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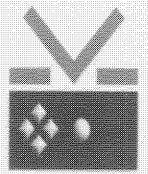
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**PROPOSED PAARDEKOP ESKOM POWERLINE AND SUBSTATION
CONSTRUCTION AT WHITE RIVER, MBOMBELA LOCAL
MUNICIPALITY IN MPUMALANGA PROVINCE**

**PHASE 1 CULTURAL AND ARCHAEOLOGICAL HERITAGE
ASSESSMENT SPECIALIST STUDY**

MAY 2006, POLOKWANE

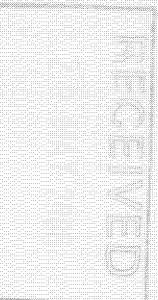
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REPORT DETAILS

PROJECT NAME: Proposed Paardekop Eskom Powerline and Substation Construction
REPORT TITLE: CULTURAL AND ARCHAEOLOGICAL HERITAGE ASSESSMENT SPECIALIST STUDY
AUTHOR: McEdward Murimbika
REFERANCE NO: HIA
STATUS OF REPORT: Final
FINAL ISSUE: Date: May, 2006

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PROFESSIONAL SERVICE

Nzumbululo Heritage Solutions (South Africa) cc.

PROVIDER (PSP)

Project Manager: Moses M. Mabuda (BA Hons 2002 Univ. of Venda)

MANAGEMENT SUMMARY

BACKGROUND

Eskom Northern Distribution appointed EnviroXcellence Services (EXS) to carry out the scoping phase of an Environmental Impact Assessment for the construction of an electricity substation and powerline in Mpumalanga Province. EXS appointed Nzumbululo Heritage Solutions [South Africa] (HeSSA) to conduct an Archaeological and Cultural Heritage Impact Assessment study for the proposed Paardekop Eskom project. The CHA study focus on identifying and assessing archaeological, cultural, and historical heritage resources associated with the proposed powerline and substation construction receiving environment.

SUMMARY RESULTS

This study was conducted in three phases. The first phase involved a reconnaissance survey of the proposed route followed by the archaeological and cultural heritage field survey and finally the assessment and report production. No archaeological, historical or any other physical cultural heritage properties of significance were identified on the direct path of the proposed power line. The proposed power line will connect from the existing 66kv electricity line and cross a river connecting to a new site for substation construction on portion 59 JU of Paardekop farm less than a kilometre away. The length of proposed power line will cut through previously disturbed area by gum tree plantations.

SUMMARY RECOMMENDATIONS

No archaeological any other class of physical cultural heritage resources were identified on site. The proposed powerline is unlikely to disturb any heritage resources on the powerline route. With these considerations, this study did not identify archaeological or cultural heritage barrier to the proposed power line project. As such, there are no objections to the proposed Eskom powerline and substation construction at Paardekop farm 59 JU.

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ABBREVIATIONS

CHA	Cultural Heritage Assessment
EIA	Environmental Impact Assessment
EXS	EnviroXcellence Services cc
HESSA	Nzumbululo Heritage Solutions (South Africa)
PI	Principal Investigator
PSP	Professional Service Provider
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.

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.

PROPOSED PAARDEKOP ESKOM POWER LINE AND SUBSTATION CONSTRUCTION: PHASE 1 CULTURAL AND ARCHAEOLOGICAL HERITAGE ASSESSMENT SPECIALIST STUDY

1 INTRODUCTION

Eskom commissioned the construction of transmission power line connecting from an existing 66kv power line in Longmere Estates to a proposed new Paardekop substation in portion 59 JU of Paardekop farm in Mpumalanga Province. In order to obtain environmental authorisation and clearances from the environmental authorities, EnviroXcellence Services (EXS) was appointed to handle the environmental aspects for the proposed project. EXS subcontracted Nzumbululo Heritage Solutions cc (South Africa) (HeSSA) to conduct the Cultural Heritage Assessment (CHA) study as part of the EIA process (Table 1).

Table 1: Terms of Reference for the Cultural Heritage Study for proposed Eskom Power line and Substation construction project at Paardekop farm.

PURPOSE	ACTIVITIES
<input type="checkbox"/> To identify and describe (in terms of their conservation and / or preservation importance) sites of cultural and archaeological importance that may be affected by the proposed power line and substation construction activities. This study should include the identification of gravesites.	<input type="checkbox"/> Identify, describe and map sites of archaeological, historical or cultural interest affected by the proposed power line and substation construction project.
<input type="checkbox"/> Identify and describe impacts to archaeological and cultural resources.	<input type="checkbox"/> Identify, where possible, the gravesites affected by the development.
<input type="checkbox"/> Make recommendations on mitigation measures.	<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"/> Identify and describe management measures.	<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 CHA STUDY

This CHA study seeks to fulfil the requirements of South African Heritage Resources Act (Act No. 25 of 1999) Section 38. As heritage specialists, the HeSSA team was charged with the responsibility of:

- Identifying heritage resources affected by the proposed power line development 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 powerline and substation development.
 - 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 development on graves and burials sites within the development 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.
- As heritage specialists, the HeSSA team was charged with the responsibility of:
- Identifying and assess the significance of the heritage resources affected by the proposed power line and substation construction project.

3 BACKGROUND SUMMARY

The proposed power line development consists of construction of transmission lines connecting from existing 66kv powerline in Longmere Estates to the proposed site for new substation construction at Paardekop farm portion 59 JU, in the Mbombela Local Municipality, Mpumalanga Province. The proposed transmission line project is a linear development for less than a kilometre in length. The line would traverse from existing electricity lines through a gum tree plantation (Plate 1).

Paardekop Substation

Figure 1: Locality Map

Tluela Census Municipality

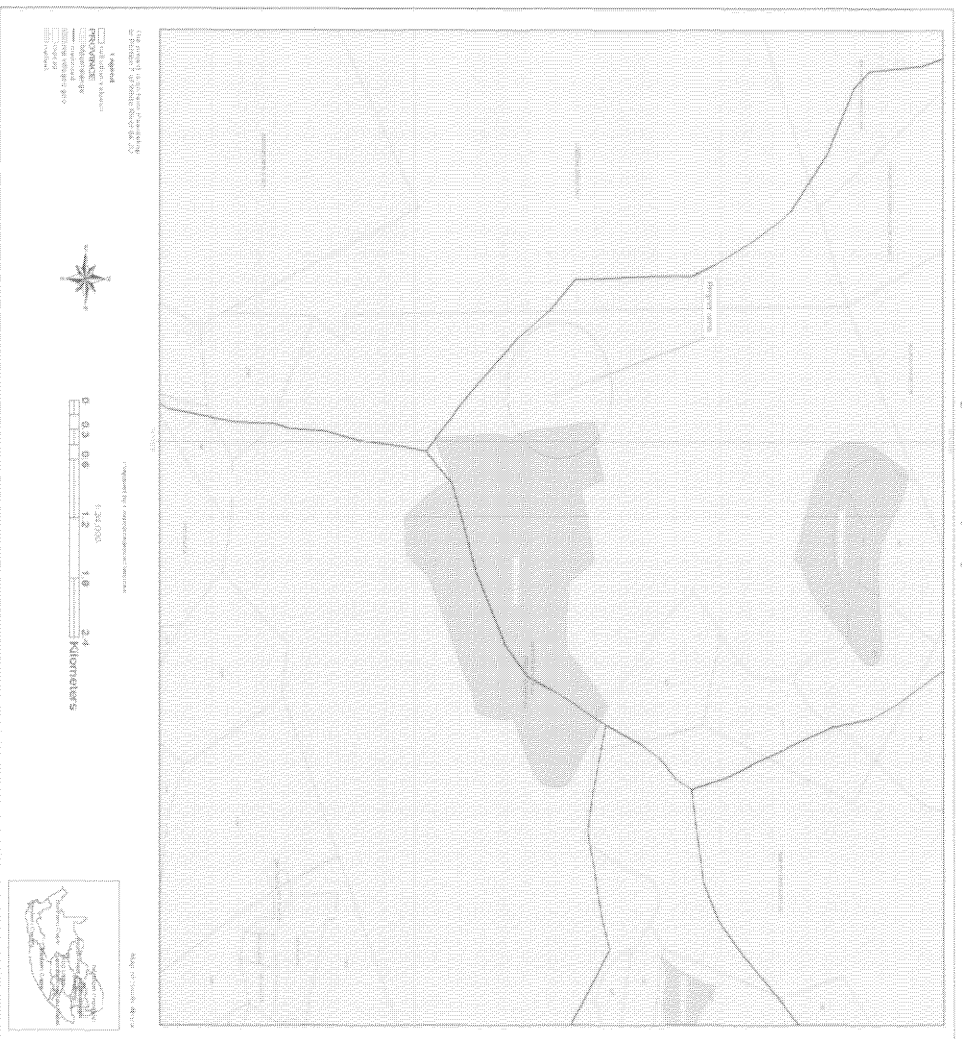


Fig 1: View of the area within which the proposed Paardekop substation site is situated.

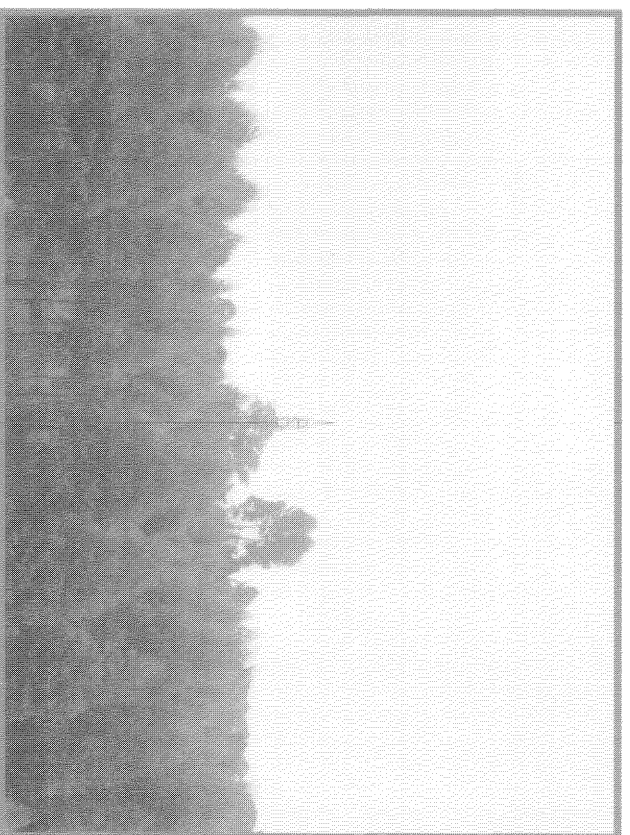


Plate 1: Proposed power line will connect at this existing 66kv line running from Marathon to the Kiepersol substation.

Historically, the general area within which the project falls has a long history of human occupation. The area was also occupied by early iron-using farming communities most in the second millennium AD. Hunter-gathers are on record to have left their own culture material in the general area of the Mpumalanga province. General archaeological studies indicate that the entire region from the present day Swaziland borders to Phalaborwa contains archaeological material classified into the following facies: (i) *Doomkop* (dating to AD 750-1000); *Kingbeil* (AD 1000-1300) and *Maguga* (Ad1300-1500) (Huffman 2004: 101). The area also received different migrating Nguni-speaking and Sotho-Tswana-speaking farming communities during the precolonial era. In the mid-1800s, the area played host to more migrating groups fleeing from the *mfecane* (Hammond-Tooke 1993) and eventually like most of South Africa, the territory was brought under colonial rule by the beginning of the 20th century. Today most of the land is under commercial farms. The local African communities comprise of a mixture of groups that claim decendency from the Langa and Musi Nguni-speaking groups (the Ndebele); Sotho-Tswana and Tsonga-speaking groups.

Concerning archaeological and physical cultural heritage resources, no systematic archaeological or cultural heritage assessment studies are on record covering the specific route of the proposed power line. However, from the previous and current land use activities in the area, it was anticipated that some archaeological resources, if they existed, might have been affected previously.

4 STUDY METHODS

We began the CHA study with a desktop survey and we proceeded to a field reconnaissance study of the proposed power line route and new substation construction site. The field trips we conducted in the company of Mr J R Miller's farm workers. In the third segment we conducted an archaeological and cultural heritage field survey of the affected area.

4.1 FIELD SURVEY

We conducted reconnaissance study to collect geographical and topographical background information along the route for proposed power line from the connecting

point up until the proposed site for new substation on farm Paardekop 59-JU. We proceeded to a full field survey of the affected landscape. We sought to identify archaeological sites and physical cultural resources signatures as well as other cultural heritage sites such as graves, burial and religious or sacred sites associated with the powerline route.

Two field archaeologists systematically transacted the proposed transmission power line route on foot. We started from the existing 66kv power line where the proposed line will T-off and traverse to the proposed site for Paardekop Eskom Power substation.

Distribution of archaeological sites across the landscape depends on preservation conditions over time, the degree to which sites are exposed through erosion or lack of vegetation, etc. On the other hand, identification of archaeological sites during surveying also depends on visibility and accessibility. Although the area affected by proposed power line route is easily accessible, ground visibility was low due to dense grass and undercover in the gum plantation (Plate 2).

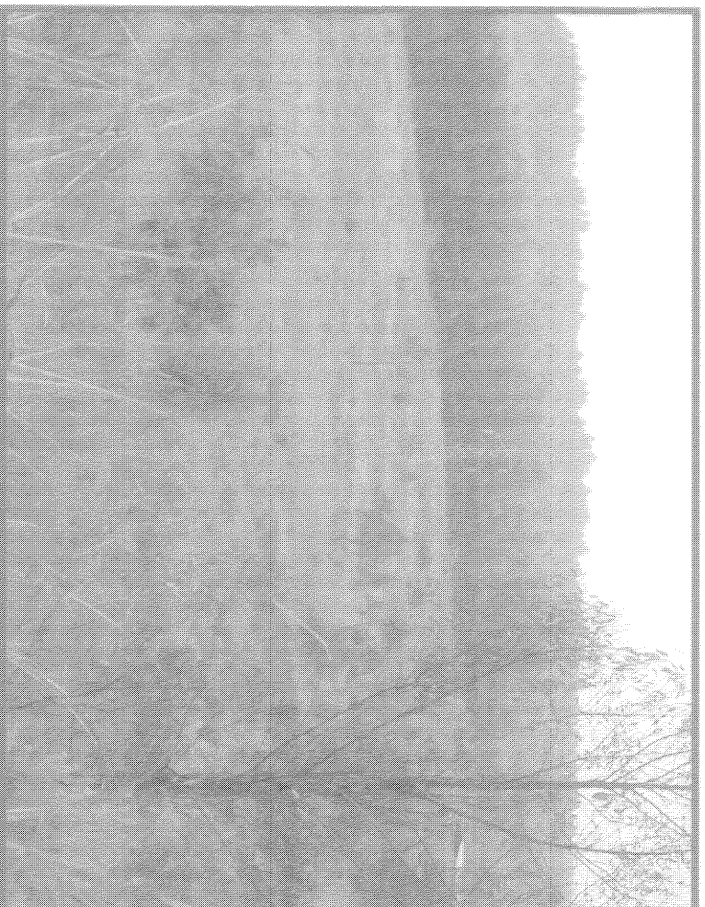


Plate 2: View of the section where the proposed power line will cut through after connecting from the existing line.

5 RESULTS

Location Details

Province: Mpumalanga

Local Municipality: Mbombela

Name Properties affected: Paardekop farm 59-JU

Proposed development: Linear electricity transmission power line connecting from existing 66kv line to proposed new substation site within Paardekop farm.

1:50 000 map name: 2531 AD (see *figure 1 on page 5*)

GPS Co-ordinates: Four co-ordinate points were picked on the affected site earmarked for the development.

- Proposed power line would starts at S25.29839° E31.01919° (existing 66kv line running from Marathon to the Kiepersol substation where the proposed 250m, 132kv power line will connect); see *plate 1 and 2.*
- S25.29892° E31.02179° (north west end of the proposed site for substation construction;
- S25.29906° E31.02171° (mid section of the proposed substation site on Plate 3)
- S25.29893° E31.02135° (South eastern section of proposed development site);

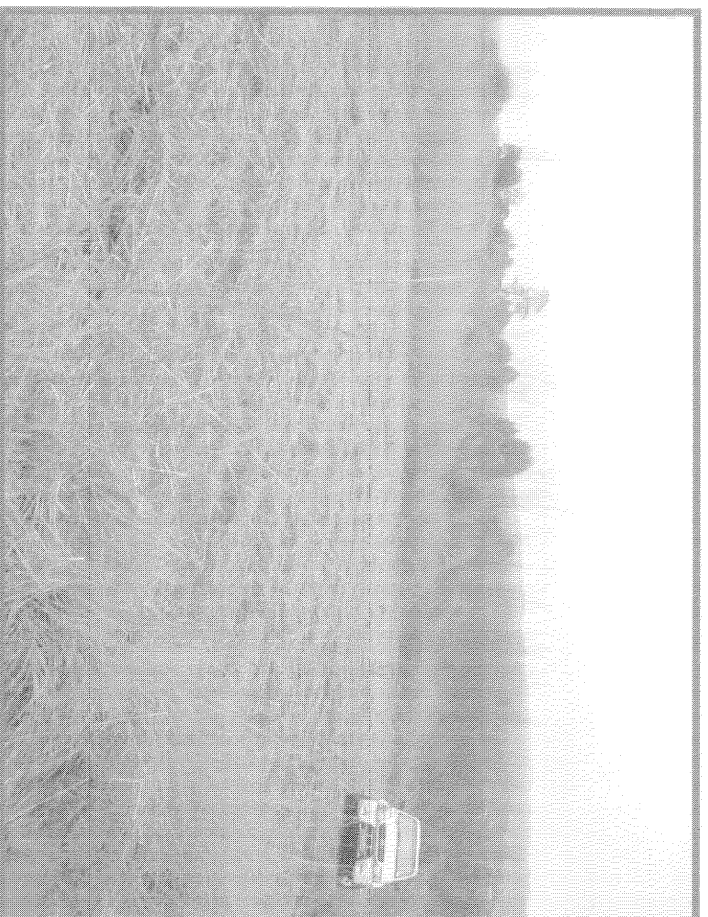


Plate 3: View of the proposed new Paardekop substation site.

Current land use and powerline route description: (See Plate 1 to 3) From the existing 66kv line to the proposed Paardekop power substation site, the line route runs through already disturbed areas by gum trees plantation. The substation site is also on land previously used for tree plantation.

Archaeological and Physical Cultural Resources

No archaeological heritage resources were identified during the CHA study of the proposed power line route. No historical structures or features were observed near the powerline route. Nonetheless, in most parts the proposed line runs through areas already disturbed. No archaeological materials, if they existed before, could have survived on the ground surface.

Statement of overall impacts

In principle any development that alters the ground surface status quo will potentially destroy archaeological resources or any other category of physical cultural remains that may lie in its direct path. Naturally, impact will be permanent in nature; extent and duration (also see Bickford and Sullivan, 1977). However, since there were no archaeological or cultural heritage sites that were identified on the path of the proposed power line project, from a heritage perspective, no impacts were identified or measured in probabilities or intensity.

Recommendations

No further predevelopment study or mitigation is necessary for the archaeological and physical cultural heritage resources with regards to the proposed power project. Should any archaeological materials, middens, unmarked graves or any such historical materials be discovered accidentally during the proposed development, work should be suspended on site until heritage authorities have given the instruction to proceed with the construction *in situ*.

Burial Grounds and Grave Sites

No burial grounds or individual gravesites were identified along the route of the proposed power line.

Recommendations: Burials and Grave Sites

Although no burial grounds or gravesites were identified during this study, all burial grounds and gravesites, known or previously unknown, are accorded special protection under applicable national and provincial legislations and ordinances. Keeping on mind that there is a possibility in any development to encounter previously unknown burials, it should be emphasised here that even unknown human remains should be protected when accidentally discovered during development. Should such sites be discovered during the construction of the powerline, we recommend that, the following steps to be implemented before remains are removed:

- Notification of the impending removals;
- Consultation with individuals or communities related to the deceased;
- Calling on relatives to claim the remains;
- Notices at the grave sites and other local media;
- Satisfactory arrangements for the exhumation and re-interment;
- Satisfactory arrangements for curation where applicable.

Furthermore, the South African Heritage Resources Agency should be notified if human remains falling under the National Heritage Resources Act (Act No 25 of 1999) are accidentally uncovered during development.

6 MONITORING

Since it is not possible to predict where the previously unidentified archaeological and physical cultural materials, including human burials, may be uncovered during powerline construction activities, it is recommended that an archaeologist should be retained to monitor the construction sites when digging powerline pole foundations and the associated access roads and work camps. Since the archaeological resources would permanently be damaged, should archaeological features be exposed during the construction they should be documented. Thus it will be important from the construction scheduling phases that the archaeological monitoring activities are taken into consideration.

7 CONCLUDING REMARKS

If our recommendations are acceptable and taken into consideration, from a heritage perspective, the proposed development is unlikely to impact upon archaeological or

physical cultural heritage resources. As such there are no identified archaeological or cultural heritage barriers to the proposed power line and substation construction project.

8. ACKNOWLEDGEMENTS

We would like to acknowledge the assistance of Promise one of Mr Millet farm workers for facilitating access to the farm and taking us through the powerline route for reconnaissance survey.

9 REFERENCES

- Bickford, A and Sullivan, S. 1977. "Assessing the research significance of historic sites" in S Sullivan and s. Bowdler (eds), *Site Surveys and Significance assessment in Australian Archaeology*. Canberra: ANU.
- Hammond-Tooke, D.1993. *The roots of Black South Africa*. Johannesburg: Jonathan Ball Publishers.
- Hester, T.R., Shafer H.J. and Feder, K.L. 1997. *Field Methods in Archaeology*, 7th edn, Mountain View California: Mayfield Publishing Co,
- Huffman T.N. 2004. Archaeology of the Nguni Past. Southern African Humanities 16: 79-111
- The National Heritage Resources Act (Act No 25 of 1999).