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HERITAGE IMPACT ASSESSMENT (HIA) FOR THE PROPOSED POWER LINE DEVELOPMENT AT THE MAMPHULI-DZWERANI EXT A SUBSTATION AT MAMPHULI VILLAGE AND AN APPROXIMATELY 6KM LOOP IN LOOP OUT BERSFORT OF 2X132KV POWER LINE FROM AN EXISTING 132KV POWERLINE AT TSHITUNGULWANE VILLAGE, NEAR VUWANI TOWN UNDER VHEMBE DISTRICT IN THE LIMPOPO PROVINCE

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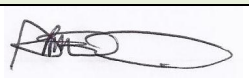
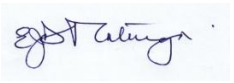
Saturday, 17 June 2018

REPORT DETAILS

Project name:	**APPLICATION PROCESSES FOR THE PROPOSED DEVELOPMENT OF MAMPHULI-DZWERANI EXT A SUBSTATION AT MAMPHULI VILLAGE AND AN APPROXIMATELY 6KM LOOP IN LOOP OUT BERSFORT OF 2X132KV POWER LINE FROM AN EXISTING 132KV POWERLINE AT TSHITUNGULWANE VILLAGE, NEAR VUWANI TOWN UNDER VHEMBE DISTRICT IN THE LIMPOPO PROVINCE**
CLIENT:	Eskom Holding (SOC) Limited Limpopo Operating Unit (LOU)
HERITAGE FIRM:	Ecorite Consultants (Pty) ltd
PROJECT TEAM:	**Matodzi A. Silidi, Pr. Sci. Nat.** M.A Env Management (UOFS), Post Graduate Diploma in Museum and Heritage Studies (UCT), B. Env. Sc. (UNIVEN), ASHEEP (NOSA), SAMTRAC (NOSA), Environmental and Mining Rehab (Potch). **Dr. Edward Matenga:** PhD Archaeology & Heritage (Uppsala/ Sweden); MPhil. Archaeology (Uppsala); Certificate in the Integrated Conservation of Territories and Landscapes of Heritage Value (ICCROM, Rome). **T.R Silidi:** BA Social Sciences (Wits), BA Hons (Univen), Masters in Social Impact Assessment (UJ), Negotiations (SARWA)

DOCUMENT CONTROL

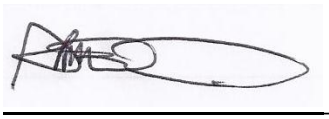
	NAME	SIGNATURE	DATE
SUPERVISION	**Mr M.A Silidi**		**2018/09/28**
FIELD WORK & REPORT	**Dr E. Matenga (PhD)**		**2018/09/28**
REPORT EXTERNAL REVIEW	**Prof. I. Pikirayi**		**5/10/2018**

DECLARATION OF INDEPENDENCE

Ecorite Consultants (Pty) Ltd is an independent consultant: We hereby declare that we have no interest, be it business, financial, personal or other vested interest in the undertaking of the proposed activity, other than fair remuneration for work performed, in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999).

DISCLAIMER

All possible care was taken to identify and document heritage resources during the survey in accordance with best practices in archaeology and heritage management. However it is always possible that some hidden or subterranean sites are overlooked during a survey. Ecorite Consultants will not be held liable for such oversights and additional costs thereof.



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ABBREVIATIONS

BP	Before Present
CRM	Cultural Resources Management
CMP	Conservation Management Plan
DEDET	Department of Economic Development, Environment and Tourism
DEA	Department of Environmental Affairs
EIA	Environmental Impact Assessment
HIA	Heritage Impact Assessment
ICCROM	Centre of the Study of the Preservation and Restoration of Cultural Property (Rome)
LSA	Late Stone Age
LIA	Later Iron Age
LIHRA	Limpopo Heritage Resources Authority
PHRA	Provincial Heritage Resources Authority
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
NEMA	National Environmental Management Act
SAHRA	South African Heritage Resources Agency

DEFINITIONS

Archaeology: The study of the human past through its material remains.

Archaeological material: remains resulting from human activity left as evidence of their presence which, as proscribed by South African heritage legislation, are older than 100 years, which are in the form of artefacts, food remains and other traces such as rock paintings or engravings, burials, fireplaces and structures.

Artefact/Ecofact: Any movable object that has been used, modified or manufactured by humans.

Assemblage: A group of artefacts recurring together at a particular time and place, and representing the sum of human activities.

Catalogue: An inventory or register of artefacts and/or sites.

Conservation: All the processes of looking after a site/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

Culture: A contested term, "culture" could minimally be defined as the learned and shared things that people have, do and think.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeolontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This include intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.

Early Stone Age: Predominantly the Oldowan and Acheulean hand axe industry complex dating to + 1Myr yrs – 250 000 yrs. before present.

Early Iron Age: Refers cultural period of the first millennium AD associated with the introduction of metallurgy and agriculture in Eastern and Southern Africa

Later Iron Age: Refers to the period after 1000AD marked by increasing social and political complexity. Evidence of economic wealth through trade and livestock keeping especially cattle

Excavation: A method in which archaeological materials are extracted, involving systematic recovery of archaeological remains and their context by removing soil and any other material covering them.

Grave: a place of burial which include materials such as tombstone or other marker such as cross etc.

Historic material: means remains resulting from human activities, which are younger than 100 years and no longer in use, which include artefacts, human remains and artificial features and structures.

Intangible heritage: Something of cultural value that is not primarily expressed in a material form e.g. rituals, knowledge systems, oral traditions, transmitted between people and within communities.

Historical archaeology: the study of material remains from both the remote and recent past in relationship to documentary history and the stratigraphy of the ground in which they are found; or archaeological investigation on sites of the historic period. In South Africa it refers to the immediate pre-colonial period, contact with European colonists and the modern industrial period.

***In situ* material:** means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.

Later Iron Age: The period from the beginning of the 2nd millennium AD marked by the emergence if complex state society and long-distance trade contacts.

Late Stone Age: The period from ± 30 000-yr. to the introduction of metals and farming technology

Middle Stone Age: Various stone using industries dating from ± 250 000 yr. - 30 000 yrs. ago

Monuments: architectural works, buildings, sites, sculpture, elements or structures of an archaeological nature, inscriptions, cave dwellings which are outstanding from the point of view of history, art and science.

Place: means site, area, building or other work, group of buildings or other works, together with pertinent contents, surroundings and historical and archaeological deposits.

Preservation: means protecting and maintaining the fabric of a place in its existing state and retarding deterioration or change, and may include stabilization where necessary.

Sherd: ceramic fragment.

Significance grading: Grading of sites or artefacts according to their historical, cultural or scientific value.

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

Site Recoding Template: Site recording form.

EXECUTIVE SUMMARY

This Heritage Impact Assessment (HIA) Report has been prepared in support of an application for environmental authorization for the development of an electric substation in Mamphuli Village and construction of a 132kV loop-in and loop-out line from an existing 132kV powerline at Tshitungulwane Village, Limpopo Province. This is a project of Eskom Holding (SOC) Limpopo Operating Unit (LOU)

The following is a summary of the findings:

The preferred site for the proposed substation and 5 other locations along the preferred route of the proposed powerline were examined. The following are the findings:

1 Preferred site for placement of the substation

The preferred site (PSS) is located on the southern limits of Mamphuli Village. Ground visibility was moderate to poor due to grass cover. Nothing of archaeological or historical significance was found.

2 Grave / Monument of Maswanganyi

A grave and monument dedicated to Maswanganyi (Site MHL01) is located 200m to the northwest of the substation site. The plinth of the monument has a polished granite plaque bearing the inscriptions:

MASWANGANYI

SHIHHLOMULO, MAMPHURI.

3 Recommendation

This heritage impact evaluation is respectful of the sanctity of graves / burial grounds / and sacred memorials. It is therefore recommended that if the substation will be placed at PSS, a buffer of 200m should be reserved between the memorial and the northern perimeter of the substation. Furthermore a cluster of trees comprising sickle bush and a large mature sycamore fig tree (P1 - Lat: 23° 4'34.47"S, Long: 30°25'28.61"E) must be preserved to provide a natural screen/buffer between the memorial and the proposed substation.

4 Proposed cemetery – Mamphuli Village

The site of a proposed village cemetery is situated 100m southwest of the Maswanganyi Memorial (P2 - Lat: 23° 4'35.83"S; Long: 30°25'23.56"E).

5 Recommendation

It is recommended that a buffer distance of 200m be reserved between the proposed substation and proposed cemetery.

6 Preferred route of the proposed power line

Five locations along the corridor of the proposed loop-in loop-out lines were surveyed intensively to provide sample data on the heritage sensitivity of the area. Lwenzhe Technical School (MHL02) located 1.2km west of the power line corridor. In 1976 students from the school joined the countrywide protests. Significance in the struggle history is noted although the proposed development does not have a direct impact. No other historically or archaeologically sensitive sites were found along the preferred route of the power line.

7 Proposed alternative placement of the substation

The proposed alternative site (ASS) is located near Mahematshena School. Ground visibility was moderate to poor due to grass cover. Nothing of archaeological or historical significance was found.

8 Proposed alternative route of the power line

Three locations along the corridor of the proposed loop-in loop-out lines were surveyed to provide sample data on the heritage sensitivity of the area. No historically or archaeologically sensitive sites were found along the route of the power line. No historically or archaeologically sensitive sites were found along the alternative route of the powerline.

9 Significance ranking of findings

The significance ranking (with a colour scheme) refers to perceived impacts and risk of the proposed development. Appropriate interventions and mitigation strategies are also proposed.

	RANKING	**SIGNIFICANCE**	**No of sites**
1	High	National and Provincial heritage sites (Section 7 of NHRA). All burials including those protected under Section 36 of NHRA. A 200m wide buffer zone will be maintained between the Mswanganyi burial/memorial and the proposed substation.	1 burial ground
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. These may be protected at the recommendations of a heritage expert.	0
3	Medium B	Sites exhibiting archaeological and historical characteristics of the area, but do not warrant further action after they have been documented.	1 (school)
4	Low	Heritage sites which have been recorded, but considered of minor importance relative to the proposed development.	0
		TOTAL	**2**

10 Risk assessment of the findings

EVALUATION CRITERIA	**RISK ASSESSMENT**
Description of potential impact	Negative impacts range from partial to total destruction of surface and under-surface movable/immovable relics.
Nature of Impact	Negative impacts can both be direct or indirect.
Legal Requirements	Sections 34, 35, 36, 38 of National Heritage Resources Act No. 25 (1999)
Stage/Phase	Construction phase.
Nature of Impact	Negative, both direct & indirect impacts.
Extent of Impact	Site preparation, trenching and foundations have potential to damage heritage resources above and below the surface not seen during the survey

Duration of Impact	Any accidental destruction of surface or subsurface relics is not reversible, but can be mitigated.
Intensity	Uncertain.
Probability of occurrence	Medium.
Confidence of assessment	High.
Level of significance of impacts before mitigation	High.
Mitigation measures	A 200m wide buffer zone will be maintained between the Mswanganyi burial/memorial and the proposed substation. The same distance will be reserved between the proposed substation and the proposed village cemetery. If heritage resources are discovered during the development phase, the heritage resources authorities must be informed and a heritage expert called to attend.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

11 Recommendations and conclusions

This impact study confirms the suitability of the preferred site for the placement of the substation as well as the preferred route for the power line provided that the following precautions are taken: A 200m wide buffer zone will be reserved between the Maswanganyi burial/memorial and the proposed substation. The same distance will be reserved between the proposed Mamphuli Village cemetery and the proposed substation.

The suitability of the preferred route for the power line is also confirmed since no historically or archaeologically sensitive sites were found along its corridor. If any other finds were to be made during the development phase, the procedure is to approach the relevant heritage authorities (SAHRA and/or the Provincial Heritage Resources Authority) and a heritage expert will be called to attend.

1. INTRODUCTION

This Heritage Impact Assessment (HIA) Report has been prepared in support of an application for environmental authorization for the proposed 132kV loop-in loop-out line from the existing 132kV line passing near Tshitungulwane to the proposed new substation at Mamphuli Village, Limpopo Province. This is a project of Eskom Holding (SOC) Limited Limpopo Operating Unit (LOU).

1.1. Nature of proposed development

An electrical substation has been proposed for establishment at Mamphuli Village for distribution of power to a number of villages and service centres in the neighbourhood including Mamphuli itself, Tshitungulwane, Ha-Manavhela, Dzwerani and Tshino. As a rule the plan has a preferred site for the substation and preferred route for the powerline, and an alternative substation placement site and alternative powerline route. The main project components are the substation with a footprint of 2ha and 132kV loop-in and loop-out of the 132kV power line 6km distance to the south passing in an east-west axis between Tshitungulwane and Vuwani Villages. The project entails clearance of land 2ha in extent and excavations for placement of an electrical substation and cutting of trees on the path of the proposed loop-in loop-out line. Holes will be excavated for planting of poles to carry the powerlines. The extent of physical works triggers Section 38 of the National Heritage Resources Act (25 / 1999) requiring that a Heritage Impact Assessment (HIA) be conducted. The aim of heritage Impact studies is to evaluate the impact a proposed development or site alteration on cultural heritage resources and to recommend an overall approach to the conservation of the resources. An HIA is based on an understanding of heritage and its significance, and if heritage is found in the area of the proposed development mitigation options are considered and recommendations made on a conservation strategy that best conserves the resource(s) within the context of the proposed development.

1.2. Locational details: the receiving environment

Mamphuli Village is located on a low plain 15km distance from the foothills of the Soutpansberg Mountains and the same distance southwest of Thohoyandou as the crow flies. This area is close to the western limits of the Lowveld, a vast plain east of the Soutpansberg Mountains, which stick out prominently from the plain. Drainage is

controlled by the Luvuvhu descending from the south-eastern slopes of the Soutpansberg. Mamphuli village is spread on a minor watershed between the Luvuvhu to the south and a minor tributary to the north, both rivers trending northeast to a confluence just before the tail end of Nandoni Dam.

Vegetation configuration is the Lowveld type although to an extent degraded with a few mature scattered trees, this is due to human settlement and cultivation. But the edges of the Luvuvhu River nestle a good riverine woodland with some evergreen species. Grass cover is dense on the river sides (Figures 1-7).

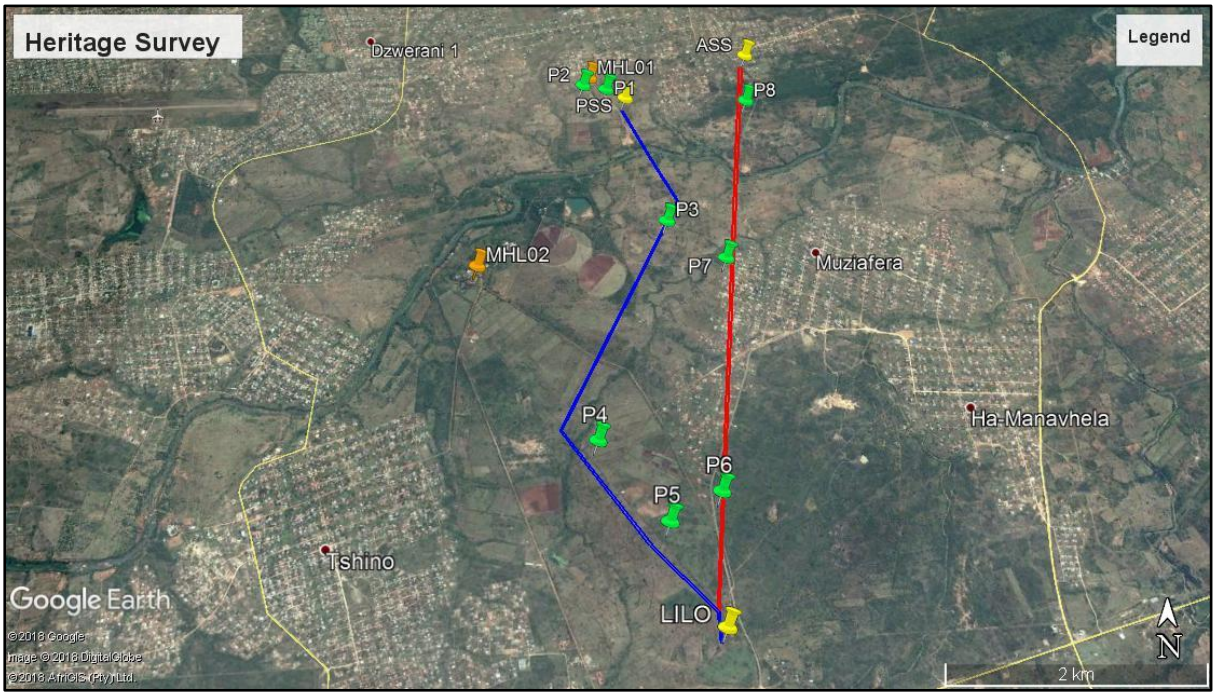


Figure 1: Google-Earth map shows the location of the study area. PSS - Preferred site for substation. ASS - Alternative Site for the substation. Blue – Preferred route for power line; Red – alternative route for the power line. Orange peg – Heritage site. Green peg – surveyed area, no heritage resources found.

1.2.1. *Locational Reference*

Proposed location of the substation (PSS)	23° 4'23.80"S	30°26'20.34"E
Proposed connection to 132kV power line passing between Tshitungulwane and Vuwani Village	23° 7'24.91"S	30°26'8.71"E
Alternative Location of the substation (ASS)	23° 4'24.07"S	30°26'20.19"E

Figure 2: View northwest to the Soutpansberg Mountains Mamphuli Village to the NNW of the proposed substation

Figure 3: View northwest to the Soutpansberg Mountains from the site of the proposed substation. Grass cover and mature fig tree (*Ficus sycomorus*).

Figure 4: Proposed substation site, view southeast across the Luvuvhu River towards Tshitungulwane and Vuwani Villages.

Figure 5: From the site of the proposed substation, view southwest shows dense woodland on the edges of the Luvuvhu River.

Figure 6. Mamphuli Village, nucleated settlement in the background, sparse woodland and fields in the foreground.

Figure7: View towards the Soutpansberg Mountains from the western outskirts of Tshitungulwane Village

2. LEGAL CONTEXT

2.1. Heritage Impact Assessments

Section 38 of the National Heritage Resources Act (No 25 of 1999) specifies the nature and scale of development projects which require a Heritage Impact Assessment as mitigation:

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50m in length;

(c) any development or other activity which will change the character of a site—

(i) exceeding 5 000m² in extent; or

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) the re-zoning of a site exceeding 10 000 m2 in extent; or

(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.

An Impact assessment is necessary due to the thresholds underlined above.

2.2. Protection of historic buildings

Section 34 of the NHRA provides for automatic provisional protection of all structures and features older than 60 years unless otherwise proof can be furnished that they don't carry heritage value.

2.3. Protection of archaeological and palaeontological sites

Section 35 (4) of then NHRA prohibits the destruction of archaeological, palaeontological and meteorite sites:

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.

2.4. Protection of Graves and Burial Grounds

Section 36 of the NHRA gives priority for the protection of Graves and Burial Grounds of victims of conflict and graves and burial grounds more than 60 years old.

2.5. The Burra Charter on Conservation of Places of Cultural Significance

Some generic principles and standards for the protection of heritage resources in South Africa are drawn from international charters and conventions. In particular South Africa has adopted the **Australia Charter for the Conservation of Places of Cultural Significance (the Burra Charter 1999)** as a benchmark best practice in heritage management.

3. Some important theoretical concepts

The concept of cultural landscapes is of relevant application when dealing with heritage in built environments. Cultural landscapes are defined in Paragraph 47 of the *Operational Guidelines for the Implementation of the World Heritage Convention (2015 edition)* as “cultural properties that represent the combined works of nature and of man" …. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal.

A cultural landscape is as "a geographic area including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. There are several types of cultural landscapes including historic sites, historic vernacular landscapes, and ethnographic landscapes. Historic landscapes include villages, rural communities and cemeteries. They are composed of a number of character-defining features which, individually or collectively contribute to the landscape's physical appearance as they have evolved over time. In addition to vegetation and topography, cultural landscapes may include artificial elements such as roads, paths, and buildings. A Historic Vernacular Landscape is a landscape that evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family or a community, the landscape reflects the physical, biological, and cultural character of those everyday lives. Function plays a significant role in vernacular landscapes. Examples include rural villages and agricultural landscapes.[1]

Mamphuli and Tshitungulwane are typical of rural settings in Limpopo Province – predominantly scattered homesteads and occasionally nucleated settlements (Figs 8-9). They represent a cultural rural landscape. Because there so many such villages in the Limpopo Province and in other provinces there is no urgency to urge preservation of archetypal examples, and there is no legislation or policy yet to that effect.

[1] Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes: https://www.nps.gov/TPS/how-to-preserve/briefs/36-cultural-landscapes.htm

Figure 8: Mamphuli Village. Scattered homesteads surrounded by sparse woodland. These elements are typical of the rural landscape in this part of Limpopo Province.

Figure 9: Typical street view in Tshitungulwane Village; unpaved streets and semi-planned residential layout.

4. METHODOLOGY

4.1. Desktop Research

Published historical and heritage reports were consulted and relevant background data collected as part of the documentary analysis. This is often referred to as a desktop study or literature review. The internet was an important portal for accessing reports of previous research in the broader area, in particular heritage impact assessment reports. The desk study allowed a thorough understanding of the heritage potential of the study area. The ethno-history of the area was researched.

4.2. Ground Survey

A ground survey was conducted 11 June 2018 to locate and document heritage elements of the receiving environment. A ground survey is a systematic procedure for the identification and documentation of archaeological, historical and heritage sites. Systematic foot surveys were undertaken in accordance with standard archaeological practice by which heritage elements can be observed and documented.

In order to ensure a good sample along the route of the proposed loop-in and loop-out line survey points were randomly selected.

4.3. Limitations

4.3.1. Visibility

Visibility was moderate to poor due to grass cover.

5. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

An outline of the cultural sequence in South Africa is given here to provide context for the identification of heritage resources in the study area.

5.1. Cultural sequence summary

PERIOD	EPOCH	ASSOCIATED CULTURAL GROUPS	TYPICAL MATERIAL EXPRESSIONS
Early Stone Age 2.5m – 250 000 YCE	Pleistocene	Early Hominids: *Australopithecines* *Homo habilis* *Homo erectus*	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First *Homo sapiens* species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	*Homo sapiens* including San people	Typically small to minute stone tools such as arrow heads, points and bladelets.
Early Iron Age / Early Farmer Period c300 – 900 AD (or earlier)	Holocene	Iron Age Farmers	Typically distinct ceramics, bead ware, iron objects, grinding stones.
Later Iron Age 900ADff	Holocene	Iron Age Farmers, emergence of complex state systems	Typically distinct ceramics, evidence of long distance trade and contacts
(ii) Mapungubwe (K2)	1350AD		Metals including gold, long distance exchanges
(ii) Historical period	Nguni / Sotho/Venda people	Iron Age Farmers	Mfecance / Difaqane
(iii) Colonial period	19th Century	European settlers / farmers / missionaries/ industrialisation	Buildings, Missions, Mines, metals, glass, ceramics

5.2. Appearance of Hominids

Important fossil evidence of hominids occurs in South Africa dating to 3million years ago. The hominid site at Makapansgat 50km south of Polokwane is one of the most famous hominids sites in the world featuring the genus *Australopithecus africanus*. The site has been inscribed on the UNESCO World Heritage list as a serial nomination together with Taung in the Northwest Province and Cradle Humankind near Krugersdorp in Gauteng Province.

5.3. The Stone Age

5.3.1. *The Early Stone Age [1.4 million – 250 000 yrs BP]*

The Early Stone Age marks the earliest appearance of stone artefacts about 1.4 million years ago. Such tools bore a consistent shape such as the pear-shaped handaxe, cleavers and core tools (Deacon & Deacon, 1999). These tools, which have been called Oldowana and Acheulian after sites in Tanzania and France respectively, were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus. EIA artefacts are usually found near sites where they were manufactured and thus in close proximity to the raw material or at butchering sites. The early hunters are classified as hominids or proto-humans, meaning that they had not evolved to the present human form.

5.3.2. *Middle Stone Age (MSA) [250 000 yrs – 40 000 yrs BP]*

The Middle Stone Age (MSA), which appeared 250 000 years ago, is marked by the introduction of a new tool kit which included prepared cores, parallel-sided blades and triangular points hafted to make spears. By then humans had become skilful hunters, especially of large grazers such as wildebeest, hartebeest and eland. It is also believed that by then, humans had evolved significantly to become anatomically modern. Caves were used for shelter suggesting permanent or semi-permanent settlement. Furthermore there is archaeological evidence from some of the caves indicating that people had mastered the art of making fire. These were two remarkable steps in human cultural advancement.[2]

The ongoing debate about new hominid finds near Sterkfontein assigned to the genus *Homo Naledi* and dated to between 335 000 and 236 000 MYA presents problems for archaeologists regarding the cultural status of hominids. The time period overlaps between the EIA and MSA perhaps suggesting the MSA practitioners were primate species (The Star, 10 May 2017, p1 & 12).

5.3.3. *Later Stone Age (LSA)[40 000 yrs to ca 2000 yrs BP]*

By the beginning of the LSA, humans are classified as *Homo sapiens* which refer to the modern physical form and thinking capabilities. Several behavioural traits are

[2] Deacon, J & H. Deacon. 1999. *Human Beginnings in South Africa*. Cape Town: David Philip.

exhibited, such as rock art and purposeful burials with ornaments, became a regular practice. The practitioners of rock art are definitely the ancestors of the San and sites abound in the whole of Southern Africa. LSA technology is characterised by microlithic scrapers and segments made from very fine-grained rock. Spear hunting continued, but LSA people also hunted small game with bows and poisoned arrows. Because of poor preservation, open sites become of less value compared to rock shelters.

5.4. The Iron Age Culture [ca. 2000 years BP]

5.4.1. *The Early Iron Age*

The Iron Age culture supplanted the Stone Age at more than 2000 years ago in a seemingly dramatic development marking the introduction of farming and the use of several metals and pottery. The Early Iron Age (EIA) appears to have been a gradual rather than sudden appearance of these technologies in South Africa, indeed in the whole region of Eastern and Southern Africa. The theory of rapid migration of speakers of Bantu languages is untenable given that these people are indigenous to the African continent anyway. It is likely that this process took thousands of years rather than the relatively short time span postulated in migration theories. In the southern part of the continent Iron Age people would have coexisted and intermingled with Khoi-San communities, and the hybrid languages spoken in this area is a footprint of such cultural encounters. Happy Rest on the northern foot of the Soutpansberg Mountains near Makhado (Louis Trichardt) is a type site of the Early Iron Age.

5.4.2. *The Later Iron Age*

The Later Iron Age in South Africa evolved from the Early Iron Age around the beginning of the second millennium AD. In historical terms the Later Iron Age is prelude to the emergence of historical Venda and Tsonga people who inhabited this area before the entry of Europeans in the 19th century.

Various LIA facies have been identified on the basis of pottery typology and radiocarbon dates.

The Moloko (Sotho-Tswana) Branch

- Icon facies, AD 1300 – 1500: This pottery is associated with the Sotho -Tswana people
- Eiland facies, AD 1000 – 1300
- Mapungubwe facies, AD 1250 – 1300
- Mutamba facies, AD 1250 – 1450
- Khami facies, AD 1430 – 1680
- Thavhatshena facies, AD 1450 – 1600
- Letaba facies, AD 1600 – present

Letaba pottery is associated with modern day Venda people and can be found in any Venda village.

5.5. Historical Period

Various factors contributed to cultural and settlement changes from the beginning of the 2nd millennium AD, more significantly surplus wealth accumulated through trade with the East Coast. From about 1300 AD there is evidence of Venda and Northern Sotho settlement in the area north of the Soutpansberg. They are recognised by a distinctive pottery tradition known after the farm Icon where the pottery was first found. After 1400 AD, there appears to have been increasing cultural exchanges across the Limpopo River introducing the Zimbabwe-Khami culture. Early Venda history is a subject of on-going debate and research (Nemaheni, pers. com).There are three chronological layers representing the Ngona, Lembethu / Mbedzi / Thavhatsindi and Singo groups, possibly all having associational links across the Limpopo River.

Dzata Ruins at Dzanani and form an important architectural continuum with Mapungubwe and Great Zimbabwe. It dates to the 18th and appears to be the youngest of the Zimbabwe type settlements.

A political unification project was started by the legendary Thohoyandou marks the rise of the Singo dynasty at about the end of the 17th Century. At the time it is thought that Venda was a loose set of disparate clanships collectively called the Ngona. Petty rivalry among these groups had stalled political development beyond

the order of clanship. Thohoyandou came with a new political vision introducing central government as the basis of statehood. In political theory this marks the beginning of complex state systems. Unification came at the price of war and subordination of the clans. One of the rewards of conquest was differentiation of the Singo as ruling elites.

Thohoyandou established a capital city at Dzata in the Nzhelele Valley, where splendid buildings of stonework were constructed to mark the centre of power. Adoption of this symbolism was demonstration that through cultural exchanges the Singo were abreast with trends across the Limpopo where stone building as an expression of political power was well-established for centuries. Dzata's history is partly steeped in archaeology; research and excavations have confirmed the Venda identity of the site and affinities with cultural traditions north of the Limpopo River. In a contemporary account of one black visitor to Dzata, Mahumane from Mozambique, in 1727/8 and Portuguese traders, the Venda controlled export trade to the Indian Ocean and the production of metals such as gold and copper.

Succession disputes followed the death of Thohoyandou around 1770 beginning with fallout between the heir-apparent Munzhedzi Mpofu and regent uncle, Tshisevhe. Soon after defeating the regent Munzhedzi was pitted against his brother Raluswielo (Tshivhase). Munzhedzi prevailed again. This short dark episode shaped the future course of Venda politics and history in a fundamental way. Firstly the apparent ideological divide between the houses of Munzhedzi (Ramabulana) and Tshivhase created two centres of powers and has been permanently sealed. The capital relocated from Dzata in the Nzhelele Valley to Tshirululuni south across the Soutpansberg Mountains, where later the Voortrekkers established Louis Trichardt.

5.6. Colonial occupation

Makhado succeeded his father Ramabulana in 1864 and as pressure from the Boers mounted he moved settlement up into the Soutpansberg Mountains. A political visionary Makhado mobilised Venda chiefs to stand together against the common adversary – the Boers. He mounted attacks against Boer settlements which earned him the nickname, Tshilwavhusiku-tsha-ha Ramabulana, roughly translated – night fighter (who surprises his enemy by night) son of Ramabulana. Sadly in September

1895 Makhado died of suspected poisoning reportedly a conspiracy hatched by the Afrikaner and enemies within.

One of his sons, Mpephu, was appointed successor and maintained the hard-line stance to resist occupation. In 1898 the South Africa Republic sent a commando to dislodge Mphephu from the mountain stronghold. This led to a scattering of the Venda with a large number of people crossing the Limpopo into Rhodesia. In 1899 land near Tshirululuni, where the king's cattle were penned, was pegged for the establishment of a town, Louis Trichardt. Mphephu and his followers were allowed to return from Rhodesia in 1903 but to be accommodated in the reserves below the mountains.

6. FINDINGS OF THE HERITAGE SURVEY

The preferred site for the proposed substation and 6 other locations along the preferred route of the proposed power line were examined by means of foot surveys. The following are the findings:

6.1. Preferred site for placement of the substation

The preferred site (P4) is located just outside Mamphuli Village to the south. It is open grassland with few mature trees including three sycamore fig trees (*Ficus sycamorus*). Ground visibility was moderate to poor due to grass cover. Nothing of archaeological or historical significance was found.

6.2. Grave / Monument of Maswanganyi

A grave and monument dedicated to Maswanganyi (Site MHL01) is located 200m to the northwest of the site (Figures 10-11). The plinth has a polished granite plaque bearing the inscriptions;

MASWANGANYI
SHIHHLOMULO, MAMPHURI.

There are engraved murals of a shield and spears, and below them praise words:

THE GREAT MUHLAVE WARRIOR
NHENHANKULU YA MUHLAVE
MULWI WA TINYIMPI

There are other words engraved on granite slabs glued in cement at the foot of the plinth.

Figure 10: Grave / memorial of Maswanganyi.

Figure 11: View of grave / memorial from the northern limits of the proposed substation site.

Recommendation

This heritage impact evaluation is respectful of the sanctity of graves / burial grounds / and sacred memorials. It is therefore recommended that if the substation will be placed at Site P4, a buffer of 200m be reserved between the memorial and the

northern perimeter of the substation. Furthermore it is recommended that a cluster of trees comprising sickle bush and a large mature sycamore fig tree (P1 - Lat: 23° 4'34.47"S, Long: 30°25'28.61"E) is preserved to provide a natural screen/buffer between the memorial and the proposed substation (Figure 12).

Figure 12: The cluster of trees include a large sycamore fig will provide a natural screen between the Maswanganyi Memorial and the proposed substation.

6.3. Proposed cemetery – Mamphuli Village

The site of a proposed village cemetery was pointed to us by Village Headman Nelwamondo as situated 100m southwest of the Maswanganyi Memorial (Figure 13) (P6 - Lat: 23° 4'35.83"S; Long: 30°25'23.56"E).

Figure 13: Site of proposed village cemetery.

Recommendation

It is recommended that a buffer distance of 200m be reserved between the proposed substation and proposed cemetery.

6.4. Preferred route of the proposed powerline

Six locations along the corridor of the proposed loop-in loop-out lines were surveyed intensively to provide sample data on the heritage sensitivity of the area. Lwenzhe Technical School (MHL02) located 1.2km west of the power line corridor is one of the rural schools whose students joined the 1976 protests. Significance in the struggle history is therefore noted although the proposed development does not have a direct impact (Figure 14). No other historically or archaeologically sensitive sites were found along the route of the power line.

Fig 14.Lwenzhe Technical School; students were involved in the historic protest in 1976.

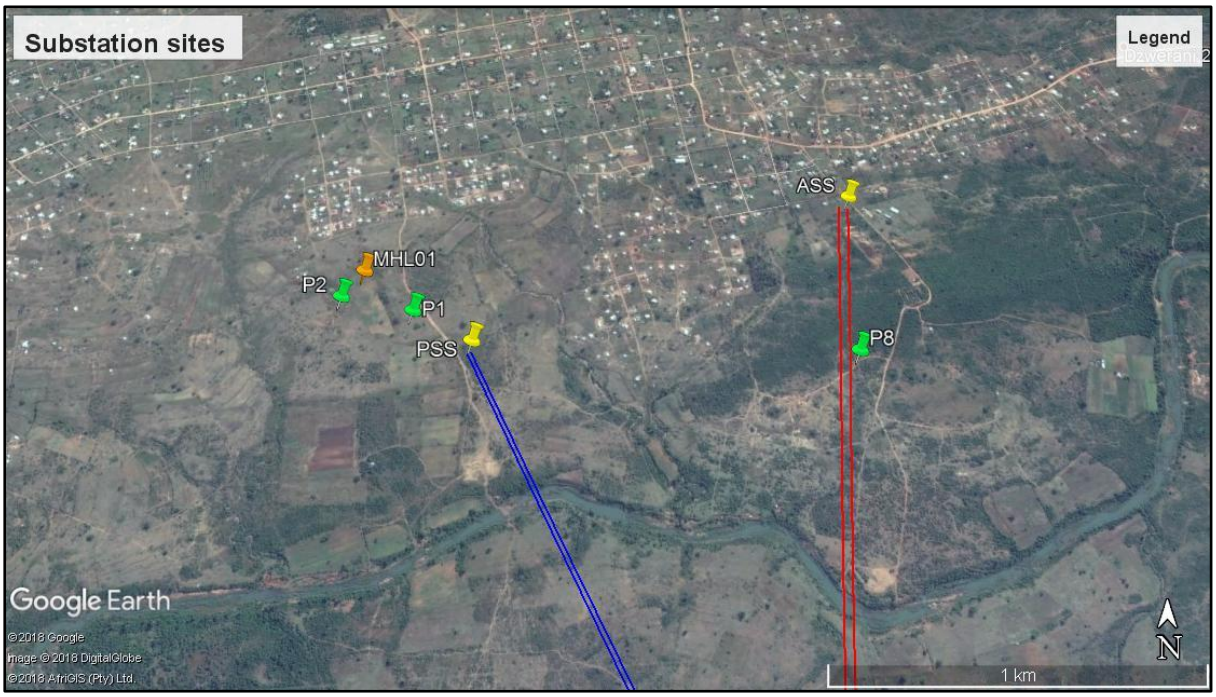


Figure15. Google-earth map showing the preferred location of the substation (PSS) and the alternative location (ASS).

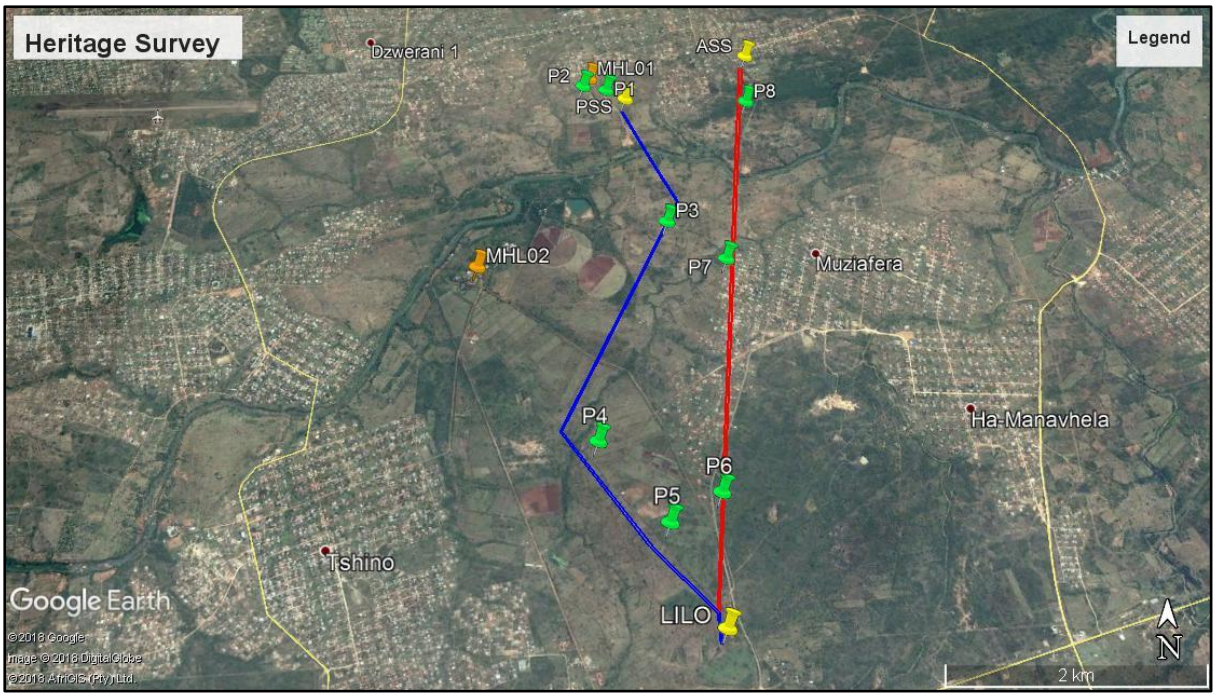


Fig 16. Google-earth map showing the preferred route of the power line (blue), and the alternative route of the power line (red) and points surveyed along the routes.

6.5. Proposed alternative placement of the substation

The proposed alternative site (ASS) is located just near Mahematshena School. It is open grassland with few mature trees. Ground visibility was moderate to poor due to grass cover. Nothing of archaeological or historical significance was found.

6.6. Proposed alternative route of the power line

Three locations along the corridor of the proposed loop-in loop-out lines were surveyed to provide sample data on the heritage sensitivity of the area. No historically or archaeologically sensitive sites were found along the route of the power line.

6.7. Significance ranking of findings

The significance ranking (with a colour scheme) refers to perceived impacts and risk of the proposed development. Appropriate interventions and mitigation strategies are also proposed.

	RANKING	SIGNIFICANCE	No of sites
1	High	National and Provincial heritage sites (Section 7 of NHRA). All burials including those protected under Section 36 of NHRA. A 200m wide buffer zone will be maintained between the Mswanganyi burial/memorial and the proposed substation.	1 burial ground
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. These may be protected at the recommendations of a heritage expert.	0
3	Medium B	Sites exhibiting archaeological and historical characteristics of the area, but do not warrant further action after they have been documented.	1 (school)
4	Low	Heritage sites which have been recorded, but considered of minor importance relative to the proposed development.	0
		TOTAL	**2**

6.8. Risk assessment of the findings

EVALUATION CRITERIA	RISK ASSESSMENT
Description of potential impact	Negative impacts range from partial to total destruction of surface and under-surface movable/immovable relics.
Nature of Impact	Negative impacts can both be direct or indirect.
Legal Requirements	Sections 34, 35, 36, 38 of National Heritage Resources Act No. 25 (1999)
Stage/Phase	Construction phase.
Nature of Impact	Negative, both direct & indirect impacts.
Extent of Impact	Site preparation, trenching and foundations have potential to damage heritage resources above and below the surface not seen during the survey
Duration of Impact	Any accidental destruction of surface or subsurface relics is not reversible, but can be mitigated.
Intensity	Uncertain.
Probability of occurrence	Medium.
Confidence of assessment	High.
Level of significance of impacts before mitigation	High.
Mitigation measures	A 200m wide buffer zone will be maintained between the Mswanganyi burial/memorial and the proposed substation. The same distance be reserved between the proposed substation and the proposed village cemetery. If heritage resources are discovered during the development phase, the heritage resources authorities must be informed and a heritage expert called to attend.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

7. RECOMMENDATIONS AND CONCLUSIONS

This impact study confirms the suitability of the preferred site for the placement of the substation as well as the preferred route for the power line provided that the following precautions are taken: A 200m wide buffer zone will be reserved between the Maswanganyi burial/memorial and the proposed substation. The same distance will be reserved between the proposed Mamphuli Village cemetery and the proposed substation.

The suitability of the preferred route for the power line is also confirmed since no historically or archaeologically sensitive sites were found along its corridor. If any other finds were to be made during the development phase the procedure is to approach the relevant heritage authorities (SAHRA and/or the Provincial Heritage Resources Authority) and a heritage expert will be called to attend.

8. CATALOGUE OF HERITAGE SITES

MHL01	COORDINATES	23° 4'32.90"S	30°25'25.80"E

OBSERVATIONS: A grave and monument dedicated to Maswanganyi is located 200m to the northwest of the site (Fig 10). The plinth has a polished granite plaque bearing the inscriptions;

MASWANGANYI

SHIHHLOMULO, MAMPHURI.

HERITAGE SIGNIFICANCE	Graves/burial ground are sacred and must be protected.
POTENTIAL IMPACTS & PROPOSED MITIGATION	200m buffer distance between monument and substation recommended.

MHL02	COORDINATES	23° 5'41.77"S	30°24'50.93"E
 OBSERVATIONS: Lwenzhe Technical School. Students were involved in the 1976 protests.[3]			
HERITAGE SIGNIFICANCE	Liberation struggle.		
POTENTIAL IMPACTS & PROPOSED MITIGATION	No impact. School located 1.3km to the west of the proposed powerline route.		

[3] Aluka. Report of the Commission of Inquiry into the Riots at Soweto and Elsewhere from the 16th of June 1976 to the 28th of February 1977. At: *http://www.aluka.org/action/showMetadata?doi=10.5555/AL.SFF.DOCUMENT.COMENQP2B10003*

9. CATALOGUE OF SURVEYED AREAS – NO HERITAGE RESOURCES FOUND

P1	COORDINATES	23° 4'37.54"S	30°25'31.54"E

OBSERVATIONS: Proposed Mamphuli substation. Open grassland. Ground dipping gently south to the Levuvhu River. 3 large sycamore fig trees. Ground visibility moderate to poor.

HERITAGE SIGNIFICANCE	No heritage found
POTENTIAL IMPACTS & PROPOSED MITIGATION	-

P2	COORDINATES	23° 4'35.83"S	30°25'23.56"E

OBSERVATIONS: Site of proposed village cemetery. Field and sparse woodland with sickle bush and few mature trees *incl. Diospyros mespilliformis.*

HERITAGE SIGNIFICANCE	No heritage resources found.
POTENTIAL IMPACTS & PROPOSED MITIGATION	Reserve 200m buffer to the western perimeter of the proposed substation.

P3	COORDINATES	23° 5'26.44"S	30°25'51.28"E

OBSERVATIONS: Proposed power line route. Open area, grassland. Ground visibility moderate to poor.

HERITAGE SIGNIFICANCE	No heritage resources found.
POTENTIAL IMPACTS & PROPOSED MITIGATION	-

P4	COORDINATES	23° 6'35.83"S	30°25'29.36"E

OBSERVATIONS: Proposed power line route. On the edge of a stream, thick grass cover and bushes. Red-brown loamy soils. Ground visibility poor.

HERITAGE SIGNIFICANCE	No heritage resources found.
POTENTIAL IMPACTS & PROPOSED MITIGATION	-

P5	COORDINATES	23° 6'58.27"S	30°25'49.74"E

OBSERVATIONS: Proposed power line route. Open flat area, grassland with scattered sickle bush. Ground visibility poor.

HERITAGE SIGNIFICANCE	No heritage resources found.
POTENTIAL IMPACTS & PROPOSED MITIGATION	-

P6	COORDINATES	23° 7'24.91"S	30°26'8.71"E

OBSERVATIONS: Alternative power line route. Scattered bushes, tall grass. Ground visibility poor.

HERITAGE SIGNIFICANCE	No heritage resources found.
POTENTIAL IMPACTS & PROPOSED MITIGATION	-

P7	COORDINATES	23° 6'7.83"S	30°25'31.63"E

OBSERVATIONS: Alternative power line route. Ground visibility poor off the road.

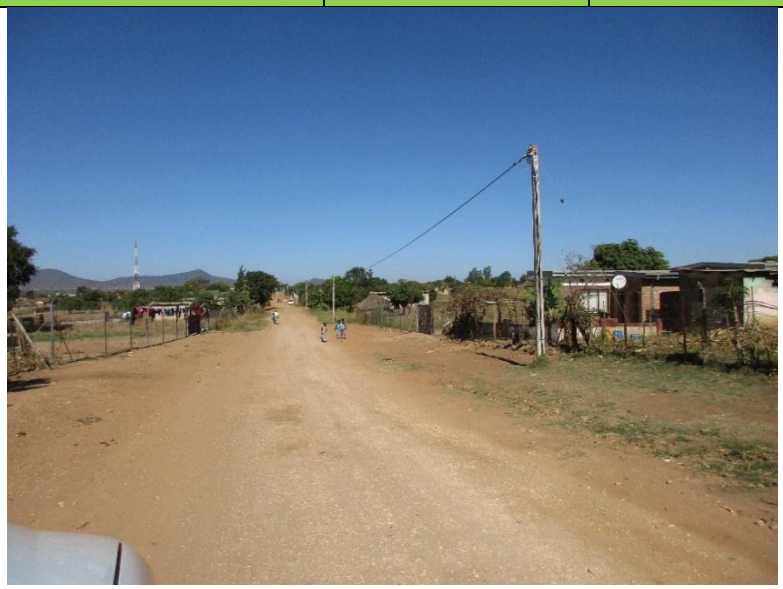
HERITAGE SIGNIFICANCE	No heritage resources found.
POTENTIAL IMPACTS & PROPOSED MITIGATION	-.

P8	COORDINATES	23° 4'25.51"S	30°26'20.03"E

OBSERVATIONS: View towards the alternative substation site. Grassland and scattered trees. Ground visibility moderate to poor.

HERITAGE SIGNIFICANCE	No heritage resources found.
POTENTIAL IMPACTS & PROPOSED MITIGATION	

P9	COORDINATES	23° 5'41.77"S	30°24'50.93"E



OBSERVATIONS: Tshitungulwane Village, typical village street view.

HERITAGE SIGNIFICANCE	No officially recognised heritage significance.
POTENTIAL IMPACTS & PROPOSED MITIGATION	None.

P10	COORDINATES	23° 5'41.77"S	30°24'50.93"E

OBSERVATIONS: Grassland with sickle bushes. Ground visibility poor.

HERITAGE SIGNIFICANCE	No heritage resources found.
POTENTIAL IMPACTS & PROPOSED MITIGATION	-

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