

**Cultural heritage impact assessment for
THE PROPOSED DEVELOPMENT OF THE BRAVO 4 POWER LINES, KUSILE
POWER STATION TO ZEUS SUBSTATION, MPUMALANGA PROVINCE**

CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF THE BRAVO 4 POWER LINES, KUSILE POWER STATION TO ZEUS SUBSTATION, MPUMALANGA PROVINCE

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Declaration:

I, J.A. van Schalkwyk, declare that I do not have any financial or personal interest in the proposed development, nor its developers or any of their subsidiaries, apart from the provision of heritage assessment and management services, for which a fair numeration is charged.



J A van Schalkwyk (D Litt et Phil)
Heritage Consultant
May 2016

EXECUTIVE SUMMARY

CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF THE BRAVO 4 POWER LINES, KUSILE POWER STATION TO ZEUS SUBSTATION, MPUMALANGA PROVINCE

Eskom also obtained environmental authorization on 09 October 2009 from the Department of Environmental Affairs (DEA) for the construction of two new 400kV power lines from the Kendal Power Station (near Ogies) to the Zeus Substation (near Secunda), one powerline will further join to an existing power line that spans from the Kendal Power Station to Kusile Power Station in the Mpumalanga Province. Each of these lines will be approximately 70 km's in length with a combined length of 140km. The lines will run parallel to each other.

Following approval by DEA in 2009, it has been identified that certain tower footings associated with the power lines may impact on watercourse crossings and drainage lines, thus requiring Environmental Authorisation in terms of the National Environmental Management Act (NEMA) (Act 107 of 1998). Eskom has appointed Envirolution Consulting as independent environmental consultants, to undertake the Basic Assessment and Environmental Management Programme (EMPr) process. The main objective of the Basic Assessment and EMPr is to identify and assess potential environmental impacts associated with the proposed project, and to compile appropriate mitigation measures

An original scoping assessment of the proposed power line route was done in 2008 (Pistorius 2008). This was subsequently followed up by a full walk-down of the power line route (Fourie 2012), during which sixteen sites of cultural heritage significance were identified that might be impacted on by the proposed power line. The 2012 report also proposed applicable mitigation measures if there is to be an impact on the identified sites.

The current report should be read in conjunction with the two previous reports (Pistorius 2008; Fourie 2012). Both these reports deal with the contextual aspect of the region, i.e. an overview of the history and resultant cultural heritage resources in the region. As both reports have been submitted to Eskom and as they are also available on the SAHRIS system, it is regarded as unnecessary to repeat this background information in this survey.

The aim of the current report is to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the tower footings that are affecting the water courses or within the 32m buffer zone of a watercourse, as well as the 55m servitude of the affected towers.

From the available published and unpublished reports on the cultural heritage resources of region, as well as the field survey, it was revealed the region does not have a high potential for heritage sites:

- Only a few sites dating to the Stone Age have been documented in the region; no reports of substantial surface finds of stone tools are known;
- Iron Age settlement took place on a limited scale, with all sites dating to the Late Iron Age.
- Most known heritage sites date to the recent past and consist of farmsteads, formal and informal burial sites as well as elements of infrastructure development, e.g. bridges.

Impact assessment

Only six sites of cultural significance have been identified to be less than 70m from a proposed tower position.

Number	Name	Latitude	Longitude	Tower	Distance
2628BB	Homestead	-26.13515	28.98645	Ku-Ze 104	30m
PGS03	Cemetery	-26.34128	29.01892	Ke-Ze 82	52m
PGS12	Kraal	-26.53131	29.03719	Ke-Ze 135	56m
PGS13	Kraal	-26.55792	29.05300	Ke-Ze 144	21m
PGS15	Cemetery	-26.62458	29.07975	Ku-Ze 244	70m
PGS16	Kraal	-26.64894	29.08722	Ku-Ze 232	60m

Reasoned opinion as to whether the proposed activity should be authorised:

- From a heritage point of view it is recommended that the proposed development be allowed to continue

Conditions for inclusion in the environmental authorisation:

- The proposed development can only continue on condition of acceptance of the recommended mitigation measures, as set out in the 2102 report (Fourie 2012). This, inter alia, would require a watching brief whereby a qualified archaeologist is in attendance if any construction activities takes place in the vicinity of the identified towers
- Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.



J A van Schalkwyk
Heritage Consultant
May 2016

TECHNICAL SUMMARY

Property details						
Province	Mpumalanga					
Magisterial district	Witbank, Highveld Ridge, Standerton					
Local municipality	Emalahleni, Delmas, Govan Mbeki					
Topo-cadastral map	2628BB, 2628BD, 2629AC, 2629CA					
Farm name	-					
Closest town	-					
Coordinates	End points					
	No	Latitude	Longitude	No	Latitude	Longitude
	1	S 26.08070	E 28.97013	2	S 26.08973	E 29.08973

Development criteria in terms of Section 38(1) of the NHR Act	Yes/No
Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	Yes
Construction of bridge or similar structure exceeding 50m in length	No
Development exceeding 5000 sq m	No
Development involving three or more existing erven or subdivisions	No
Development involving three or more erven or divisions that have been consolidated within past five years	No
Rezoning of site exceeding 10 000 sq m	No
Any other development category, public open space, squares, parks, recreation grounds	No

Development	
Description	Construction of a 400kV power line
Project name	Bravo 4

Land use	
Previous land use	Farming
Current land use	Farming

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GLOSSARY OF TERMS AND ABBREVIATIONS

TERMS

Study area: Refers to the entire study area as indicated by the client in the accompanying Fig. 1 - 2.

Stone Age: The first and longest part of human history is the Stone Age, which began with the appearance of early humans between 3-2 million years ago. Stone Age people were hunters, gatherers and scavengers who did not live in permanently settled communities. Their stone tools preserve well and are found in most places in South Africa and elsewhere.

Early Stone Age	2 000 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Later Stone Age	30 000 - until c. AD 200

Iron Age: Period covering the last 1800 years, when new people brought a new way of life to southern Africa. They established settled villages, cultivated domestic crops such as sorghum, millet and beans, and they herded cattle as well as sheep and goats. As they produced their own iron tools, archaeologists call this the Iron Age.

Early Iron Age	AD 200 - AD 900
Middle Iron Age	AD 900 - AD 1300
Late Iron Age	AD 1300 - AD 1830

Historical Period: Since the arrival of the white settlers - c. AD 1840 - in this part of the country.

ABBREVIATIONS

ADRC	Archaeological Data Recording Centre
ASAPA	Association of Southern African Professional Archaeologists
CS-G	Chief Surveyor-General
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Later Stone Age
HIA	Heritage Impact Assessment
MSA	Middle Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF THE BRAVO 4 POWER LINES, KUSILE POWER STATION TO ZEUS SUBSTATION, MPUMALANGA PROVINCE

1. INTRODUCTION

The growing demand for electricity is placing increasing pressure on Eskom's existing power generation and transmission capacity. Eskom (SOC) is committed to implementing a Sustainable Energy Strategy that complements the policies and strategies of National Government. Eskom aims to improve the reliability of electricity supply to the country, and in particular to provide for the growth in electricity demand in the Gauteng and Mpumalanga provinces. For this reason, Eskom obtained environmental authorisation to construct the new 400 kV Bravo (Kusile) coal-fired Power Station between Bronkhorstspuit and Witbank in 2007. Construction of the Kusile power station has already commenced. Due to this construction, the new Bravo Power Station needs to be integrated with the existing Eskom electricity infrastructure.

In this regard Eskom also obtained environmental authorization on 09 October 2009 from the Department of Environmental Affairs (DEA) for the construction of two new 400kV power lines from the Kendal Power Station (near Ogies) to the Zeus Substation (near Secunda), one powerline will further join to an existing power line that spans from the Kendal Power Station to Kusile Power Station in the Mpumalanga Province (DEA Reference No. 12/12/20/1095). Each of these lines will be approximately 70 km's in length with a combined length of 140km. The lines will run parallel to each other.

Following approval by DEA in 2009, it has been identified that certain tower footings associated with the power lines may impact on watercourse crossings and drainage lines, thus requiring Environmental Authorisation in terms of the National Environmental Management Act (NEMA) (Act 107 of 1998). Activities identified in Listing Notice 1 of General Notice Regulations (GN R.) 983 and Listing Notice 3 of GN R. 985 are triggered by the proposed project and thus a Basic Assessment (BA) process is being undertaken. Specialist Ecological (Flora and Fauna), Avifauna, Wetland, Social and Heritage Assessments were undertaken during the Basic Assessment and their reports are attached as Appendices to this BAR. Eskom has appointed Envirolution Consulting as independent environmental consultants, to undertake the Basic Assessment and Environmental Management Programme (EMPr) process. The main objective of the Basic Assessment and EMPr is to identify and assess potential environmental impacts associated with the proposed project, and to compile appropriate mitigation measures

South Africa's heritage resources, also described as the 'national estate', comprise a wide range of sites, features, objects and beliefs. However, according to Section 27(18) of the National Heritage Resources Act (NHRA), No. 25 of 1999, no person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any heritage site without a permit issued by the heritage resources authority responsible for the protection of such site.

In accordance with Section 38 of the NHRA, an independent heritage consultant was appointed by Envirolution Consulting to conduct a cultural heritage assessment of the identified towers to determine if the proposed development would have an impact on any sites, features or objects of cultural heritage significance. An original scoping assessment of the proposed power line route was done in 2008 (Pistorius 2008). This was subsequently followed up by a full walk-down of the power line route (Fourie 2012), during which sixteen sites of cultural heritage significance were identified that might be impacted on by the proposed power line. The 2012 report also proposed applicable mitigation measures if there is to be an impact on the identified sites.

The current report should be read in conjunction with the two previous reports (Pistorius 2008; Fourie 2012). Both these reports deal with the contextual aspect of the region, i.e. an overview of the history and resultant cultural heritage resources in the region. As both reports have been submitted to Eskom and as they are also available on the SAHRIS system, it is regarded as unnecessary to repeat this background information in this survey.

This report forms part of the Environmental Impact Assessment (EIA) as required by the EIA Regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended and is intended for submission to the South African Heritage Resources Agency (SAHRA).

2. TERMS OF REFERENCE

The aim of a full HIA investigation is to provide an informed heritage-related opinion about the proposed development by an appropriate heritage specialist. The objectives are to identify heritage resources (involving site inspections, existing heritage data and additional heritage specialists if necessary); assess their significances; assess alternatives in order to promote heritage conservation issues; and to assess the acceptability of the proposed development from a heritage perspective.

The result of this investigation is a heritage impact assessment report indicating the presence/ absence of heritage resources and how to manage them in the context of the proposed development.

Depending on SAHRA's acceptance of this report, the developer will receive permission to proceed with the proposed development, on condition of successful implementation of proposed mitigation measures.

2.1 Scope of work

The aim of this study is to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the tower footings that are affecting the water courses or within the 32m buffer zone of a watercourse, as well as the 55m servitude of the affected towers.

This includes:

- Conducting a desk-top investigation of the area;
- A visit to the proposed development site.

The objectives were to:

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

2.2 Limitations

The investigation has been influenced by the following factors:

- Access to the some properties could not be attained.
- It is assumed that the description of the proposed project, provided by the client, is accurate.
- No subsurface investigation (i.e. excavations or sampling) were undertaken, since a permit from SAHRA is required for such activities.
- It is assumed that the public consultation process undertaken as part of the Environmental Impact Assessment (EIA) is sufficient and that it does not have to be repeated as part of the heritage impact assessment.
- The unpredictability of buried archaeological remains.
- This report does not consider the palaeontological potential of the site.

3. HERITAGE RESOURCES

3.1 The National Estate

The NHRA (No. 25 of 1999) defines the heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations that must be considered part of the national estate to include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, including-
 - ancestral graves;
 - royal graves and graves of traditional leaders;
 - graves of victims of conflict;
 - graves of individuals designated by the Minister by notice in the Gazette;
 - historical graves and cemeteries; and
 - other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to the history of slavery in South Africa;
- movable objects, including-
 - objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - objects to which oral traditions are attached or which are associated with living heritage;
 - ethnographic art and objects;
 - military objects;
 - objects of decorative or fine art;
 - objects of scientific or technological interest; and
 - books, records, documents, photographic 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).

3.2 Cultural significance

In the NHRA, Section 2 (vi), it is stated that “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or

significance. This is determined in relation to a site or feature's uniqueness, condition of preservation and research potential.

According to Section 3(3) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of

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

4. STUDY APPROACH AND METHODOLOGY

4.1 Extent of the Study

This survey and impact assessment covers the area as presented in Section 6 below and illustrated in Figure 3.

4.2 Methodology

4.2.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various anthropological, archaeological and historical sources were consulted – see list of references in Section 10.

- Information on events, sites and features in the larger region were obtained from these sources.

4.2.1.2 Data bases

The *Heritage Atlas Database*, the *Environmental Potential Atlas*, the *Chief Surveyor General* and the *National Archives of South Africa* were consulted.

- Database surveys produced a number of sites located in the larger region of the proposed development.

4.2.1.3 Other sources

Aerial photographs and topocadastral and other maps were also studied - see the list of references below.

- Information of a very general nature were obtained from these sources

The following is relevant to the field survey:

- An exhaustive review of the available published and unpublished reports on the cultural heritage resources potential of region was done (Fourie 2012; Pistorius 2004, 2008; Taylor 1979; Van Schalkwyk 1997, 1998, 200, 2001, 2002a, 2002b, 2004a, 2004b, 2004c, 2005, 2006; Wadley & Turner 1987). This revealed the fact that the region does not have a high potential for heritage sites:
 - Only a few sites dating to the Stone Age have been documented in the region; no reports of substantial surface finds of stone tools are known;
 - Iron Age settlement took place on a limited scale, with all sites dating to the Late Iron Age.
 - Most known heritage sites date to the recent past and consist of farmsteads, formal and informal burial sites as well as elements of infrastructure development, e.g. bridges.

4.2.2 Field survey

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The area that had to be investigated was identified by Envirolution Consulting by means of maps and .kml files indicating the development area. This was loaded onto a Nexus 7 tablet and used in Google Earth during the field survey to access the areas.

The site was visited on 21 May and 27 May 2016. The tower positions were accessed by farm tracks and by walking.

4.2.3 Documentation

All sites, objects and structures that are identified are documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities are determined by means of the *Global Positioning System* (GPS) and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

The track log and identified sites were recorded by means of a Garmin Oregon 550 handheld GPS device. Photographic recording was done by means of a Canon EOS 550D digital camera.

Map datum used: Hartebeeshoek 94 (WGS84).

5. PROJECT DESCRIPTION

5.1 Site location and development proposal

The project involves the construction of two new 400kV power lines from the Kendal Power Station (near Ogies) to the Zeus Substation (near Secunda), one powerline will further join to an existing power line that spans from the Kendal Power Station to Kusile Power Station in the Mpumalanga Province. Each of these lines will be approximately 70 km's in length with a combined length of 140km. The lines will run parallel to each other. For more information, please see the Technical Summary presented above (p. iii).

It has subsequently been identified that certain tower footings associated with the power lines may impact on watercourse crossings and drainage lines, thus requiring Environmental Authorisation in terms of the National Environmental Management Act (NEMA) (Act 107 of 1998). The aim in this report was therefore to inspect the tower footings that are affecting the

water courses or within the 32m buffer zone of a watercourse, as well as the 55m servitude of the affected towers – see Table 2 below.

Table 2: Towers to be investigated

Structure Details					
Tower Number	Tower Type	Height (m)	Latitude (DD.DDDD)	Longitude (DD.DDDD)	Buffer Distance
1 Sol Zeus 46	518C 0 - 45 degree strain	35.1	29.0939	-26.6676	32m
1 Sol Zeus 48	518C 0 - 45 degree strain	32.1	29.0927	-26.6733	32m
1 Sol Zeus 51	529 A Crossrope Structure	37.56	29.0906	-26.6859	32m
1 So-Ze 46	518D 45 - 70 degree strain	31.65	29.0915	-26.6736	32m
1Ben-Mat 260A	518C 0 - 45 degree strain	33.6	28.9886	-26.2336	32m
1Ben-Mat 260B	518C 0 - 45 degree strain	33.6	28.9869	-26.2341	32m
1Ben-Mat 261A	518C 0 - 45 degree strain	33.6	28.9839	-26.2342	32m
1Ben-Mat 261B	518C 0 - 45 degree strain	33.6	28.9826	-26.2337	32m
1Ma-Glo 49	518C 0 - 45 degree strain	24.1	29.0228	-26.3883	32m
1Ma-Glo 50	518C 0 - 45 degree strain	24.1	29.0201	-26.3904	32m
1Ma-Glo 51	518C 0 - 45 degree strain	24.1	29.0176	-26.3923	32m
2 Sol Zeus 47	518C 0 - 45 degree strain	34.1	29.0933	-26.6675	32m
2 Sol Zeus 49	518H	39.65	29.0921	-26.6733	32m
2 Sol Zeus 53	529 A Crossrope Structure	37.56	29.0900	-26.6859	32m
2Ma-Glo 49	518D 45 - 70 degree strain	37.65	29.0225	-26.3882	32m
2Ma-Glo 50	518D 45 - 70 degree strain	37.65	29.0199	-26.3901	32m
2Ma-Glo 51	518D 45 - 70 degree strain	37.65	29.0174	-26.3921	32m
2Mat-Nev 61A	518D 45 - 70 degree strain	25.65	28.9825	-26.2329	32m
2Mat-Nev 61B	518D 45 - 70 degree strain	25.65	28.9838	-26.2323	32m
Ke-Ze 10	518C 0 - 45 degree strain	37.1	28.9891	-26.1037	32m
Ke-Ze 103	529 A Crossrope Structure	36.06	29.0257	-26.4180	32m
Ke-Ze 105	529 A Crossrope Structure	36.06	29.0250	-26.4257	32m
Ke-Ze 110	529 A Crossrope Structure	31.56	29.0234	-26.4432	32m
Ke-Ze 113	518H	40.8	29.0222	-26.4552	32m
Ke-Ze 121	529 A Crossrope Structure	37.56	29.0195	-26.4852	32m
Ke-Ze 122	518C 0 - 45 degree strain	36.1	29.0191	-26.4888	32m
Ke-Ze 123	529 A Crossrope Structure	36.06	29.0198	-26.4922	32m
Ke-Ze 124	529 A Crossrope Structure	31.56	29.0204	-26.4958	32m
Ke-Ze 137	518C 0 - 45 degree strain	39.1	29.0386	-26.5341	32m
Ke-Ze 138	518C 0 - 45 degree strain	31.1	29.0399	-26.5364	32m
Ke-Ze 143	518C 0 - 45 degree strain	24.1	29.0493	-26.5520	32m
Ke-Ze 144	518H	39.65	29.0502	-26.5535	32m
Ke-Ze 145	518H	39.65	29.0527	-26.5582	32m
Ke-Ze 146	529 A Crossrope Structure	36.06	29.0546	-26.5616	32m
Ke-Ze 148	529 A Crossrope Structure	37.56	29.0590	-26.5696	32m
Ke-Ze 15	518H	39.65	28.9873	-26.1184	32m
Ke-Ze 152	529 A Crossrope Structure	34.56	29.0655	-26.5828	32m
Ke-Ze 153	529 A Crossrope Structure	34.56	29.0659	-26.5870	32m
Ke-Ze 155	529 A Crossrope Structure	36.06	29.0668	-26.5926	32m
Ke-Ze 160	518H	40.8	29.0715	-26.6075	32m
Ke-Ze 162	518H 42m	48.65	29.0747	-26.6155	32m
Ke-Ze 163	518C 0 - 45 degree strain	33.1	29.0756	-26.6178	32m
Ke-Ze 169	529 A Crossrope Structure	31.56	29.0839	-26.6383	32m
Ke-Ze 170	518C 0 - 45 degree strain	39.1	29.0853	-26.6418	32m
Ke-Ze 173	518C 0 - 45 degree strain	35.1	29.0868	-26.6526	32m
Ke-Ze 177	518C 0 - 45 degree strain	37.6	29.0923	-26.6679	32m

Ke-Ze 178	518C 0 - 45 degree strain	26.1	29.0918	-26.6700	32m
Ke-Ze 19	518C 0 - 45 degree strain	39.1	28.9858	-26.1348	32m
Ke-Ze 20	518C 0 - 45 degree strain	36.1	28.9833	-26.1387	32m
Ke-Ze 21	529 A Crossrope Structure	36.06	28.9824	-26.1429	32m
Ke-Ze 22	529 A Crossrope Structure	37.56	28.9816	-26.1470	32m
Ke-Ze 23	518C 0 - 45 degree strain	28.1	28.9809	-26.1505	32m
Ke-Ze 26	529 A Crossrope Structure	31.56	28.9815	-26.1616	32m
Ke-Ze 28	529 A Crossrope Structure	37.56	28.9819	-26.1695	32m
Ke-Ze 30	529 A Crossrope Structure	37.56	28.9823	-26.1777	32m
Ke-Ze 32	529 A Crossrope Structure	36.06	28.9828	-26.1857	32m
Ke-Ze 37	529 A Crossrope Structure	37.56	28.9838	-26.2051	32m
Ke-Ze 40	529 A Crossrope Structure	37.56	28.9845	-26.2171	32m
Ke-Ze 46	518C 0 - 45 degree strain	31.1	28.9854	-26.2337	32m
Ke-Ze 47	518C 0 - 45 degree strain	36.1	28.9855	-26.2351	32m
Ke-Ze 57	529 A Crossrope Structure	30.06	29.0041	-26.2681	32m
Ke-Ze 58	529 A Crossrope Structure	34.56	29.0060	-26.2714	32m
Ke-Ze 63	529 A Crossrope Structure	30.06	29.0071	-26.2866	32m
Ke-Ze 66	529 A Crossrope Structure	27.06	29.0088	-26.2952	32m
Ke-Ze 67	529 A Crossrope Structure	33.06	29.0121	-26.2979	32m
Ke-Ze 68	529 A Crossrope Structure	33.06	29.0154	-26.3006	32m
Ke-Ze 78	518H 42m	48.65	29.0189	-26.3343	32m
Ke-Ze 79	529 A Crossrope Structure	33.06	29.0186	-26.3392	32m
Ke-Ze 83	529 A Crossrope Structure	33.06	29.0180	-26.3518	32m
Ke-Ze 85	529 A Crossrope Structure	37.56	29.0176	-26.3597	32m
Ke-Ze 91	529 A Crossrope Structure	36.06	29.0185	-26.3844	32m
Ke-Ze 93	518C 0 - 45 degree strain	27.1	29.0196	-26.3894	32m
Ke-Ze 94	0	16.3	29.0194	-26.3901	32m
Ke-Ze 95	0	16.3	29.0205	-26.3911	32m
Ke-Ze 98	529 A Crossrope Structure	37.56	29.0227	-26.3974	32m
Ku-Ze 104	518C 0 - 45 degree strain	34.6	28.9860	-26.2337	32m
Ku-Ze 105	518C 0 - 45 degree strain	35.1	28.9860	-26.2350	32m
Ku-Ze 106	529 A Crossrope Structure	37.56	28.9875	-26.2376	32m
Ku-Ze 115	529 A Crossrope Structure	30.06	29.0046	-26.2679	32m
Ku-Ze 116	529 A Crossrope Structure	33.06	29.0065	-26.2712	32m
Ku-Ze 118	529 A Crossrope Structure	33.06	29.0081	-26.2778	32m
Ku-Ze 121	529 A Crossrope Structure	31.56	29.0077	-26.2865	32m
Ku-Ze 122	529 A Crossrope Structure	36.06	29.0075	-26.2901	32m
Ku-Ze 124	529 A Crossrope Structure	27.06	29.0093	-26.2949	32m
Ku-Ze 125	529 A Crossrope Structure	34.56	29.0125	-26.2976	32m
Ku-Ze 136	518H 42m	48.65	29.0194	-26.3346	32m
Ku-Ze 137	529 A Crossrope Structure	34.56	29.0192	-26.3385	32m
Ku-Ze 141	529 A Crossrope Structure	37.56	29.0185	-26.3524	32m
Ku-Ze 143	529 A Crossrope Structure	36.06	29.0181	-26.3608	32m
Ku-Ze 149	529 A Crossrope Structure	34.56	29.0188	-26.3831	32m
Ku-Ze 150	529 A Crossrope Structure	34.56	29.0195	-26.3863	32m
Ku-Ze 151	518C 0 - 45 degree strain	24.1	29.0201	-26.3891	32m
Ku-Ze 152	0	16.3	29.0200	-26.3898	32m
Ku-Ze 153	0	16.3	29.0209	-26.3908	32m
Ku-Ze 154	518D 45 - 70 degree strain	25.65	29.0221	-26.3912	32m
Ku-Ze 156	529 A Crossrope Structure	36.06	29.0232	-26.3970	32m
Ku-Ze 160	518H 42m	48.65	29.0256	-26.4105	32m
Ku-Ze 161	518C 0 - 45 degree strain	33.1	29.0265	-26.4152	32m
Ku-Ze 164	529 A Crossrope Structure	37.56	29.0255	-26.4259	32m
Ku-Ze 167	529 A Crossrope Structure	30.06	29.0246	-26.4356	32m
Ku-Ze 168	529 A Crossrope Structure	36.06	29.0243	-26.4395	32m
Ku-Ze 169	529 A Crossrope Structure	36.06	29.0239	-26.4435	32m
Ku-Ze 172	518H	40.8	29.0228	-26.4552	32m

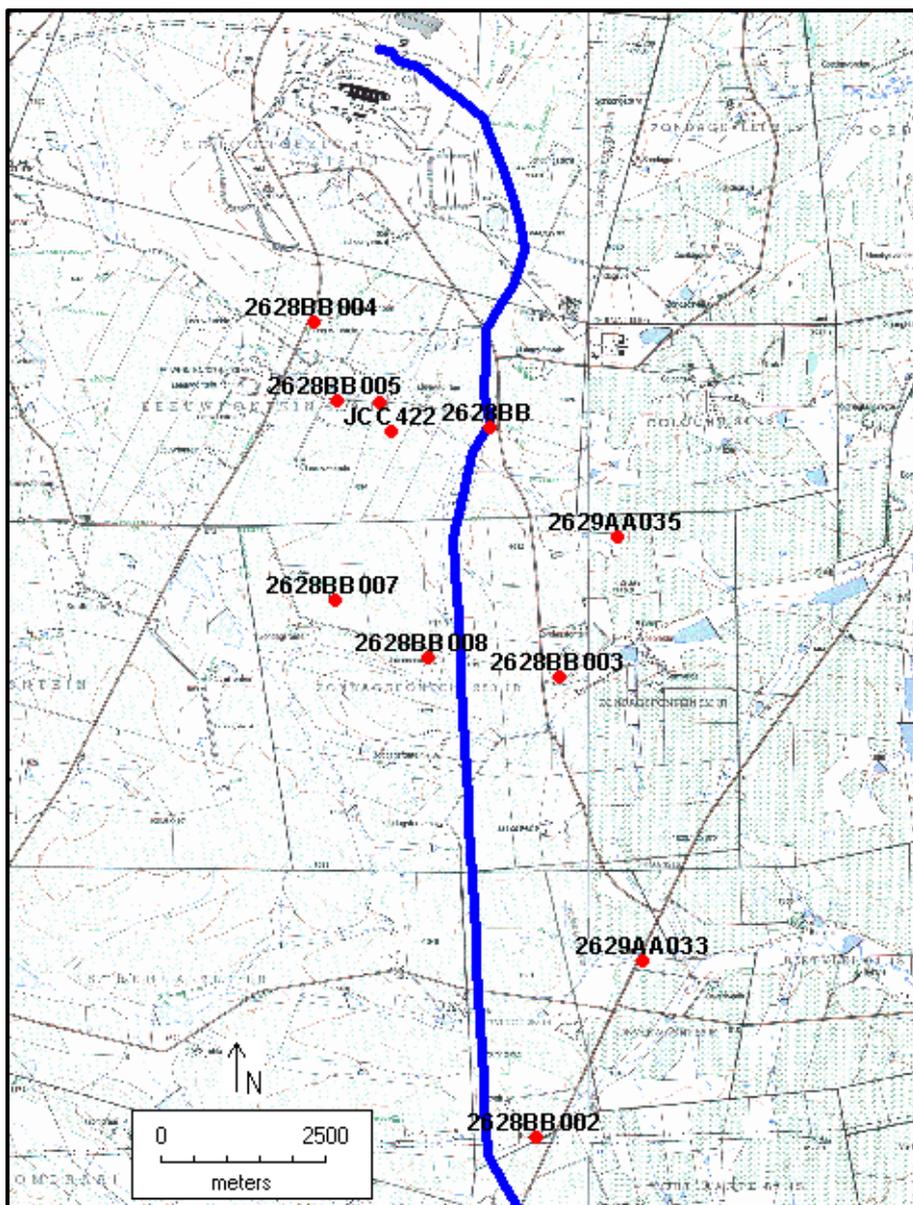
Ku-Ze 180	529 A Crossrope Structure	37.56	29.0200	-26.4849	32m
Ku-Ze 181	518C 0 - 45 degree strain	39.1	29.0197	-26.4888	32m
Ku-Ze 182	529 A Crossrope Structure	37.56	29.0203	-26.4923	32m
Ku-Ze 183	529 A Crossrope Structure	31.56	29.0210	-26.4958	32m
Ku-Ze 192	518H	35.15	29.0335	-26.5245	32m
Ku-Ze 195	518C 0 - 45 degree strain	39.1	29.0392	-26.5340	32m
Ku-Ze 196	518H	39.65	29.0404	-26.5360	32m
Ku-Ze 201	518C 0 - 45 degree strain	26.6	29.0498	-26.5518	32m
Ku-Ze 202	518H 42m	48.65	29.0511	-26.5540	32m
Ku-Ze 203	529 A Crossrope Structure	33.06	29.0532	-26.5579	32m
Ku-Ze 204	529 A Crossrope Structure	37.56	29.0553	-26.5617	32m
Ku-Ze 207	529 A Crossrope Structure	34.56	29.0607	-26.5715	32m
Ku-Ze 211	529 A Crossrope Structure	36.06	29.0661	-26.5835	32m
Ku-Ze 212	529 A Crossrope Structure	34.56	29.0665	-26.5871	32m
Ku-Ze 213	518C 0 - 45 degree strain	34.6	29.0669	-26.5909	32m
Ku-Ze 214	529 A Crossrope Structure	36.06	29.0673	-26.5923	32m
Ku-Ze 216	518C 0 - 45 degree strain	34.6	29.0689	-26.5987	32m
Ku-Ze 219	529 A Crossrope Structure	36.06	29.0720	-26.6074	32m
Ku-Ze 221	518H 42m	48.65	29.0753	-26.6154	32m
Ku-Ze 227	529 A Crossrope Structure	37.56	29.0844	-26.6381	32m
Ku-Ze 228	518C 0 - 45 degree strain	39.1	29.0859	-26.6418	32m
Ku-Ze 230	518H 42m	48.65	29.0867	-26.6486	32m
Ku-Ze 231	518C 0 - 45 degree strain	29.6	29.0873	-26.6525	32m
Ku-Ze 235	518C 0 - 45 degree strain	32.1	29.0927	-26.6676	32m
Ku-Ze 236 (existing)	518D 45 - 70 degree strain	26.65	29.0921	-26.6700	32m
Ku-Ze 67	518C 0 - 45 degree strain	30.1	28.9896	-26.1036	32m
Ku-Ze 72	518H	33.65	28.9886	-26.1173	32m
Ku-Ze 73	518H	26.15	28.9869	-26.1201	32m
Ku-Ze 74	518C 0 - 45 degree strain	32.1	28.9859	-26.1218	32m
Ku-Ze 78	518C 0 - 45 degree strain	39.1	28.9839	-26.1388	32m
Ku-Ze 79	518H	36.65	28.9830	-26.1430	32m
Ku-Ze 80	529 A Crossrope Structure	37.56	28.9822	-26.1470	32m
Ku-Ze 81	518C 0 - 45 degree strain	28.6	28.9814	-26.1505	32m
Ku-Ze 82	529 A Crossrope Structure	37.56	28.9816	-26.1544	32m
Ku-Ze 84	529 A Crossrope Structure	37.56	28.9820	-26.1615	32m
Ku-Ze 86	529 A Crossrope Structure	37.56	28.9824	-26.1693	32m
Ku-Ze 88	529 A Crossrope Structure	37.56	28.9829	-26.1778	32m
Ku-Ze 90	529 A Crossrope Structure	37.56	28.9833	-26.1856	32m
Ku-Ze 95	529 A Crossrope Structure	37.56	28.9844	-26.2053	32m
Ma-Zeu47	518D 45 - 70 degree strain	37.15	29.0231	-26.3885	32m
Ma-Zeu48	518D 45 - 70 degree strain	34.65	29.0199	-26.3910	32m
Ma-Zeu49	518D 45 - 70 degree strain	25.65	29.0173	-26.3929	32m

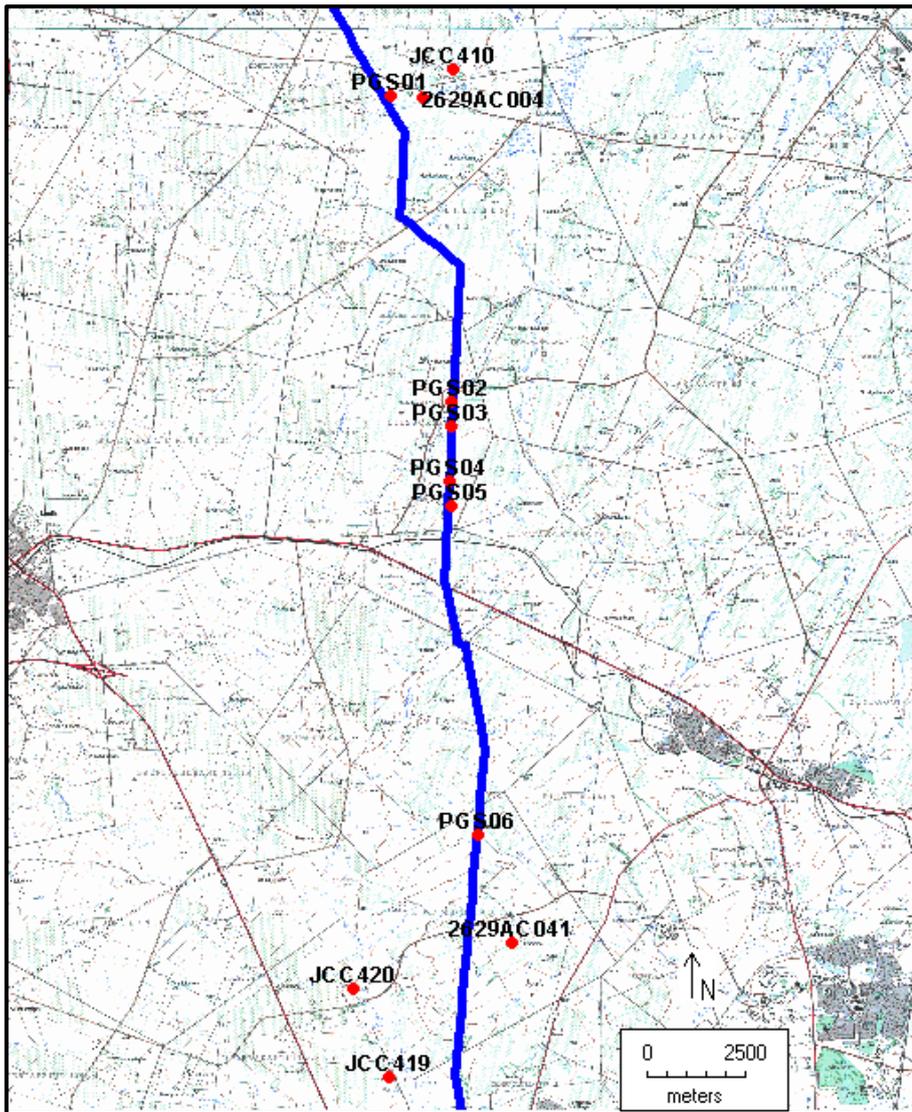
6. DESCRIPTION OF THE AFFECTED ENVIRONMENT

Based on available reports, heritage sites and features that are located within the a distance of 1km from the proposed power line were plotted on a map (JCC = Pistorius 2008; PGS = Fourie 2012; Map sheets = Archaeological Database). This list was used during the field survey and was supplemented with new sites that were identified.

Table 2. Identified heritage resources within 1 km from the study area.

Number	Name	Latitude	Longitude
2628BB001	Homestead	-26.13515	28.98645
2628BB002	Cemetery	-26.23278	28.99278
2628BB003	Graves	-26.16944	28.99583
2628BB004	Graves	-26.12083	28.96250
2628BB005	Cemetery	-26.13167	28.96556
2628BB006	Cemetery	-26.13194	28.97139
2628BB007	Cemetery: Mouton	-26.15889	28.96528
2628BB008	Grave: Mouton	-26.16694	28.97778
2629AA033	Graves	-26.20861	29.00722
2629AA035	Cemetery	-26.15028	29.00361
2629AC004	Cemetery	-26.26621	29.0123
2629AC041	Farmstead	-26.45861	29.03250
2629CA006	Cemetery	-26.54222	29.02778
2629CA007	Stone walling	-26.52306	29.03444
2629CA009	Stone Walling	-26.52444	29.03250
2629CA023	Cemetery	-26.69861	29.08596
2629CA031	Sewerage facility	-26.50885	29.02455
JCC401	Cemetery	-26.69220	29.09665
JCC406	Cemetery	-26.59482	28.99953
JCC410	Cemetery	-26.25990	29.01933
JCC412	Cemetery	-26.58012	29.05362
JCC413	Cemetery	-26.60425	29.05323
JCC414	Cemetery	-26.53356	29.02647
JCC416	Cemetery	-26.51822	29.02506
JCC417	Cemetery	-26.51656	29.01872
JCC418	Cemetery	-26.51481	29.01944
JCC419	Cemetery	-26.48919	29.00494
JCC420	Cemetery	-26.46917	28.99658
JCC422	Cemetery	-26.13583	28.97292
PGS01	Cemetery	-26.26606	29.00531
PGS02	Cemetery	-26.33536	29.01883
PGS03	Cemetery	-26.34128	29.01892
PGS04	Cemetery	-26.35356	29.01842
PGS05	Cemetery	-26.35942	29.01878
PGS06	Kraal	-26.43408	29.02486
PGS08	Cemetery	-26.52075	29.03206
PGS09	Grave	-26.52728	29.03425
PGS10	Cemetery	-26.52800	29.03386
PGS11	Cemetery	-26.53064	29.03756
PGS12	Kraal	-26.53131	29.03719
PGS13	Kraal	-26.55792	29.05300
PGS14	Cemetery	-26.58547	29.06669
PGS15	Cemetery	-26.62458	29.07975
PGS16	Kraal	-26.64894	29.08722





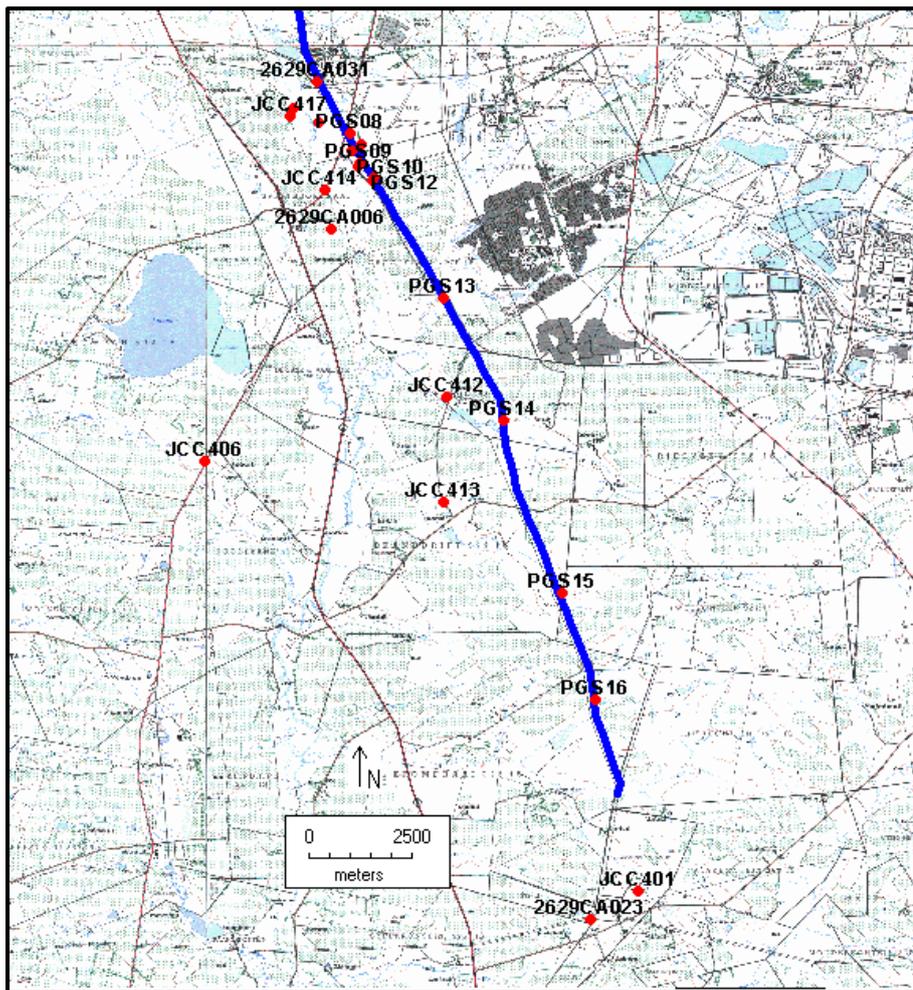


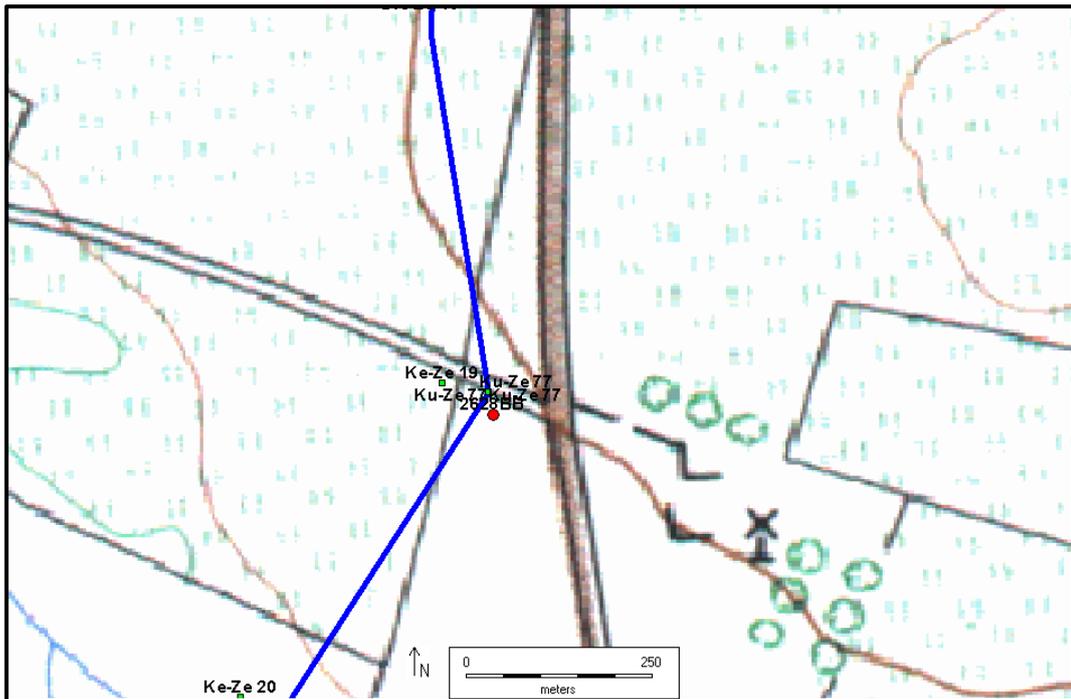
Fig. 1. Location of identified sites in the study area.

For the purpose of this report, only sites located within 70 m from the tower position are listed. As this is more than twice the proposed 32m buffer zone, this is seen as a large enough distance. This is seen as a large enough buffer area.

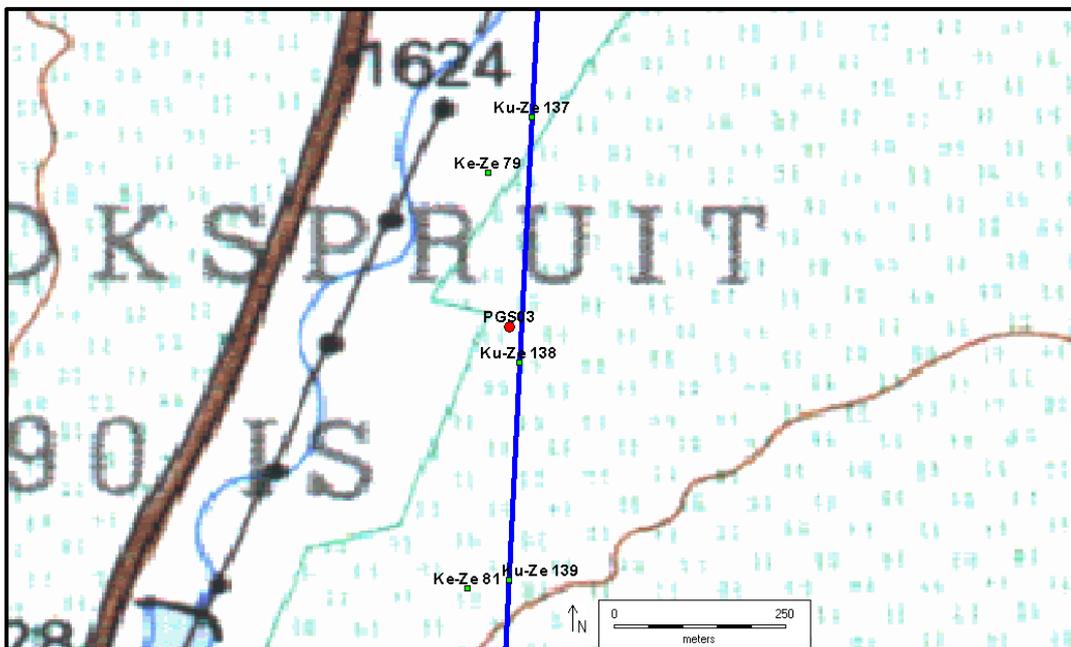
Sites identified to be located less than 70m from a tower:

Table 3. Identified sites within 70m from proposed tower positions.

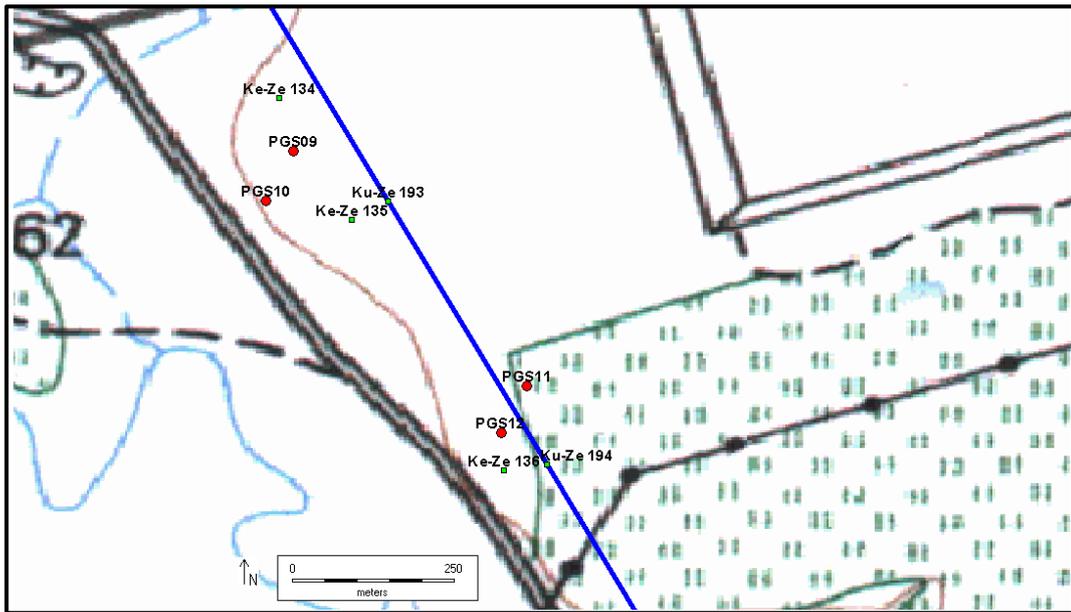
Number	Name	Latitude	Longitude	Tower	Distance
2628BB	Homestead	-26.13515	28.98645	Ku-Ze 104	30m
PGS03	Cemetery	-26.34128	29.01892	Ke-Ze 82	52m
PGS12	Kraal	-26.53131	29.03719	Ke-Ze 135	56m
PGS13	Kraal	-26.55792	29.05300	Ke-Ze 144	21m
PGS15	Cemetery	-26.62458	29.07975	Ku-Ze 244	70m
PGS16	Kraal	-26.64894	29.08722	Ku-Ze 232	60m



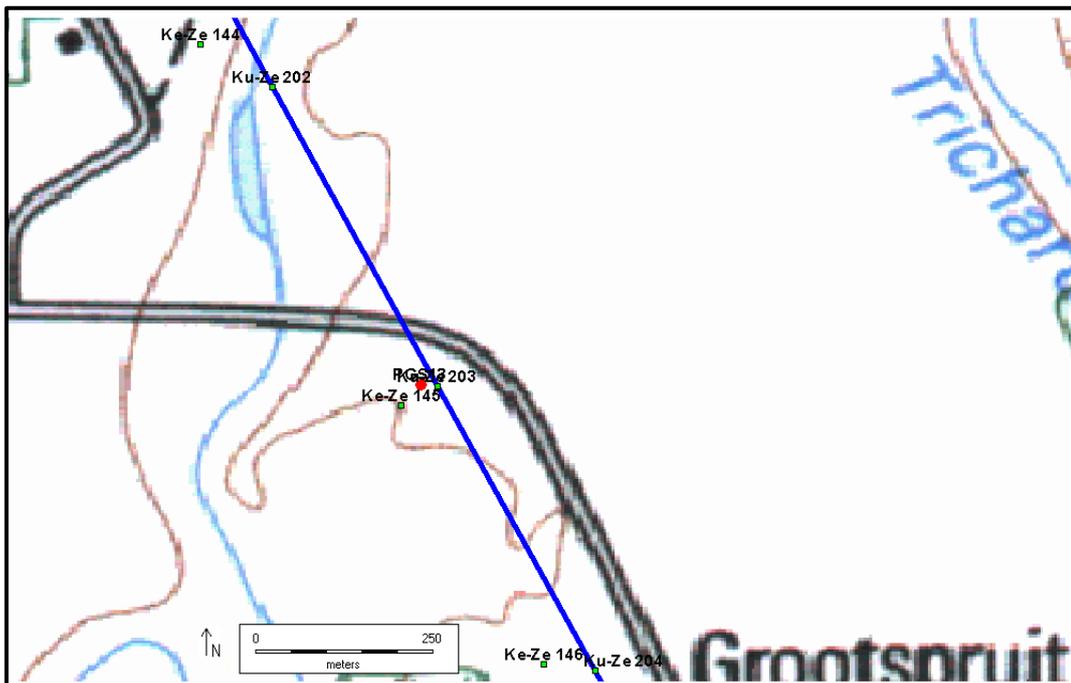
Site: 2628BB1 – Ku-Ze 77



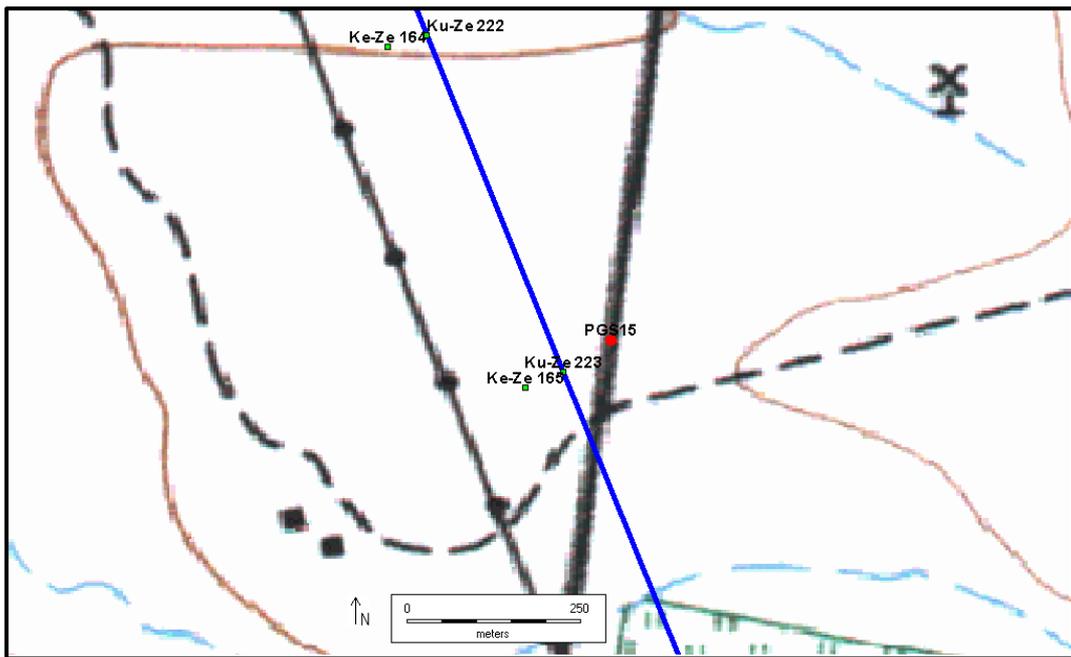
Site: PGS 03 – Ku-Ze 138



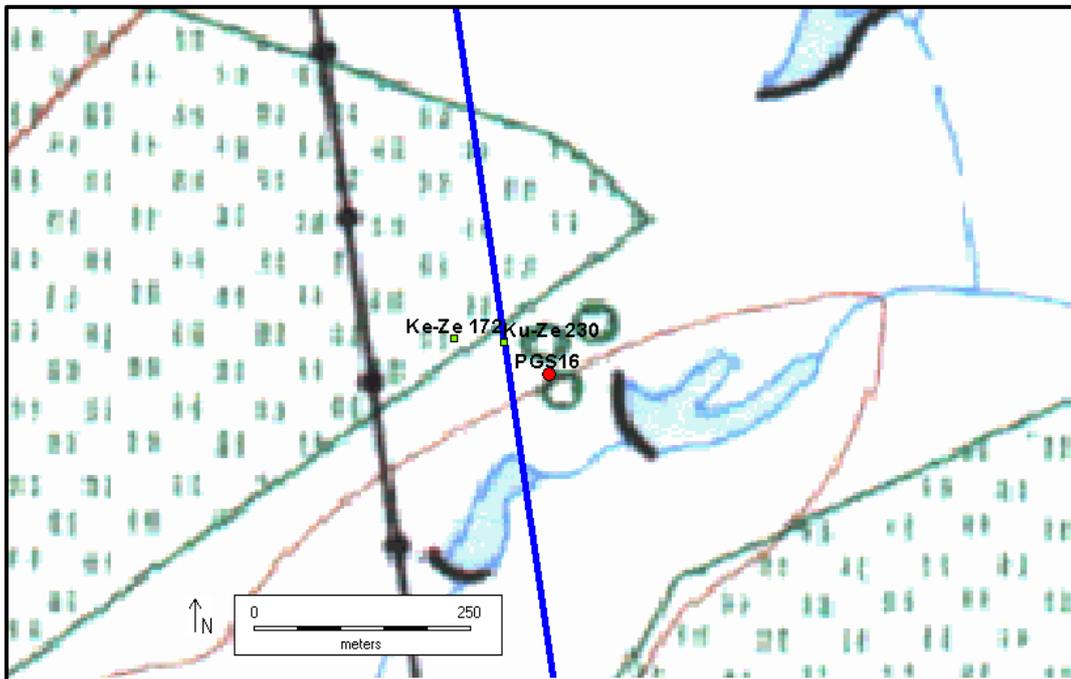
Site: PGS 12 – Ke-Ze 136



Site: PGS 13 – Ku-Ze 203



Site: PGS 15 – Ku-Ze 223



Site: PGS16 – Ku-Ze 230

7. MANAGEMENT MEASURES

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be

avoided and that are directly impacted by the proposed development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted on can be written into the management plan, whence they can be avoided or cared for in the future.

7.1 Objectives

- Protection of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft.
- The preservation and appropriate management of new discoveries in accordance with the NHRA, should these be discovered during construction activities.

The following shall apply:

- Known sites should be clearly marked in order that they can be avoided during construction activities.
- The contractors and workers should be notified that archaeological sites might be exposed during the construction activities.
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).

7.2 Control

In order to achieve this, the following should be in place:

- A person or entity, e.g. the Environmental Control Officer, should be tasked to take responsibility for the heritage sites and should be held accountable for any damage.
- Known sites should be located and isolated, e.g. by fencing them off. All construction workers should be informed that these are no-go areas, unless accompanied by the individual or persons representing the Environmental Control Officer as identified above.
- In areas where the vegetation is threatening the heritage sites, e.g. growing trees pushing walls over, it should be removed, but only after permission for the methods proposed has been granted by SAHRA. A heritage official should be part of the team executing these measures.

8. RECOMMENDATIONS

The aim of the current report is to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the tower footings that are affecting the water courses or within the 32m buffer zone of a watercourse, as well as the 55m servitude of the affected towers.

From the available published and unpublished reports on the cultural heritage resources of region, as well as the field survey, it was revealed the region does not have a high potential for heritage sites:

- Only a few sites dating to the Stone Age have been documented in the region; no reports of substantial surface finds of stone tools are known;
- Iron Age settlement took place on a limited scale, with all sites dating to the Late Iron Age.
- Most known heritage sites date to the recent past and consist of farmsteads, formal and informal burial sites as well as elements of infrastructure development, e.g. bridges.

Impact assessment

Only six sites of cultural significance have been identified to be less than 70m from a proposed tower position.

Number	Name	Latitude	Longitude	Tower	Distance
2628BB	Homestead	-26.13515	28.98645	Ku-Ze 104	30m
PGS03	Cemetery	-26.34128	29.01892	Ke-Ze 82	52m
PGS12	Kraal	-26.53131	29.03719	Ke-Ze 135	56m
PGS13	Kraal	-26.55792	29.05300	Ke-Ze 144	21m
PGS15	Cemetery	-26.62458	29.07975	Ku-Ze 244	70m
PGS16	Kraal	-26.64894	29.08722	Ku-Ze 232	60m

Reasoned opinion as to whether the proposed activity should be authorised:

- From a heritage point of view it is recommended that the proposed development be allowed to continue

Conditions for inclusion in the environmental authorisation:

- The proposed development can only continue on condition of acceptance of the recommended mitigation measures, as set out in the 2102 report (Fourie 2012). This, inter alia, would require a watching brief whereby a qualified archaeologist is in attendance if any construction activities takes place in the vicinity of the identified sites.
- Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.

9. REFERENCES

9.1 Data bases

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Heritage Atlas Database, Pretoria.
National Archives of South Africa
SAHRA Archaeology and Palaeontology Report Mapping Project (2009)

9.2 Literature

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Fourie, W. 2012. *Proposed Kusile/Kendal to Zeuss 400kv transmission line: archaeological and palaeontological walk down*. Unpublished report: PGS Heritage and Grave Solutions.

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Van Schalkwyk, J. 2004. *Heritage impact assessment for the Smithfield mining development, Witbank district, Mpumalanga*. Unpublished report 2004KH34C. Pretoria: National Cultural History Museum.

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Van Schalkwyk, J.A 2006. *Heritage impact assessment for the proposed new power station, Witbank Area*. Unpublished report 2006KH111. Pretoria: National Cultural History Museum.

Wadley, L & Turner, G. 1987. Hope Hill shelter: a Later Stone Age site in southern Transvaal. *South African Journal of Science* 83(3):98-105.

9.3 Maps and aerial photographs

1: 50 000 Topocadastral maps
Google Earth

APPENDIX 1: INDEMNITY AND TERMS OF USE OF THIS REPORT

The findings, results, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. The report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken and the author reserve the right to modify aspects of the report including the recommendations if and when new information may become available from ongoing research or further work in this field, or pertaining to this investigation.

Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. The author of this report will not be held liable for such oversights or for costs incurred as a result of such oversights.

Although the author exercises due care and diligence in rendering services and preparing documents, he accepts no liability and the client, by receiving this document, indemnifies the author against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with services rendered, directly or indirectly by the author and by the use of the information contained in this document.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of this report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

APPENDIX 2: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF IDENTIFIED HERITAGE RESOURCES

Significance

According to the NHRA, Section 2(vi) the **significance** of a heritage sites and artefacts is determined by it aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

1. Historic value				
Is it important in the community, or pattern of history				
Does it have strong or special association with the life or work of a person, group or organisation of importance in history				
Does it have significance relating to the history of slavery				
2. Aesthetic value				
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group				
3. Scientific value				
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage				
Is it important in demonstrating a high degree of creative or technical achievement at a particular period				
4. Social value				
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons				
5. Rarity				
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage				
6. Representivity				
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects				
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class				
Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.				
7. Sphere of Significance		High	Medium	Low
International				
National				
Provincial				
Regional				
Local				
Specific community				
8. Significance rating of feature				
1.	Low			
2.	Medium			
3.	High			

APPENDIX 3. RELEVANT LEGISLATION

National Heritage Resources Act (Act no 25 of 1999)

All archaeological and palaeontological sites and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(4) No person may, without a permit issued by the responsible heritage resources authority-

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

In terms of cemeteries and graves the following (Section 36):

(1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) No person may, without a permit issued by SAHRA or a provincial 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, 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.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-

interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

The National Heritage Resources Act (Act no 25 of 1999) stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

Presenting archaeological sites as part of tourism attraction requires, in terms 44 of the Act, a Conservation Management Plan as well as a permit from SAHRA.

(1) Heritage resources authorities and local authorities must, wherever appropriate, co-ordinate and promote the presentation and use of places of cultural significance and heritage resources which form part of the national estate and for which they are responsible in terms of section 5 for public enjoyment, education, research and tourism, including-

- (a) the erection of explanatory plaques and interpretive facilities, including interpretive centres and visitor facilities;
- (b) the training and provision of guides;
- (c) the mounting of exhibitions;
- (d) the erection of memorials; and
- (e) any other means necessary for the effective presentation of the national estate.

(2) Where a heritage resource which is formally protected in terms of Part I of this Chapter is to be presented, the person wishing to undertake such presentation must, at least 60 days prior to the institution of interpretive measures or manufacture of associated material, consult with the heritage resources authority which is responsible for the protection of such heritage resource regarding the contents of interpretive material or programmes.

(3) A person may only erect a plaque or other permanent display or structure associated with such presentation in the vicinity of a place protected in terms of this Act in consultation with the heritage resources authority responsible for the protection of the place.

APPENDIX 4. RELOCATION OF GRAVES

If the graves are younger than 60 years, an undertaker can be contracted to deal with the exhumation and reburial. This will include public participation, organising cemeteries, coffins, etc. They need permits and have their own requirements that must be adhered to.

If the graves are older than 60 years old or of undetermined age, an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. This is a requirement by law.

Once it has been decided to relocate particular graves, the following steps should be taken:

- Notices of the intention to relocate the graves need to be put up at the burial site for a period of 60 days. This should contain information where communities and family members can contact the developer/archaeologist/public-relations officer/undertaker. All information pertaining to the identification of the graves needs to be documented for the application of a SAHRA permit. The notices need to be in at least 3 languages, English, and two other languages. This is a requirement by law.
- Notices of the intention needs to be placed in at least two local newspapers and have the same information as the above point. This is a requirement by law.
- Local radio stations can also be used to try contact family members. This is not required by law, but is helpful in trying to contact family members.
- During this time (60 days) a suitable cemetery need to be identified close to the development area or otherwise one specified by the family of the deceased.
- An open day for family members should be arranged after the period of 60 days so that they can gather to discuss the way forward, and to sort out any problems. The developer needs to take the families requirements into account. This is a requirement by law.
- Once the 60 days has passed and all the information from the family members have been received, a permit can be requested from SAHRA. This is a requirement by law.
- Once the permit has been received, the graves may be exhumed and relocated.
- All headstones must be relocated with the graves as well as any items found in the grave.

Information needed for the SAHRA permit application

- The permit application needs to be done by an archaeologist.
- A map of the area where the graves have been located.
- A survey report of the area prepared by an archaeologist.
- All the information on the families that have identified graves.
- If graves have not been identified and there are no headstones to indicate the grave, these are then unknown graves and should be handled as if they are older than 60 years. This information also needs to be given to SAHRA.
- A letter from the landowner giving permission to the developer to exhume and relocate the graves.
- A letter from the new cemetery confirming that the graves will be reburied there.
- Details of the farm name and number, magisterial district and GPS coordinates of the gravesite.

APPENDIX 5. SPECIALIST COMPETENCYJohan (Johnny) van Schalkwyk

J A van Schalkwyk, D Litt et Phil, heritage consultant, has been working in the field of heritage management for more than 30 years. Based at the National Museum of Cultural History, Pretoria, he has actively done research in the fields of anthropology, archaeology, museology, tourism and impact assessment. This work was done in Limpopo Province, Gauteng, Mpumalanga, North West Province, Eastern Cape, Northern Cape, Botswana, Zimbabwe, Malawi, Lesotho and Swaziland. Based on this work, he has curated various exhibitions at different museums and has published more than 60 papers, many in scientifically accredited journals. During this period he has done more than 2000 impact assessments (archaeological, anthropological, historical and social) for various government departments and developers. Projects include environmental management frameworks, road-, pipeline-, and power line developments, dams, mining, water purification works, historical landscapes, refuse dumps and urban developments.