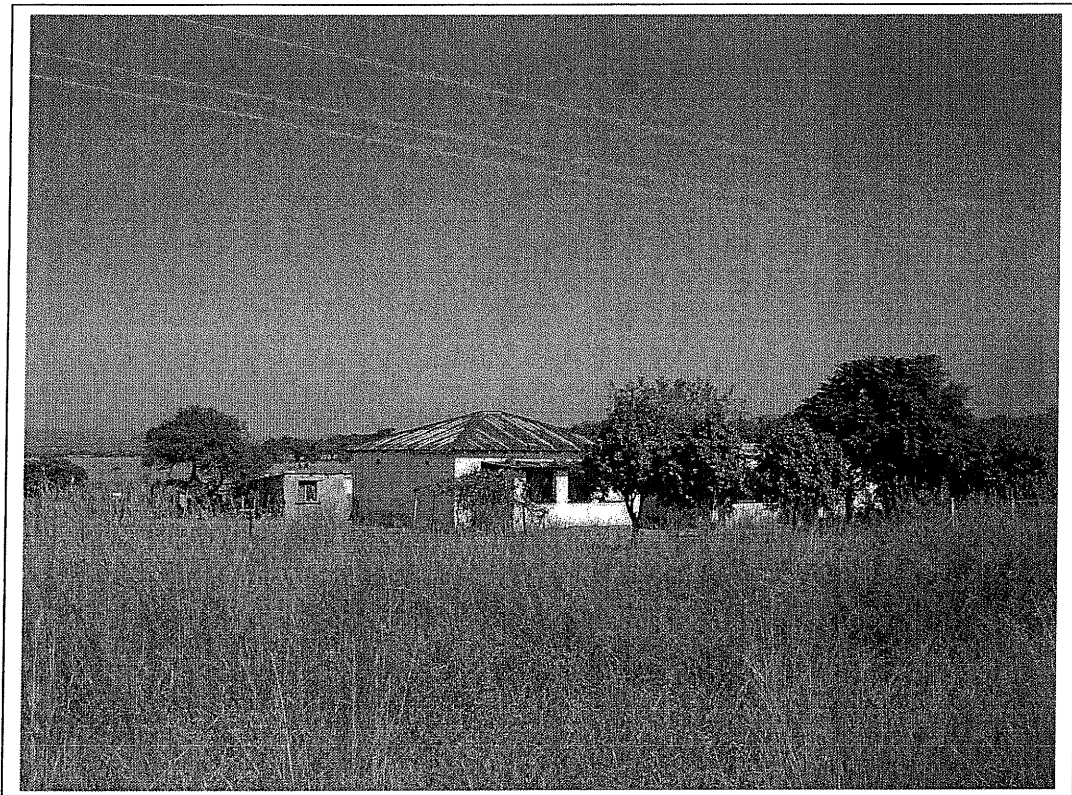


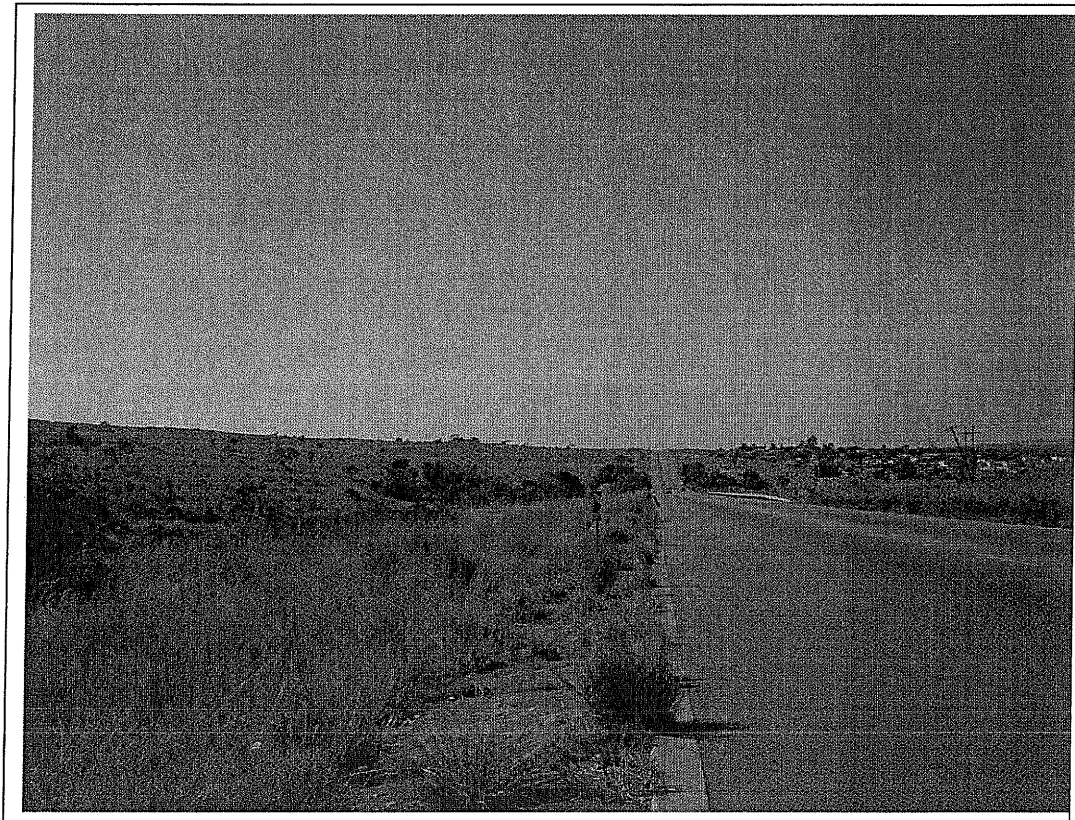
Figure 3- The Eskom Project Area involving a Preferred Route and two alternative power line routes for a proposed new 132kV power line between the Amandla and Kwaggafontein Substations (above).

- The south-eastern stretch runs across open veldt and a piece of agricultural land stretching over a distance of slightly more than 3km.
- The power line then bends twice, both times in a south-westerly direction in order to cross small holdings before crossing more small holdings in a south-westerly direction. This stretch is approximately 5km long.



**Figure 4- The south-western stretch for the Preferred Route runs across patches with open grass veldt as well as between agricultural small holdings, some with older (historical dwellings) before bending towards the north-west in order to join the northern shoulder of Road 573. None of the historical dwellings will be affected by the Preferred Route (above).**

- The power line then bends north-west before entering a mountainous area which encompasses the Simon Skosana Nature Reserve. It then joins the northern shoulder of Road 573.
- The power line then runs south-westwards along the northern shoulder of Road 573 for approximately 9km before jumping Road 573 in order to join the Kwaggafontein Substation near the southern shoulder of Road 573.



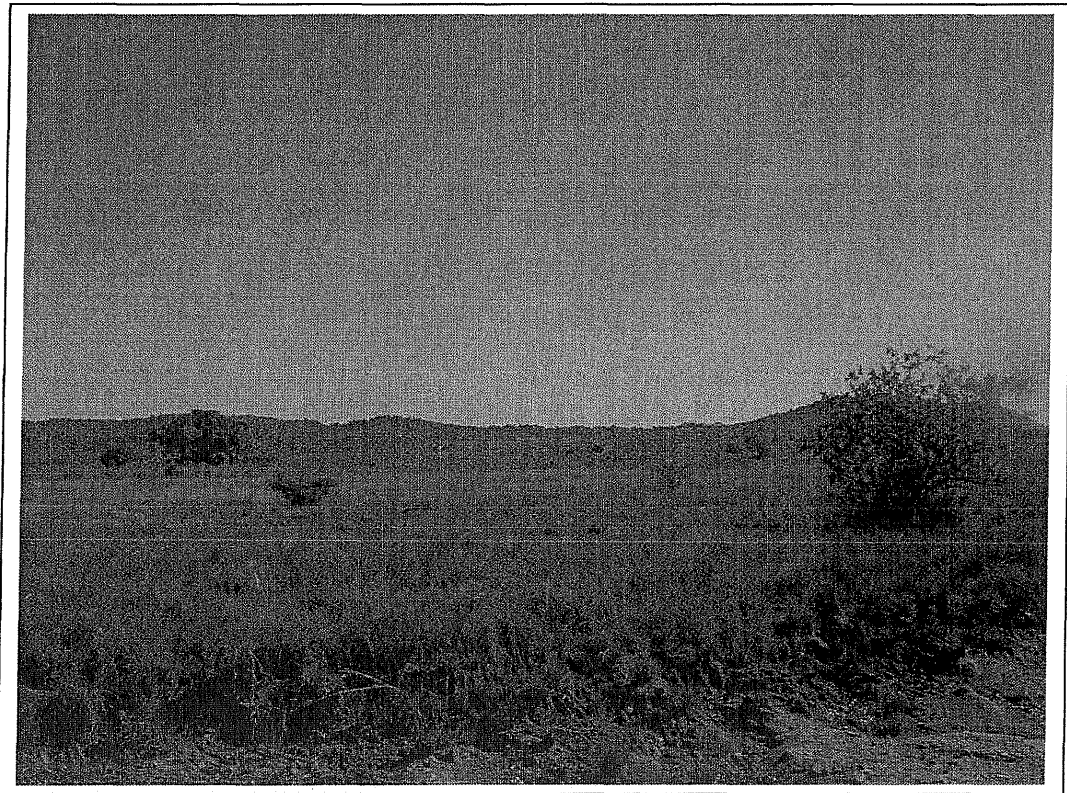
**Figure 5- The last stretch of the Preferred Route runs along the northern shoulder of Road 573 before jumping this road to join the Kwaggafontein Substation (above).**



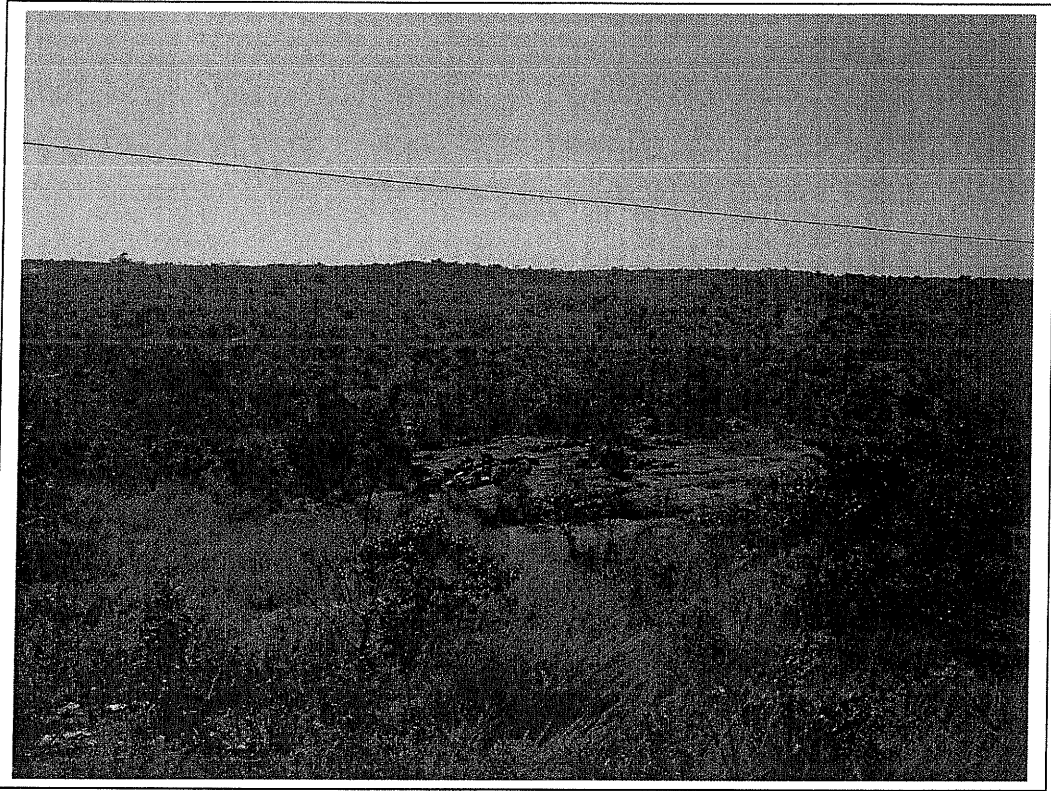
## 6.2 Alternative Route 01

Alternative Route 01 follows an identical trajectory than the Preferred Route from the Amandla Substation to the point where the Preferred Route bends to the north-west in order to join Road 573 in order to avoid the Simon Skosana Nature Reserve.

However, Alternative 01 runs across a mountainous stretch which is located in the Simon Skosana Nature Reserve before crossing a rough stretch of terrain consisting of low sandstone ridges followed by a landscape with softer rolling hills before entering the Kwaggafontein Substation.



**Figure 6- The final stretch before Alternative 01 enters the mountainous Simon Skosana Nature Reserve in the background (above).**



**Figure 7- The penultimate stretch of Alternative 01 crosses low sandstone ridges which are in a pristine condition (above).**

### **6.3 Alternative Route 02**

Alternative Route 02 runs south-westwards in a straight line crossing mountainous terrain on the farms Klipplaatdrift 153JR and Houtenbek 154JR before jumping Road 573 in order to join the Kwaggafontein Substation on the outskirts of the Kwaggafontein village.

Alternative 02 can be divided into three main stretches, namely:

- A first stretch that runs from the Amandla Substation across open veldt with no topographical features.

- A central stretch which crosses a high mountain as well as several other smaller mountains and foothills of these mountains which also represent a pristine area.
- A last stretch that runs across open veldt near the northern shoulder of Road 573.

#### **6.4 Summary**

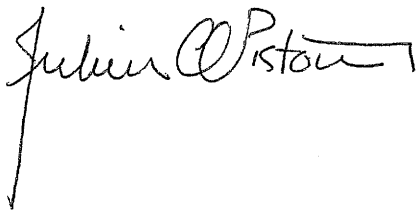
None of the proposed routes for the 132kV power line running between the Amandla and Kwaggafontein Substations revealed any outstanding or significant heritage resources. Therefore, the Preferred Route as well as the two Alternative Routes can be used for the construction of the new power line.

However, when considering heritage resources in a wider context or perspective it is recommended that the Preferred Route be used for the construction of the 132kV power line between the Amandla and the Kwaggafontein Substations due to the fact that the Preferred Route follows stretches of land which have been affected by development in the past while stretches along Alternative 01 and the total length of Alternative 02 crosses pristine land where undetected heritage resources may exist.

## 7 CONCLUSION AND RECOMMENDATIONS

None of the proposed routes for the 132kV power line running between the Amandla and Kwaggafontein Substations revealed any outstanding or significant heritage resources. Therefore, the Preferred Route as well as the two Alternative Routes can be used for the construction of the new power line.

However, when considering heritage resources in a wider context or perspective it is recommended that the Preferred Route be used for the construction of the 132kV power line between the Amandla and the Kwaggafontein Substations due to the fact that the Preferred Route follows stretches of land which have been affected by development in the past while stretches along Alternative 01 and the total length of Alternative 02 crosses pristine land where undetected heritage resources may exist.



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