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POLOKWANE ENVIRONMENTAL MANAGEMENT

LIMPOPO OPERATING UNIT

MBOFHO CONSULTING AND PROJECT MANAGEMENT

**A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR
ESKOM'S PROPOSED NEW 132kV LOOP-IN AND LOOP-OUT
POWER LINE FROM THE 132KV JANE FURSE/MERENSKY POWER
LINE TO THE PROPOSED NEW GROOTBOOM SUBSTATION IN THE
STEELPOORT VALLEY IN THE LIMPOPO PROVINCE 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 (No 25 of 1999) was done for Eskom's proposed Grootboom Project (the construction of a 132kV loop-in and loop-out power line from the existing 132kV Jane Furse/Merensky power line to the proposed Grootboom Substation) in the Steelpoort Valley in the Limpopo Province. The construction of the proposed 132kV power line and substation is hereafter referred to as the Eskom (Grootboom) Project whilst the area to be affected by the power line is referred to as the Eskom Project Area.

The aims with the Phase I HIA study were the following:

- To establish whether any of the types and ranges of heritage resources ('national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the Eskom Project Area and, if so to determine the significance of these heritage resources, and
- To make recommendations regarding the mitigation and management of significant heritage resources that may be affected by the Eskom Project.

The Phase I HIA study for the Eskom Project revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), in and near the Eskom Project Area, namely:

- The remains of a village which possibly dates from the recent past.
- A single grave

These heritage resources were geo-referenced and their positions were mapped (Figure 3; Table 1).

Possible impact on the heritage resources

It is highly unlikely that either the grave (G01) or the remains which date from the recent past will be affected when the proposed Eskom Project is constructed, operated or decommissioned.

The significance of the heritage resources therefore is not indicated whilst no mitigation measures are outlined as these remains will not be affected by the Eskom Project.

The preferred as well as the alternative routes for the 132kV Jane Furse/Merensky power line as well as the preferred or alternative sites for the proposed Grootboom Substation therefore is suitable from a heritage point to be utilized for the realisation of Eskom's proposed Grootboom Project.

General

This Phase I HIA study may have missed other 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 document contains the report on the results of the Phase I Heritage Impact Assessment (HIA) study that was done for Eskom's proposed 132kV loop-in and loop-out power line between the existing 132kV Jane Furse/Merensky power line and the proposed new Grootboom Substation in the Steelpoort Valley in the Limpopo Province. The Eskom Project is also referred to as the Eskom (Grootboom) Project.

Focused archaeological research has been conducted in the Limpopo Province for several decades. This research consists of surveys and of excavations of Stone Age and Iron Age sites as well as of the recording of rock art and historical sites in this area. 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 of South Africa 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 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 (the national estate) as outlined in Section 3 of the National Heritage Resources Act, 1999 (No 25 of 1999).

The National Heritage Resources Act (Act No 25 of 1999, Art 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 palaeontological 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 Tissues Act, 1983 (Act No 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including -
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological 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;
- (a) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (b) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (c) 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)
- (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 REPORT

Eskom intends to construct a proposed 132kV loop-in and loop-out power line and the proposed Grootboom Substation in the Steelpoort Valley in the Limpopo Province. This Eskom Project may have an influence on any of the types and ranges of heritage resources which are listed in Section 3 of the National Heritage Resources Act (No 25 of 1999).

In order to comply with heritage legislation, Eskom requires knowledge of the presence, relevance and the significance of any heritage resources that may be affected by the Eskom Project. Eskom needs this knowledge in order to take proactive measures with regard to any heritage resources that may be affected, damaged or destroyed when the Eskom Project is implemented. Mbofho Consulting and Project Management, the environmental company responsible for compiling the Environmental Impact Assessment (EIA) for the Eskom Project therefore commissioned the author to undertake a Phase I HIA study for the Eskom Project Area.

The aims with the Phase I HIA were the following:

- To establish whether any of the types and ranges of heritage resources ('national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the Eskom Project Area and, if so to determine the significance of these heritage resources, and
- To make recommendations regarding the mitigation and management of significant heritage resources that may be affected by the Eskom (Grootboom) Project.

3 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 Eskom Project Area.
- Synthesising all information obtained from the data bases, fieldwork, maps and literature survey.

3.1 Fieldwork

The larger Eskom Project Area was surveyed with a vehicle whilst the Eskom Project Area (proposed substation sites, loop-in and loop-out power line corridors and access roads) were surveyed on foot.

3.2 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 Eskom 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 Eskom Project Area.

Maps outlining the Eskom Project Area were studied (2430CA Steelpoort; 1: 50 000 topographical map and the 1:250 000 map).

3.3 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 authorization (permits) from SAHRA to conduct the mitigation measures.

3.4 Some remarks on terminology

Terms that may be used in this report are briefly outlined below:

- Conservation: The act of maintaining all or part of a resource (whether renewable or non-renewable) in its present condition in order to provide for its continued or future use. Conservation includes sustainable use, protection, maintenance, rehabilitation, restoration and enhancement of the natural and cultural environment.

- Cultural resource management: A process that consists of a range of interventions and provides a framework for informed and value-based decision-making. It integrates professional, technical and administrative functions and interventions that impact on cultural resources. Activities include planning, policy development, monitoring and assessment, auditing, implementation, maintenance, communication, and many others. All these activities are (or will be) based on sound research.
- Cultural resources: A broad, generic term covering any physical, natural and spiritual properties and features adapted, used and created by humans in the past and present. Cultural resources are the result of continuing human cultural activity and embody a range of community values and meanings. These resources are non-renewable and finite. Cultural resources include traditional systems of cultural practice, belief or social interaction. They can be, but are not necessarily identified with defined locations.
- Heritage resources: The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. 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.
- In-Situ Conservation: The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.
- 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 16th century and the 19th century and can therefore include the Historical Period.
- Maintenance: Keeping something in good health or repair.

- 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 Project Area, to the first appearance or use of 'modern' Western writing brought to the Eastern Highveld by the first Colonists who settled here from the 1840's onwards.
- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.
- Recent past: Refers to the 20th 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.
- Protected area: A geographically defined area designated and managed to achieve specific conservation objectives. Protected areas are dedicated primarily to the protection and enjoyment of natural or cultural heritage, to the maintenance of biodiversity, and to the maintenance of life-support systems. Various types of protected areas occur in South Africa.
- Reconstruction: Re-erecting a structure on its original site using original components.
- Replication: The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, object, or a part thereof, as it appeared at a specific period.
- Restoration: Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components.
- 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).

- Sustainability: The ability of an activity to continue indefinitely, at current and projected levels, without depleting social, financial, physical and other resources required to produce the expected benefits.
- Translocation: Dismantling a structure and re-erecting it on a new site using original components.
- Project Area: refers to the area (footprint) where the developer wants to focus its development activities (refer to Figure 3).
- Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types and ranges of heritage resources in any given Project Area (excluding paleontological remains as these studies are done by registered and accredited palaeontologists).
- 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 human remains and the relocation of graveyards, etc. Phase II work involve permitting processes, require the input of different specialists and the co-operation and approval of SAHRA.

4 THE ESKOM PROJECT AREA

4.1 Location

The Eskom Project is situated approximately ten kilometres to the south of the village of Steelpoort in the Steelpoort River Valley in the Limpopo Province. The Eskom Project Area is situated to the west and to the east of the Steelpoort River and the road that runs between Stoffberg and Steelpoort (R555). The larger portion of the project area falls on the farm Grootboom335KT and is wedged between the Tubatse Chrome Smelter (north-east), a residential area to the west of the Steelpoort River (north-west) and the Tubatse residential area (south-east) (2430CA Steelpoort; 1: 50 000 topographic map) (Figure 1).



Figure 1- View across the Eskom Project Area to the east of the R555 where the proposed Grootboom Substation will be established on one of two proposed options (above).

The SteelpoortValley's name is derived from the Steelpoort (Tubatse) River, one of the main geographical features in this valley. The SteelpoortRiver is a southern tributary of the OlifantsRiver. It flows from an altitude higher than 1 800m on the Highveld near

Wonderfontein in the Belfast district northwards and then north-eastwards to join the Olifants River before the latter cuts through the Drakensberg to enter the Lowveld.



Figure 2- The Eskom Project Area to the west of the R555 near the Steelpoort River. The plate shows the view along Eskom's existing 132kV Jane Furse/Merensky power line. The proposed loop-in and loop-out power line will run from this power line to the proposed Grootboom Substation further to the east (above).

Other prominent beacons in the wider study area include the Chromite Hills to the north-east of the study area and the imposing Leolo Mountain range in the study area. The Leolo Mountain range is known as a beacon in the origin history of the Pedi.

4.2 The developed nature of the Eskom Project Area

The Eskom Project Area is not a pristine piece of land any longer as it is wedged in between the Tubatse Chrome smelter), the Tubatse residential area and a second residential area which is located to the west of the Steelpoort River. The uninterrupted occupation of the Eskom Project Area, the utilization of the area for mining purposes over several decades as well as increasing development in the

Steelpoort in general, is gradually and inevitably changing this extraordinary cultural landscape with its unique heritage character and features.

4.3 The nature of the Eskom Project

The key development components of the proposed Eskom Project include the following:

The construction of a proposed 132kV loop-in and loop-out power line between the existing 132kV Jane Furse/Merensky power line and the proposed Grootboom Substation. Three options are proposed for this new 132kV power line, namely:

- The preferred power line route (red) which runs between the preferred option for the proposed Grootboom Substation and the existing Jane Furse/Merensky power line.
- The two alternative power line routes (purple and yellow) which runs from the two alternative Grootboom Substation sites to the existing Jane Furse/Merensky power line.

The construction of the proposed Grootboom Substation. Three alternatives are proposed for this substation, namely:

- The preferred site (red) for the Grootboom Substation (SS01).
- The second alternative site (purple) for the proposed Grootboom Substation (SS02).
- The third alternative site (yellow) for the proposed Grootboom Substation (yellow).

The preferred and alternative power line routes and the preferred and alternative options for the Grootboom substation are referred to as the Eskom Project whilst the area to be affected by the proposed power line and substation is referred to as the Eskom Project Area.

4.4 The heritage potential of the Eskom Project Area

The Eskom Project is located in the central part of the Steelpoort Valley. This region is part of the heartland of the pre-historical and the historical Pedi chiefdom and is associated with a wide range of heritage resources. It is therefore necessary that the archaeological and historical significance of this cultural landscape be described and explained in more detail before the results of the Phase II HIA study is discussed (see Part 5, 'Contextualising the Project Area').

5 CONTEXTUALISING THE ESKOM PROJECT AREA

The Eskom Project Area is located in the heartland of the Steelpoort Valley which is renowned for its rich and diverse range of heritage resources. The following background information is aimed at contextualising the Eskom Project Area with regard to the presence of certain types and ranges of heritage resources that may occur in or near the Eskom Project Area.

5.1 Pre-historical context

Stone Age sites are scattered in the extensive network of dongas which occur across the wide valleys floors between the Leolo and other mountain ranges in the northern part of the SteelpoortValley. Some sites have been observed by the author on farms such as Hendriksplaats 281, Derde Gelid 278, Onverwacht 292, Winterveld 293, Annex Grootboom 335 and Apiesboomen 295. These stone tools date from the Early Stone Age (500 000 to 200 000 years ago), the Middle Stone Age (200 000 to 40 000 years ago) and from the Late Stone Age (40 000 to 200 years ago).

However, no archaeological survey for Stone Age sites as part of any extensive or in-depth Stone Age research project has to the knowledge of this author been done in the SteelpoortRiverValley as yet.

5.2 Pre-historical and early Historical Period

The origins of the first Bantu-Negroid farming communities who practised agriculture, live-stock herding and metal working can be traced to the SteelpoortValley. These Early Iron Age farming communities whose settlements have been recorded on amongst others Hendriksplaats 281 and Derde Gelid 278 were related to Early Iron Age communities who, contemporaneously, AD500 to AD900, settled further towards the east in the Lydenburg Valley. One of the settlements belonging to the Early Iron Age Lydenburg culture won international acclaim as the Lydenburg clay masks were discovered at this site near the Sterkspruit, south of Lydenburg.

The historical period in the SteelpoortValley is associated with the second millennium AD when a predominantly Northern Sotho-speaking population occupied the Steelpoort. These people are part of a larger Northern Sotho-speaking community who occupy a vast area between the LimpopoRiver in the north, the Drakensberg in the east and the SekhukhuneMountains in the west. Numerous divisions and groups or clans therefore occupy this vast region. The history of the people of this area can be divided into several periods:

The earliest period of settlement is characterized by small groups of Bantu people who started to drive the San and KhoiKhoi from the area and who are difficult to identify. From approximately AD1700 ancestral groupings of the present inhabitants of the land began to arrive in the area. Groups that can be distinguished include:

- A large group of Sotho who came from the north-eastern parts of the Lowveld and who settled on the plateau to the north and to the south of the Strydpoortberge.
- Small groups of Kgatla and Huruthshe-Kwena origin moved from the Tswana area (Brits and Rustenburg) into the territory. Amongst them were the present Pedi (or Rota) who moved into what is now Sekhukhuneland, where they subjected the Sotho already living there.
- During these times Sekhukhuneland was also penetrated by Sotho arriving from the south-east.
- After AD1600 the Northern Ndebele arrived from the south-east and settled in what is now the Mokerong district.

It is assumed that during the period from AD1700 to AD1826 the Pedi took political control over the territory previously known as Lebowa, but to the south of the Strydpoortberge. The Pedi chiefdom reached its zenith during the reign of Thulare who died in 1824.

During the disruption of the *difaqane* (AD1822 to AD1828) Mzilikazi attacked the Pedi from the south-east in 1826 and in 1827/1828. This caused large-scale depopulation of the southern part of the Northern-Sotho territory. The Pedi sought refuge in the Soutpansberg in 1822 and only returned in 1828.

After the wars with Mzilikazi there were wars with the Swazi. The Voortrekkers arrived in the Steelpoort area in the late 1840's. Several armed struggles between the Voortrekkers and the Pedi ensued.

5.3 The Historical Period

After the British annexed the Transvaal (AD1877 to AD1881) the Pedi was subjugated by the British who were supported by the Swazi during the war of Sekhukhune in 1879 (see more detail below).

In 1842 AndriesHendrikPotgieter wished to move from the British sphere of influence and to establish trade relations with Delagoa Bay. He moved with his followers from Potchefstroom to the Eastern Transvaal and founded AndriesOhrigstad (named after himself and GergiosGerhardusOhrig, a merchant from Amsterdam who was well disposed towards the Voortrekkers). The name was later abbreviated to Ohrigstad. The town also served as the seat of the Volksraad.

During 1848 to 1849 Ohrigstad was abandoned when many people died of malaria. The town of Lydenburg was founded further to the south near the confluence of the Sterkspruit and the SpekboomRiver. This area was located on higher ground and was therefore healthier than Ohrigstad.

The railway line between Steelpoort and Lydenburg was constructed in 1924 due to an increase in the mining of chrome and magnetite. The name Steelpoort is derived from a hunting expedition that took place either in the late 19th century or the early 20th century. When a group of Voortrekkers from Natal under Frans Joubert had settled there, a man called Scholtz shot an elephant at dusk and on returning next morning found that the tusks had been removed. When the wagons were searched, the tusks were found in the possession of a man called Botha, after which the farm Bothashoek was named. Because an elephant had been killed there, the poort was named Olifantspoort. The river flowing through the poort was called SteelpoortRiver ('steel' meaning steal).

The Pedi were governed by Thulware until his death in 1824. His main village was Monganeng on the banks of the Tubatse River. His son, Sekwati, fled to the Soutpansberg in the north during the raids of Mzilikazi in 1822. He returned in 1828 and occupied the mountain fortress Phiring, his capital from where he united the Pedi.

The Pedi initially maintained good relations with the Voortrekkers who arrived in Ohrigstad from 1845. However, after a clash with Andries Hendrik Potgieter in 1852 Sekwati moved his capital to Thabaya Mosego. Border disputes with the Zuid-Afrikaansche Republiek (ZAR) were settled in 1857 with an accord that stated that the Steelpoort River served as the border between Pedi land and the Lydenburg Republic.

Sekwati gave the Berlin Missionary Society permission to establish the Maandagshoek missionary station in Pedi territory. After Sekwati's death in 1861, his son Sekhukhune succeeded his father and also established his village at Thaba Mosego. He ordered the Berlin Missionary Society to discontinue their work and the mission station was burn down. Alexander Merensky, one of the missionaries, thereafter established the well-known Botšabelo missionary station at Middelburg.

The good relationship between the ZAR and the Pedi was gradually weakened. The period from 1876 to 1879 was one of conflict and war, first with the ZAR and then with the British who annexed the Transvaal in 1877. During the First Sekhukhune War in August 1876, the Voortrekkers attacked Thaba Mosego and partly destroyed the settlement.

The Second Sekhukhune War followed in November 1879 during which Sekhukhune was captured in the Mamatamageng cave and sent to prison in Pretoria. Two divisions attacked the Pedi. The main division, comprised of 3 000 whites and 2 500 black allies, attacked from the north-east. The Lydenburg division consist of 5 000 to 8 000 Swazi *impi*, 400 other black allies and 400 white soldiers who attacked from Burgersfort in the south. The Second Sekhukhune War is associated with the

settlements of ThabaMosego and Tšate, a new village established by Sekhukhune close to ThabaMosego.

5.4 The early mining period

The Eskom Project Area is located on the eastern limb of the Merensky Reef in the northern part of the Steelpoort Valley. Today it is known that the Merensky Reef is composed of the crescent-shaped Bushveld Complex that stretches across the central part of South Africa. This Reef is known for its wealth of mineral resources, generally referred to as the platinum-group metals (PGM's).

The first discovery of the eastern limb of the Merensky Reef can be traced back to the early decades of the 20th century when the reef was exposed from the Leolo Mountain range in the north to where the Steenkampsberg, west of the Dwars River (Dwars River range), commences as a continuation of the Leolo Mountain range in the south.

The norite zone in which the Merensky Reef outcrops is a rugged mountainous terrain, except in the extreme north-western sector. The area is dominated by high, rough-looking scrub-covered hills and ridges that alternate with flat-bottomed valleys. Four perennial streams, the Olifants, Tubatse, Dwars and Moopetsi Rivers traverse the platinum fields with a number of powerful springs in them.

5.5 The discovery of platinum

The first reference to platinum is found in a narrative published in 1748 by Don Antonio de Ullou y Gracia de la Torre, in which he mentioned that a heavy silvery metal occurred together with gold in New Granada (now called Columbia). The metal was described by Sir William Watson, an English physicist, as a semi-metal or metalloid in 1750. Experiments showed that platinum-rich grains consist of a mixture of several metals, namely platinum (Pt), palladium (Pd), iridium (Ir), ruthenium (Ru) and osmium (Os).

The discovery of platinum in South Africa dates back to the late 19th century. In 1892, William Bettel identified osmium-iridium alloy particles in concentrate from the Witwatersrand gold mines. Bettel and Hall and Humphrey also recorded the presence of platinum in the chromitite layers of the Bushveld Complex. Wagner reported the presence of sperrylite in the ore bodies at Vlakfontein near the Pilanesberg. However, none of these discoveries were considered to be of any economic significance. The first deposits that were economically viable, called the Waterberg Platinum, were found by Adolf Erasmus in the Rooibergfellsites between Nylstroom and Potgietersrust. These deposits did not prove to be significant. AndriesLombaard's discovery of platinum nuggets in the MoopetsiRiver on the farm Maandagshoek in the Steelpoort area in 1924 can be considered the initial discovery of the Merensky Reef.

The Merensky Reef occurs, geographically, in the westerly and the easterly parts of the Bushveld Complex. These two limbs of the Complex are confined to the North-WestProvince and to the Northern and the MpumalangaProvinces of South Africa.

The Merensky Reef has been traced for a total distance strike extent of 283km, 138 kilometres of which is in the eastern limb and 145 kilometres in the western limb of the Bushveld Complex. Vertical depths of 1 900m have been registered along the Reef, which also indicates its continuity. The eastern limb of the Reef is geologically less well known than the eastern limb, because mining activities in this part of the Reef have been limited.

6 THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY

6.1 Types and ranges of heritage resources

The Phase I HIA study for the Eskom Project revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), in and near the Eskom Project Area, namely:

- The remains of a village which dates from the recent past (RP01).
- A single grave (GY01).

These heritage resources were geo-referenced and were mapped (Figure 3, Table 1).

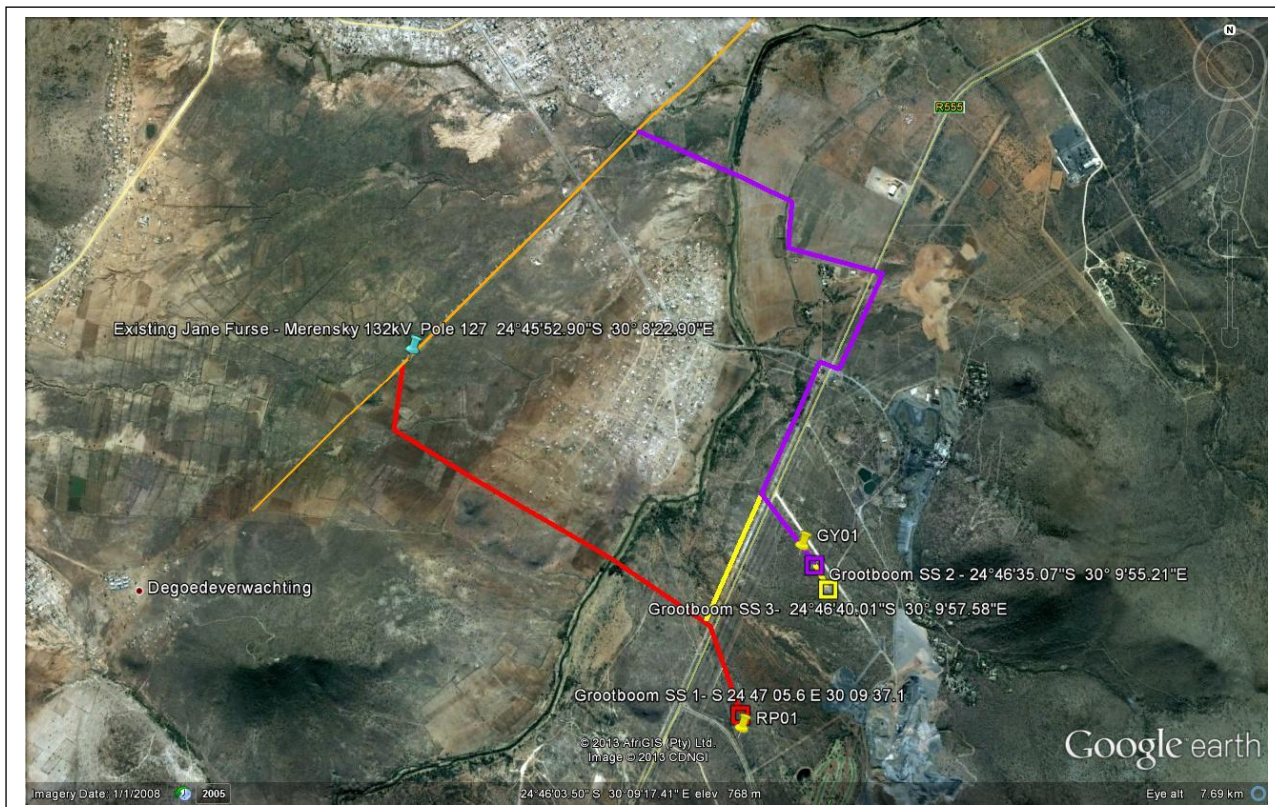


Figure 3- Eskom's preferred and alternative 132kV loop-in and loop-out power lines between the existing Jane Furse/Merensky power line and the preferred and the alternative Grootboom Substation sites near Steelpoort in the Limpopo Province. Note the presence of a grave (GY01) and a site dating from the recent past (RP01) in the Eskom Project Area (above). [Red = preferred options for power lines and substation; yellow and purple = alternative options]

6.1.1 Remains dating from the recent past

A cleared area (or open spot) occurs in the bush in close proximity where the preferred site for the proposed Grootboom Substation is indicated. (Site RP01). It seems as if the open area in the bush may have been cleared as a result of human activities over a prolonged period of time.

However, no evidence of any material remains such as artefacts or remains of building structures occur in this open area.

The only evidence for the earlier human occupation of this area occurs some distance (approximately 300m) away from the cleared area. Here, are the remains of low, rudimentary stone walls. These stone walls and surrounding area is also not associated with any material remains.



Figure 4- A cleared spot in the bush near the preferred site for the Grootboom Substation may represent a settlement which dates from the recent past. However, no material remains were observed in this area (above).



Figure 5- Rudimentary remains of low stone walls which may have served as the foundations of a structure such as dwelling with was constructed with soil. These remains date from the recent past (above)



Figure 6- A single grave (G01) which is demarcated with upright stones (above) occurs near the two alternatives for the Grootboom Substation. This grave probably dates from the recent past.

6.1.2 Grave

A single grave (GY01) which is associated with a low stone wall occurs near the two alternative sites for the Grootboom Substation.

The grave is demarcated with upright stones. It is not fitted with any headstone with an inscription.

It is highly likely that the grave dates from the more recent past.

6.2 Possible impact on the heritage resources

It is highly unlikely that either the grave (GY01) or the remains which date from the recent past (RP01) will be affected when the proposed Eskom Project is constructed, operated or decommissioned.

6.3 The significance and mitigation of the heritage resources

The significance of the heritage resources therefore is not indicated whilst no mitigation measures are outlined as these remains will not be affected by the Eskom Project.

6.4 Table

Grave	COORDINATES	SIGNIFICANCE
GY01: Single grave with associated stone wall	24 46.554s 30 09.86e	HIGH
RP01: Remains from the recent past	24 47.184s 30 09.636e	Low

Table 1- Coordinates for GY01 and remains from the recent past (RP01) which is located near the Eskom Project Area (above).

7 CONCLUSION AND RECOMMENDATIONS

The Phase I HIA study for the Eskom Project revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), in and near the Eskom Project Area, namely:

- The remains of a village which possibly dates from the recent past.
- A single grave

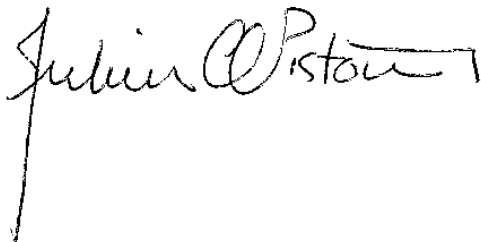
These heritage resources were geo-referenced and their positions were mapped (Figure 3; Table 1).

Possible impact on the heritage resources

It is highly unlikely that either the grave (GY01) or the remains which date from the recent past (RP01) will be affected when the proposed Eskom Project is constructed, operated or decommissioned.

The significance of the heritage resources therefore is not indicated whilst no mitigation measures are outlined as these remains will not be affected by the Eskom Project.

The preferred as well as the alternative routes for the 132kV Jane Furse/Merensky power line as well as the preferred or alternative sites for the proposed Grootboom Substation therefore is suitable from a heritage point to be utilized for the construction of Eskom's proposed Grootboom Project.



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