

**PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT
SPECIALIST STUDY REPORT**

**PROPOSED CONSTRUCTION OF A NEW 6 KM 88KV KOSTER
POWERLINE IN KGETHENG LOCAL MUNICIPALITY, BOJANALA
DISTRICT, NORTH WEST PROVINCE.**

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REPORT DETAILS

PROJECT NAME: PROPOSED CONSTRUCTION OF A NEW 6KM 88KV KOSTER POWER LINE IN KGETLENG LOCAL MUNICIPALITY, BOJANALA DISTRICT NORTH WEST PROVINCE.

REPORT TITLE: ARCHAEOLOGICAL AND CULTURALAND ARCHAEOLOGICAL HERITAGE ASSESSMENT SPECIALIST STUDY FOR PROPOSED CONSTRUCTION OF A NEW 6KM 88KV KOSTER POWER LINE IN KGETHENG LOCAL MUNICIPALITY, BOJANALA DISTRICT, NORTH WEST PROVINCE.

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PROFESSIONAL SERVICE PROVIDER (PSP) Nzumbululo Heritage Solutions (South Africa) cc.

MANAGEMENT SUMMARY

Background

Limpopo Water Initiative on behalf of Eskom, commissioned Nzumbululo Heritage Solutions (South Africa) (HeSSA) to conduct an archaeological and heritage impact assessment [HIA] study for proposed construction of a new 6km 88kv Koster power line. The development will include construction of a 6km power line from Koster substation to a connecting point at the 28km peg along the R52 road from Rustenburg in Kgetleng Local Municipality, Bojanala District in the North West province. This heritage impact assessment (HIA) study was conducted as part of the specialist studies for the EIA exercise. The HIA focuses on potential impacts on archaeological, cultural, and historical heritage resources associated with the proposed construction's receiving environment.

Summary Results

The field survey covered the proposed power-line servitude route. Historic sites were recorded in the project area. A contemporary cemetery was identified within the vicinity of the proposed power-line route. No archaeological sites were recorded within the proposed powerline servitude.

Summary Recommendations

We concluded that the proposed development of the powerline may proceed subject to the following recommendations:

- There being no archaeological or significant historical sites identified on the direct path of the powerline development, we recommend to the heritage authorities to approve the proposed power line development.
- As a cautionary measure, should the project be approved to proceed as proposed, an archaeological walk-down survey must be conducted in order to ensure that no tower or pole foundation will be sited on previously unidentified archaeological sites. Such specific recommendations should be incorporated in the project development Environmental Management Plan (EMP).
- The foot print impact of each pole should be kept to minimal to limit the possibility of encountering chance finds.
- Construction camps and access roads during construction phase should be approved as part of the project monitoring to ensure that no archaeological or historic sites will be affected
- Furthermore, the construction team should be informed about the value of the cultural heritage resources in general so as to ensure that they do not destroy the chance archaeological sites they may encounter during working on the power-line route.

TABLE OF CONTENTS

REPORT DETAILS II

MANAGEMENT SUMMARY III

ABBREVIATIONS - 1 -

DEFINITIONS - 2 -

PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT..... - 3 -

PROPOSED CONSTRUCTION OF A NEW 6 KM 88 KV KOSTER POWER LINE IN KGETLENG LOCAL MUNICIPALITY, BOJANALA DISTRICT,..... - 3 -

NORTH WEST PROVINCE. - 3 -

1 INTRODUCTION - 3 -

2 AIMS OF THE HIA STUDY..... - 3 -

3 BACKGROUND SUMMARY..... - 4 -

4. HIA STUDY METHODS - 5 -

4.1 ROUTE DESCRIPTION - 6 -

5. RESULTS OF THE HIA. - 7 -

5.1. RESULTS OF ARCHAEOLOGICAL EXAMINATIONS FOR THE PROPOSED POWER-LINE ROUTE..... - 7 -

Location Details - 7 -

Archaeological and Cultural Sites..... - 8 -

Burial grounds and graves - 10 -

Significance valuation Burial Ground, Historic Cemeteries and Graves..... - 10 -

6 STATEMENT OF OVERALL IMPACTS..... - 10 -

7 OVERALL RECOMMENDATIONS..... - 11 -

8 BIBLIOGRAPHY..... - 11 -

ABBREVIATIONS

HIA	Heritage Impact Assessment
EIA	Environmental Impact Assessment
HeSSA	Nzumbululo Heritage Solutions (South Africa)
LIA	Late Iron Age
SAHRA	South African Heritage Resources Agency

DEFINITIONS

Archaeological Material remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures.

Chance Finds Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Cultural Heritage Resources Same as Heritage Resources as defined and used in the South African Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and palaeontological sites, historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or graves and their associated materials; geological or natural features of cultural importance or scientific significance. Cultural Heritage Resources also include intangible resources such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

Cultural Significance The complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

Grave A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery.

Historic Material remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

In Situ material *Material culture* and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Late Iron Age this period is associated with the development of complex societies and state systems in southern Africa.

Material culture Buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Site A distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT

SPECIALIST STUDY REPORT

PROPOSED CONSTRUCTION OF A NEW 6 KM 88 KV KOSTER POWER LINE IN KGETLENG LOCAL MUNICIPALITY, BOJANALA DISTRICT, NORTH WEST PROVINCE.

1 INTRODUCTION

This Archaeological and Heritage Impact Assessment (HIA) study was conducted to fulfil the requirements of the National Heritage Resources Act, Act 25 of 1999 Section 38. It was conducted as part of the Environmental Impact Assessment (EIA) for the proposed power-line and associated electricity distribution infrastructural development in the Koster farming areas of North West Province (see Fig. 1). The HIA study focuses on identifying and assessing potential impacts on archaeological, cultural, and historical heritage resources associated with the proposed project (Table 1).

Table 1: Terms of Reference for the Heritage Study for the proposed powerline construction project.

PURPOSE	ACTIVITIES
<ul style="list-style-type: none"> <input type="checkbox"/> Fulfill the statutory requirements of the National Heritage Resources Act, Act 25 of 1999, Section 38. <input type="checkbox"/> To identify and describe (in terms of their conservation and / or preservation importance) sites of cultural and/or archaeological importance that may be affected by the proposed powerline construction project area. This study should include the identification of gravesites. <input type="checkbox"/> Identify and describe impacts to archaeological and cultural resources. <input type="checkbox"/> Make recommendations on mitigation measures. <input type="checkbox"/> Identify and describe management measures. 	<ul style="list-style-type: none"> <input type="checkbox"/> Identify, describe and map sites of archaeological, historical or cultural interest affected by the proposed powerline construction project. <input type="checkbox"/> Identify, where possible, the gravesites affected by the development. <input type="checkbox"/> Liaise with the local communities (if applicable) with regards to the impact of the development on the heritage resources. <input type="checkbox"/> Describe the importance or significance of these sites and whether these sites need to be conserved, protected or relocated. <input type="checkbox"/> Describe the procedures for mitigation or relocation of sites and provide an indication of time required for these management measures to be implemented. <input type="checkbox"/> Document findings and recommendations.

2 AIMS OF THE HIA STUDY

This HIA study primarily seeks to fulfil the requirements of South African Heritage Resources Act (Act No. 25 of 1999) Section 38 by:

- Identifying heritage resources affected by the proposed power line and the associated infrastructural development.
- Assess the significance of the resources.

- Evaluate the impact thereon with respect to the socio-economic opportunities and benefits that would be derived from the proposed power line construction.
- Consult with the affected and other interested parties in regard to the impact on the heritage resources in the project's receiving environment.
- Make recommendations on mitigation measures with the view to reduce specific adverse impacts and enhance specific positive impacts on the heritage resources.
- Identify and discuss with local communities (where applicable) on potential impacts of the proposed power-line construction on graves and burials sites within the affected area and make the necessary recommendations on how to handle the matter.
- Take responsibility for communicating with the SAHRA and other authorities in order to obtain the relevant permits and authorization.

3 BACKGROUND SUMMARY

The proposed development consists of construction of a new 6km 88KV power line to link Koster substation to the connecting point at the 28 km peg along the R52 road from Rustenburg in the North West province (see Fig. 1). The proposed line will connect at the 28km peg along the R52 road from Rustenburg. The line will cross R52 road and run parallel to the road towards Koster. The line will cross the R52 road again and turn south westwards towards Koster. The line will then cross Millville road and head westwards to join the Swartraggens power line. The proposed project development is located in a commercial agricultural landscape marked with built up areas, road networks, power and telecommunication lines, boundary fence lines, grazing land and agricultural fields (Plate 1 to 9).

From a culture geography and history perspective, Koster area, within which the project falls, is in the open veld with low lying mountain ranges and kopjes in the North West province. Iron Age sites associated with the ancestors of the modern Sotho-Tswana, Po and Ndebele speaking communities are wide spread in the region. Archaeologically, the area is associated with Sotho Tswana communities and have yielded four ceramic sequences of the Urehwe tradition: Ntsuanatsatsi (1450-1650), Olifantspoort (AD 1500 -1700) and Uitkomst (AD 1700-1850) and Buispoort (1700-1840) [Huffman 2007: 443]. This area was historically occupied by predominantly Sotho Tswana -speaking groups and Po before it was briefly dominated by Mzilikazi's Ndebele during the *mfecane*. Around the 1830s, the region also witnessed the massive movements associated with the *mfencane* ('wandering hordes'). The causes and consequences of the *mfencane* are well documented elsewhere (e.g. Hamilton 1995; Cobbing 1988).

Prior to the North West region being incorporated into the colonial administration of the Transvaal, the region experienced several episodes of white settler migration and settler settlements as well as the associated colonial wars such as the Anglo-Boer War, which ended in 1901. Today the

project area of Koster is predominantly commercial farming and mining area. Most of the power line route is under, cornfields and grazing land, developed landscapes and infrastructures such as access roads, existing power lines, farm boundary lines and farm and farm buildings.

4. HIA STUDY METHODS

The background information on the existing environment in the project area was recorded during a reconnaissance survey which was conducted with the assistance of the project environmentalists. The reconnaissance study was conducted in October 2008 during which we gathered geographical and topographical background information along the proposed Koster to 28km peg along the R52 road from Rustenburg power-line route (Fig 1). We subsequently conducted a detailed field survey of the affected landscape. The survey was aimed at identifying archaeological sites and physical cultural resources signatures as well as other cultural heritage sites such as graves, burial and religious or sacred sites that may be affected by the proposed power-line construction project. A team of two archaeologists systematically transacted the power-line route on foot and slow moving vehicle in some sections.

Distribution of archaeological sites across the landscape depends on a number of related factors, such as preservation conditions over time, the degree to which sites are exposed through erosion or lack of vegetation and the actual decisions of the people who created the sites and deposited the materials originally. Using the preliminary findings from the reconnaissance study we applied a judgement surveying strategy (stratified sampling). We divided the landscape through which the proposed power line would pass into geographical zones (built up sections, land under crops, open grass lands, hills, gully, ridge, and stream or river valley section). Naturally, we placed more emphasis on areas we believed had potential of archaeological, historical or other physical cultural resources.



Plate 1 and 2: Twenty eight km peg, connecting point of the proposed 6km power line, note that at this point the power line will cross R52 and run parallel to the road and existing power line (Plate 2) towards Koster and Swartraggens power line pointed by the arrow.



Plates 3 and 4: In some sections of the proposed power-line route will cut through cornfields and old cultivation land presently used for livestock grazing. The project area is currently heavily developed with existing power lines, roads, farm buildings and associated infrastructure

4.1 ROUTE DESCRIPTION

From the connecting point off the existing powerline, the proposed power-line route will cross R52 Road and run parallel to road on the eastern side for more that a kilometre before crossing R52 road again. The line will traverse across eroded section through communal grazing, and agricultural land to terminate at the Koster substation. The line would go through heavily degraded landscape where there are road construction activities, commercial grazing land, Farm buildings, tarred and access roads, (Plates 1 & 2). Under these disturbed conditions, the chances for archaeological material preserved *in situ* in most portions of the power line route were limited. Nonetheless, we could not rule out the discovery of archaeological sites in the project area.

Figure 1: Proposed construction of 88kv power line from Koster project area [2528]

- S25° 49,27.81' E26° 57,40.00' (Section of the power line where it will cross R52 road.)
- S25° 49,19.82' E26° 57,46.68' (Starting point of the power line adjacent to the 28 km peg of the R52 road from Rustenburg to Koster note that there are existing 400kv power lines at the starting point.)
- S25° 50 033' E026° 56 197'(Contemporary cemetery on portion 42 of Kortfontein)
- S25° 49 723' E026° 57 550'(Shumani Broillers, poultry infrastructure depicted on plate 7)
- S25 50 444' E026 53 438'(Informal settlement adjacent to the power line route)



Plate 5 and 6: The proposed power line route will traverse through already developed and disturbed areas such as this section where the line will cross road network and traverse through road construction area with detours and existing roads.



Plate 7: In some sections the power line route will traverse through built up areas with commercial farming infrastructure such as these farm buildings.

Archaeological and Cultural Sites

No archaeological sites were identified in course of field investigations on the route of the proposed power line. The proposed powerline route traverse through a heavily degraded commercial farm lands which left limited opportunities for archaeological sites to have survived *in situ*.

Historical and Recent sites

The project area consists of commercial farmlands associated with the settler history of the area.

Generically speaking, historic sites are associated with white settlers, colonial wars, industrialization; African population settlements, contemporary ritual sites and settler farming communities are the most common and visible. The more common functions of places of cultural historical significance include:

- Domestic
- Recreation & culture
- Commerce & trade
- Agriculture & subsistence
- Social
- Health care
- Religion
- Designed landscape
- Funeral (cemeteries, graves and burial grounds)
- Civil and Structural Engineering
- Education
- Defence /Military

The proposed power line will traverse through a cultural landscape with evidence of historic Colonial settlements as shown in Plate 8 and 9. The Koster town itself was established in the 1880s. This confirms that the general area has a long history of settler occupation, making the entire landscape a locally significant cultural landscape. However, the proposed development will not affect any physical historical cultural property in any way. The powerline servitude will be consistent with the existing developments since it will run along existing powerline and roads servitudes.



Plate 8 and 9: Remainder of historic buildings recorded in the vicinity of the power line route. It is unlikely that the power line construction will interfere with any of these historic sites.

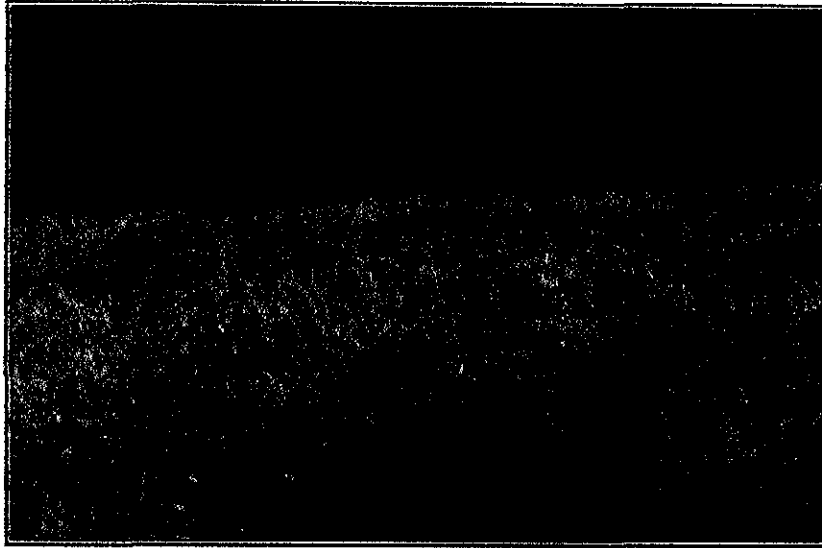


Plate 10: A contemporary cemetery recorded in the vicinity of the power line route, it is unlikely that the power line construction will interfere with such a clearly marked cemetery.

Burial grounds and graves

A formal cemetery was recorded in the vicinity of the powerline servitude. The cemetery is well fenced and clearly marked (Plate 10). Although this cemetery is visible from the powerline route, it is in no way affected by the proposed powerline pole installation associated with the proposed development. Nonetheless, in terms of the Section 36 (3) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) no person may, without a permit issued by the relevant heritage resources authority:

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment, which assists in the detection or recovery of metals.

Significance valuation Burial Ground, Historic Cemeteries and Graves

The significance of burial grounds and gravesites is closely tied to their age and historical, cultural and social context. Nonetheless, every burial should be considered as of high significance. Furthermore, should any grave previously unknown be identified during construction, every effort should be made not disturb them. Pole position should be shifted to ensure the grave or burial ground is not disturbed.

6 STATEMENT OF OVERALL IMPACTS

Archaeological resources are fixed in space. Any activity that threatens to alter the status quo is potentially an immediate and direct threat to any archaeological resources in its direct path. The impact will be permanent in nature, extent and duration (Bickford and Sullivan, 1977). In principal, the

proposed power transmission line development project will not have any measurable impact upon any cultural heritage resources including graves, historical and archaeological resources that may be situated in the project area. No such heritage sites were recorded on direct path of the powerline. From a cultural heritage point of view, the overall impact of the proposed development is considered low to none existence since no such sites were recorded directly within the servitude. Furthermore, any direct impact on sites may easily be minimised by carefully placing pylons and access routes on areas without indicators of sites.

7 OVERALL RECOMMENDATIONS

- There being no archaeological or significant historical sites identified on the direct path of the powerline development, we recommend to the heritage authorities to approve the proposed power line development.
- As a cautionary measure, should the project be approved to proceed as proposed, an archaeological walk-down survey must be conducted in order to ensure that no tower or pole foundation will be sited on previously unidentified archaeological sites. Such specific recommendations should be incorporated in the project development Environmental Management Plan (EMP).
- The foot print impact of each pole should be kept to minimal to limit the possibility of encountering chance finds.
- Construction camps and access roads during construction phase should be approved as part of the project monitoring to ensure that no archaeological or historic sites will be affected
- Furthermore, the construction team should be informed about the value of the cultural heritage resources in general so as to ensure that they do not destroy the chance archaeological sites they may encounter during working on the power-line route.

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