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HERITAGE IMPACT ASSESSMENT (HIA) AND PALEONTOLOGICAL SURVEY FOR THE PROPOSED 132 KV LINE FROM RAMPHERI TO SYFERKUIL, CONSTRUCTION OF SUBSTATIONS AND CUSTOMER NETWORK CENTRES AT RAMPHERI AND SYFERKUIL, AND UPGRADE OF A 33KV CHICKADEE THABAMOOPO - SYFERKUIL LINE TO A 132 KV KINGBIRD LINE

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CLIENT: Eskom Holding (SOC) Limited Limpopo Operating Unit (LOU)

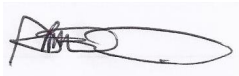
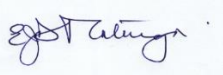
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DOCUMENT CONTROL

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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).



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ABBREVIATIONS:

CRM	Cultural Resources Management
CMP	Conservation Management Plan
DEA	Department of Environmental Affairs
EIA	Environmental Impact Assessment
EIA	Early Iron Age Culture
ESA	Early Stone Age
HIA	Heritage Impact Assessment
LSA	Late Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency
OUV	Outstanding Universal Value
UNESCO	United Nations Educational and Scientific Organisation

DEFINITIONS

Archaeological material: remains resulting from human activities left as evidence of their presence which 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: Any movable object that has been used, modified or manufactured by humans.

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

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

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeontological sites, historic and prehistoric 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 includes intangible resources such religion practices, ritual ceremonies, oral histories, memories, indigenous knowledge.

Cultural landscape: a stretch of land that reflects “the combined works of nature and man” and demonstrates “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 internal and external”.¹

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management, and sustainable utilization for present and future generations.

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

Conservation: means all the processes of managing a place to retain its cultural significance.

Early Iron Age: refers to remains dating to the first millennium AD associated with the introduction of metallurgy and agriculture.

¹ This definition is taken from current terminology as listed on the World Heritage Convention website, URL: <http://whc.unesco.org/en/culturallandscape/#1> accessed 17 March 2016.

Early Stone Age: a long and broad period of stone tool cultures with complex chronologies ranging from around 3 million years ago up to the transition to the Middle Stone Age situated at ca. 250 000 years ago.

Excavation: a method in which archaeological materials are extracted from the ground, which involves systematic recovery of archaeological remains and their context by removing soil and any other material covering them.

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

Historical: means belonging to the past, but often specifically the more recent past, and often used to speak about the period beginning with the appearance of written texts.

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

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

Late Iron Age: The period from the beginning of the 2nd millennium AD marked by the emergence of complex state society and long-distance trade contacts, which in the Mapungubwe area (and elsewhere) overlaps with the latter part of the Late Stone Age.

Late Stone Age: The period from \pm 30 000 years ago up until the introduction metals and farming technology around 2000 years ago, but overlapping with the Iron Age in many areas up until the historical period.

Middle Stone Age: a period of stone tool cultures with complex chronologies marked by a shift towards lighter, more mobile toolkit, following the Early Stone Age and preceding the Late Stone Age; the transition from the Early Stone Age is a long process rather than a specific event, and the Middle Stone Age is considered to have begun around 250 000 years ago, seeing the emergence of anatomically modern humans from about 150 000 years ago, and lasting until around 30 000 years ago.

Monuments: architectural works, buildings, sites, sculpture, elements, structures, inscriptions or cave dwellings of an archaeological nature, 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 the protecting and maintaining of the fabric of a place in its existing state and retarding deterioration or change, and may include stabilization where necessary.

Rock Art: various patterned practices of placing markings on rock surfaces, ranging in Southern Africa from engravings to finger paintings to brush-painted imagery, and from figurative to abstract.

Sherds: ceramic fragments.

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.

EXECUTIVE SUMMARY

This Heritage Impact Assessment (HIA) report draws attention to potential adverse and positive effects of the proposed construction of a 132 KV power line from Rampheri to Syferkuil, Capricorn District, Limpopo Province.

The report is based on a scoping survey conducted in May and June 2016 and provide a framework for informed decisions on interventions for the sustainable management of heritage resources if they occur in the corridor of the proposed power line.

Heritage Impact Assessment is a statutory requirement in a project of this nature. The National Heritage Resources Act (No 25: 1999) applies, the relevant regulations of which are Section 38 (Heritage Impact Assessment process), Section 34 (Buildings and Structures older than 60 years) Section 35 (Archaeological and Palaentological sites) and Section 36 (Graves and Burial Grounds).

A ranking system uses a four-colour code to highlight sites that need attention before or during the construction phase of the project.

	Ranking	Explanation	Colour Code
1	Very high	Grade 1 Sites (Section 7 of NHRA), graves and burial grounds (Section 36 of NHRA). They must be protected. Stakeholder consultations required before graves can be relocated or other mitigation measures considered.	Deep red
2	High	Grade 2 sites (Section 7 of NHRA), Historic Buildings and substantial archaeological deposits. They require mitigation.	Red
3	Medium	Colony of aloes	Green
4	Low	Heritage sites deemed of less importance.	Grey

The following table is to show the status of project area in terms of a typological checklist of heritage resources usually anticipated.

	Heritage Typology	Quantity
1	Burial grounds/cemeteries	1
2	Cultural landscapes	1
3	Stone Age Archaeological Sites	0

4	Iron Age Archaeological Sites	0
5	Historic Buildings	0
	TOTAL NUMBER OF SITES	2

SUMMARY OF FINDINGS

Burial Ground at Mothapo

Burial grounds are sacred reservations. We note that **Alternative Route 1** passes immediately north of the cemetery at Mothapo through a gap with hills. This makes this route less suitable for reasons of proximity to the graves if other less difficult options exist.

Protection of Aloes

A colony of giant aloes identified as *Aloe excelsa* is located in the path of the **Preferred Route**. Aloes have proven herbal properties and they are applied for a wide range of human ailments. They are also used for treating sick chickens. As such they are culturally important and must be protected. Erecting overhead power lines over a colony of aloes cannot be regarded as inappropriate provided that the individual plants affected by pylon footings are transplanted.

Confirmation of the Preferred Route

This scoping survey confirms suitability of the **Preferred Route** subject to precautions taken about the aloes. If heritage resources were to be found during the construction phase, it is standard procedure that the relevant heritage authorities, SAHRA and LIHRA, will be notified immediately and a heritage expert called to attend.

Recommendations and Conclusions

- (i) **Alternative Route 1** passes close to the cemetery at Mothapo where a buffer of at least 100m would be required. This makes it less suitable if other less difficult options exist.

(ii) The colony of giant aloes (*Aloe excelsa*) on the **Preferred Route** must be protected. However erecting overhead power lines over a colony of aloes cannot be regarded as inappropriate; individual plants affected by pylon footings should be transplanted.

(iii) This study confirms suitability of the **Preferred Route** subject to precautions taken to protect aloe colonies. As a standard requirement if heritage resources were to be found during the construction phase, the relevant heritage authorities i.e. SAHRA and/or LIHRA, will be notified immediately and a heritage expert called to attend.

(iv) No historically significant sites that are protected in terms of the National Heritage Resources Act 25 of 1999 will be affected by the proposed project. In conclusion we recommend that if unmarked human burials are discovered during the powerline development, they should be relocated to a formal graveyard. The removal must be conducted with due respect for the customs and beliefs of the affected community/ relatives.

1. DESCRIPTION OF PROJECT

Eskom intends to construct a 132kV power line from Syferkuil in Mankweng to Rampheri. The schedule of works include:

- Upgrading the Syferkuil substation situated in Mankweng and adding a Customer Network Centre
- Construction of overhead 132kv power line to Rampheri substation a distance of approximately 20km
- Upgrading a switching station 2km distance from Syferkuil to increase domestic supply in Mankweng
- Upgrading a 2km 33kV line from Chikadee Thabamopo to Syferkuil line to a Kingbird line (light pink)
- Construction of substation and Customer Network Centre at Rampheri

Mankweng is situated on the R71 road, 25km distance from Polokwane. It is a rural area predominantly residential and serving as a satellite of Polokwane City (Fig 1). The University of Limpopo's main campus at Turfloop gives Mankweng spotlight as an educational centre. Education is one of the major activities and stimulus for socio-economic growth. Power supply upgrades and expansion are necessary to meet increasing demand. Rural electrification is a high priority of Government to narrow socio-economic differentials between urban and rural areas; it is an important public service performance indicator.

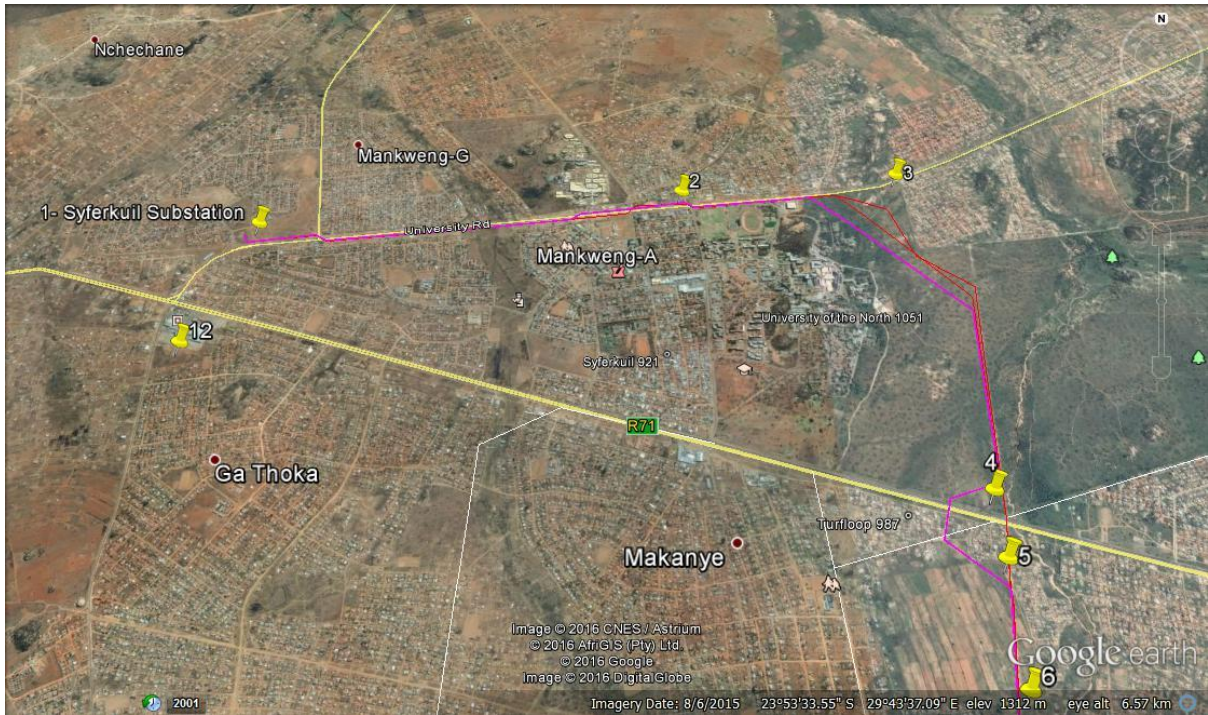


Fig 1. Google-Earth aerial view of Mankweng

2. LEGAL FRAMEWORK

2.1. Heritage Impact Assessments

The nature of physical works outlined above triggers Section 38 of the National Heritage Resources Act (25/1999); the relevant sections are stated below:

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 50 m in length;*
- (c) any development or other activity which will change the character of a site—*
 - (i) exceeding 5 000 m² 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 the regulations by SAHRA or a provincial heritage resources authority,*

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Noting that Syferkuil substation is located in a built up area and that the proposed power line will be laid through the township, Section 34 applies, which provides provisional protection for buildings and structures more than 60 years old:

(1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

2.2. Protection of Archaeological Sites

Section 35 (4) of the 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.*

2.3. 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. Within this framework cautious approaches are considered including managed exhumations and re-interment to pave way for development. International ethical standards favour this position and recommend decisions informed by consultation with communities who by association might have strong feelings for protection *in situ* and may argue that a development project is better moved to alternative site:

- (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) (a) 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.*

Section 36(6) implies that all kinds of graves found during the course of development must be reported and investigated:

- (6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible*

heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority—

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

3. METHODOLOGY

3.1. Literature Review

A general literature overview was carried out to gain understanding of a number of key issues, including:

- (a) The legal framework for HIAs and grading of sites in South Africa;
- (b) Understanding the history of Mankweng and Rampheri within the broad sweep of South African history;
- (c) Researching SAHRA archives in order to flag known archaeological and heritage sites in the area of proposed development.

3.2. Fieldwork

A scoping survey was conducted to assess the possibility of finding heritage resources in the area and to determine whether or not the area merits further examination before construction commences. Two field visits were made in May and June 2016. Notably, during the first visit several different specialists participated as a multidisciplinary team, which provided a vital opportunity for sharing ideas and opinions.

Conventional field methods of prospecting for heritage and archaeological sites were employed – field-walking – combined with windscreen surveys. A walking survey simply involves “going out on foot” and examining the ground surface in order to observe, record and photograph features and activity areas.² Ground visibility was fairly good with moderate grass cover; it was good along un-surfaced farm access roads.

In any survey in which a large area is to be covered, it is not possible to examine every inch of the ground. Samples are collected which can be used to form a reliable picture of the entire area. A random sampling strategy was used, varied with picking specific topographical features and vegetation patterns. Thus along the corridor of the proposed power line, the intensive ground surveys were conducted at least at 10 points each covering an area of 50m radius.

² David, A. 2006: Archaeological Prospection. In Balme, J. & A. Paterson, 2006. *Archaeology in Practice*. Blackwell Victoria: Publishing p.9.

3.3. Documentation

A template was used to record field observations or to inventory sites of heritage value if they were found.

3.4. Risk Assessment

The risk assessment is a measure of heritage significance in relationship to perceived impacts of the proposed development. Sites are not being ranked *per se* as provided under Section 7 of NHRA. The following four colour-coded categories determine the nature of intervention and mitigation.

	Ranking	Explanation	Colour Code
1	Very high	Grade 1 Sites (Section 7 of NHRA), graves and burial grounds (Section 36 of NHRA). They must be protected. Stakeholder consultations required before graves can be relocated or other mitigation measures considered.	Deep red
2	High	Grade 2 sites (Section 7 of NHRA), Historic Buildings and substantial archaeological deposits. They require mitigation.	Red
3	Medium	Colony of aloes	Green
4	Low	Heritage sites deemed of less importance.	Grey

4. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

The cultural sequence in South Africa begins with the appearance of Hominids and the Stone Age culture and spans more than 4 million years.

4.1. Appearance of Hominids

Hominid refers to primate species which are the immediate ancestors of man. They were proto-human which implies a primitive status. Hominid sites and their fossil remains are largely confined to dolomite caves on the highveld in Gauteng, Limpopo and Northwest Provinces.³

The Makapan's Mountain ranges which lie 50km south of Polokwane is home to one of the better known hominid sites, the Makapan's Valley, featuring the genus *Australopithecus africanus* and preserved in limestone geology (Fig 2). This site is inscribed on the UNESCO World Heritage list as part of a serial nomination with the Cradle of Human Kind and Taung. Makapan proves a long storyline of human evolution in the area beginning 4 million years ago.

³ Deacon, J. and N. Lancaster. 1986. *Later Quaternary Palaeo-environments of Southern Africa*. Oxford: Oxford University Press.



Fig 2. Historical Cave, Makapan's Valley (Photo, M.A Silidi, SAHRA 2002)

4.2. The Stone Age

The Stone Age dates back at least 3 million years and marks a more diagnostic appearance of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages. Stone and bone implements manifest the technology of the period and fall into distinct typologies indicating chronological development. Material evidence of human activities has been found in caves, rock-shelters and riverside sites, and very rarely seen in open country.⁴ The Late Stone Age is also associated with the execution of paintings mostly in rock shelters and caves.

4.2.1. *The Early Stone Age [1.4 million – 100 000 yrs BP]*

The Early Stone Age marks the earliest appearance of stone artefacts about 3 million years ago. Such tools bore a consistent shape such as the pear-shaped hand-axe, cleavers and core tools (Deacon & Deacon, 1999). These tools, which have been called Acheulian after a site in France, were probably used to butcher large animals

⁴ <http://archaeology.about/od/bterms/g/bordercave.htm>

such as elephants, rhinoceros and hippopotamus. Acheulian 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 meaning that they had not evolved to the present human form.

4.2.2. Middle Stone Age (MSA) [200 000 yrs – 30 000 yrs BP]

The Middle Stone Age (MSA), appeared 200 000 years ago with 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.⁵ The Cave of Hearths, Hyena Mandible and Rainbow Cave in the Makapans Mountains have a remarkable Early Stone Age record.

4.2.3. 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 refers to the modern physical form and thinking capabilities. Several behavioural traits are exhibited, such as rock art and purposeful burials with ornaments, became a regular practice. The practitioners of the 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.

4.3. The Early Iron Age [ca. 2000 years BP]

The Iron Age culture supplanted the Stone Age at least 2000 years ago. It is associated with the introduction of farming and the use of several metals and pottery.

⁵ Deacon, J & H. Deacon. 1999. *Human Beginnings in South Africa*. Cape Town: David Philip.

Archaeologists postulated a sudden synchronized arrival of these technologies in South Africa, indeed in the whole region of Eastern and Southern Africa, which was thought to represent a fairly rapid movement of people down the continent.⁶ Migration of Bantu speakers as agency for the spread of the Iron Age culture has become popular theory. Pottery styles characterize and identify archaeological traditions within the broad Iron-using culture and to further isolate geographical variations, which have been called *facies*.⁷ A more plausible theory is that since the Bantu are indigenous to the continent in any case, this was not a migration in the strict sense of the word, but rather must be seen as settlement expansion taking place over several millennia.

According to Huffman (2007) there were two streams of Early Iron Age (EIA) expansion converging in South Africa, one originating in eastern Africa which has been called the *Urewe-Kwale Tradition* (or the eastern stream) and another from the west, spreading through Zambia and Angola, which he termed the *Kalundu Tradition* (or western stream) (Fig 3).

In the area under study, *Urewe Tradition* developed into:

- Matola, also called Silver Leaves (Fig 4)
- Mzonjani facies (Broederstroom) AD 450 – 750)

Evidence of Early Iron Age settlement has been obtained at the Ficus Cave (550 AD), in the Makapan's Mountains. Occupation continued into the Later Iron Age (1560 AD) on the mountain slopes as evidenced by terracing and occupation debris- potsherds, grindstones, hammer stones and relics of iron smelting operations, including ore, slag and fragments of *tuyeres* (blowpipes).

⁶ Phillipson, D. W. 2005. *African Archaeology*. Cambridge: University of Cambridge Press: 249.

⁷ Evers, T. M. 1988. *Recognition of Groups in the Iron Age of Southern Africa*. Unpublished PhD Thesis, University of Witwatersrand. Huffman 2007. *A Handbook on the Iron Age*. Scottsville: UKZN Press

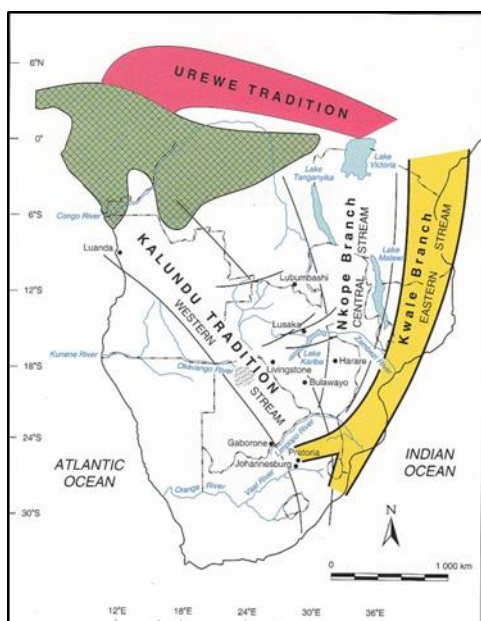


Fig 3. Spread of the Urewe Tradition in Southern Africa (Huffman 2007: 122)

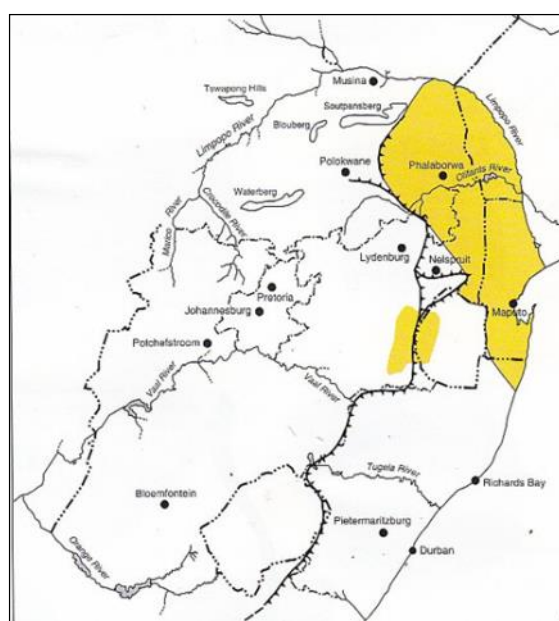


Fig 4. Matola (Silver Leaves) Facies of the Urewe-Kwale Tradition (Huffman 2007: 123)

4.4. The Later Iron Age and the Northern Sotho/Tswana

The Later Iron Age in South Africa evolved from the Early Iron Age around the beginning of the second millennium AD. In the migration theory two cultural streams of the EIA are postulated to converge in this area. Subsequently, the Western stream appears to have fizzled out and the Eland-Iron facies⁸ of the Eastern Stream predominated. This evolved into the Madikwe facies around the 16th century (Huffman 2007: 183, 199, 227) (Figs 5-6).

In historical terms the archaeological reconstruction which has been outlined above is prelude to the emergence of historical Northern Sotho and Tswana groups in the area.

⁸ A facies is a geographical area presenting a particular pottery tradition.

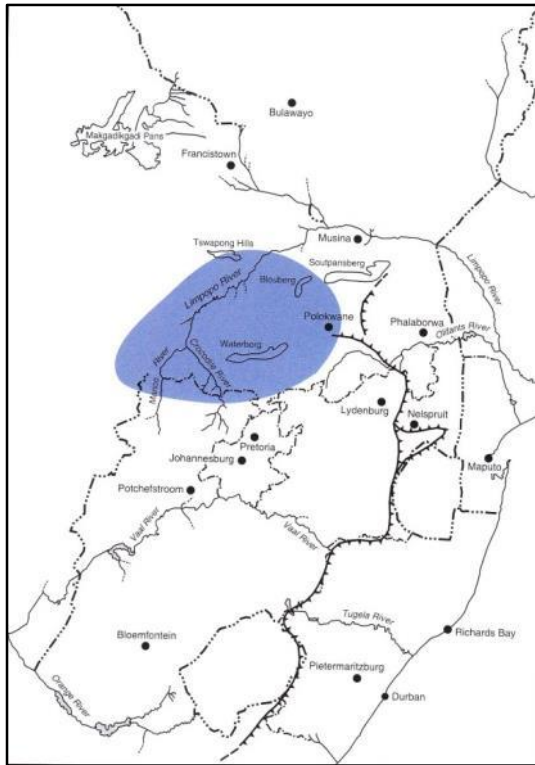


Fig 5. Eiland Facies (Western Stream) 1000-1300 AD (Huffman 2007: 227)

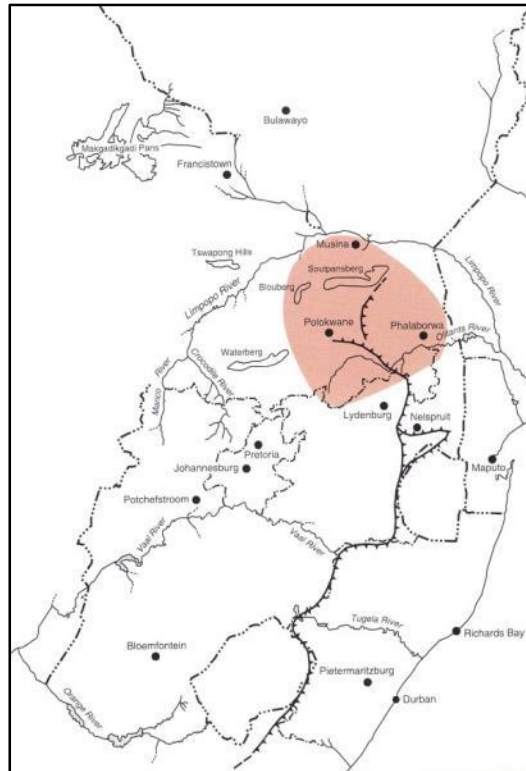


Fig 6. Moloko-Ikon Facies (Eastern Stream) 1300-1500 AD (Huffman 2007: 183)

4.5. Northern Sotho

There are several groups in Limpopo collectively referred to as Northern Sotho. Among them are the Dikgale settled around Mankweng, who trace origin in the Bakone people from Matlala in the northeast of their present homeland, with a split and movement having occurred in the 17th century. Their first settlement was at Bakone Malapa. The settlement subsequently moved to Mankweng. There were further political and social dynamics which necessitated movement to Mapagatse with Kgosi Marema at the helm. From Mapagatse the headquarters was moved to Ntsima. (MCPM 2014: Survey for the Identification and Profiling of Archaeological and Heritage Resources in the Dikgale Traditional Authority Area, Polokwane Municipality)

4.6. Nguni Settlement in the 17th/18 Centuries

Historical and oral records attest to migration streams of Nguni speakers into the area from the 17th century. These are the ancestors of the Northern Ndebele. Significantly, later movements were triggered by Mfecane upheavals with the epicentre in Zululand

in the 19th century. Oral legends profile Langa and Musi as founders of the Northern and Southern Ndebele respectively (Huffman 2007: 439-441).

4.7. The European Contact Period

The northward expansion of Europeans, so called the Great Trek, is one of the major epochs in South African history. The new arrivals sparked conflicts with African polities. In one of these encounters on the foot of the Waterberg Mountains, King Mokopane of the Kekana routed an Afrikaner party under the leadership of Hermanus Pretorius in September 1854, an incident which is commemorated in Mooddrift, meaning Murder Ford, a monument erected at the site 6km south of Mokopane. The site has Provincial heritage status.

Between 25 October and 21 November of the same year, the Afrikaners laid a vengeful siege against Mokopane, who had fortified a cave on the northern face of the Makapan's Mountains. At the site now called Historic Cave or Makapansgat, the Ndebele died in large numbers as a result of the siege. The site is a National Monument.

In the early stages of the siege of Makapans one of the Afrikaner commando leaders Piet Potgieter was killed. His body was only retrieved later by Paul Kruger (later President of the Transvaal Republic).⁹ In his honour the town of Potgietersrus was named, located 15km from Makapans Valley.

In another conflict in the area two decades later, the British attacked the Pedi capital Tjate east of Dikgale and took the king Sekhukhune prisoner to Pretoria. He was later released by the Boers in 1881 when they regained sovereignty from the British. Sekhukhune was assassinated in 1882 in a plot masterminded by his rival Mampuru.

4.8. African Independent Churches: Zion City at Mount Moria

Mankweng is 7km by road west of the Zion City at Moria, the largest Independent church in South Africa, indeed in the whole of Southern Africa (Fig 7). The Church is one of the sprouting African Independent Churches which draw from the charisma of

⁹ <http://www.sahistory.org.za/dated-event/makapane039s-cave-under-siege>

their founders. It dates back to 1910, splitting from the Scottish Free Church under the leadership of Engenas Barnabas Lekganyane, born at Mamabolo Village near Mankweng.¹⁰ The church is tucked on the eastern slope of a hill; its symbol the Star of David erected in white painted stones visible a long distance from the site. African Independent churches chart a syncretic ideology of Christian precepts and African cultural traditions. In this respect ZCC is quite typical, characterised by the emphasis it places on faith healing, purification rites, dancing, night communion, river baptism, the holy spirit, taboos and prophesying.

ZCC split into two congregations. This notwithstanding, they work closely together with a total membership of ca8 million in a nation of 55 million, mostly from South Africa, but also from neighbouring countries. The biennial pilgrimages in April and September draw congregants from all major cities of South Africa, which has turned Moria into an important heritage site.¹¹ The visit to Moria on 15 April 1994 by President-to-be Mr. Nelson Mandela, F. W. De Klerk, Mangosuthu Buthelezi and Pik Botha is remembered as one of the epic pilgrimages.¹² Since then other leaders including the former President Thabo Mbeki, the sitting President, Mr. Jacob Zuma have also visited the famous shrine.

The above sets the archaeological and historical context for studying the archaeology and heritage of the project area.

¹⁰ <http://prominentpeople.co.za/lekganyane.aspx>

¹¹ <http://www.sa-venues.com/attractions/limpopo/zion-city.htm>

¹² SABC News Friday 3 April 2015 16:23



Fig 7. View of Moria from the east.

The above sets the archaeological and historical context for studying the archaeology and heritage of the project area.

5. FIELD OBSERVATIONS

Twelve positions along the proposed power line route were surveyed in detail (Fig 8). Most of them were chosen at random but specific topographical features and vegetation patterns.



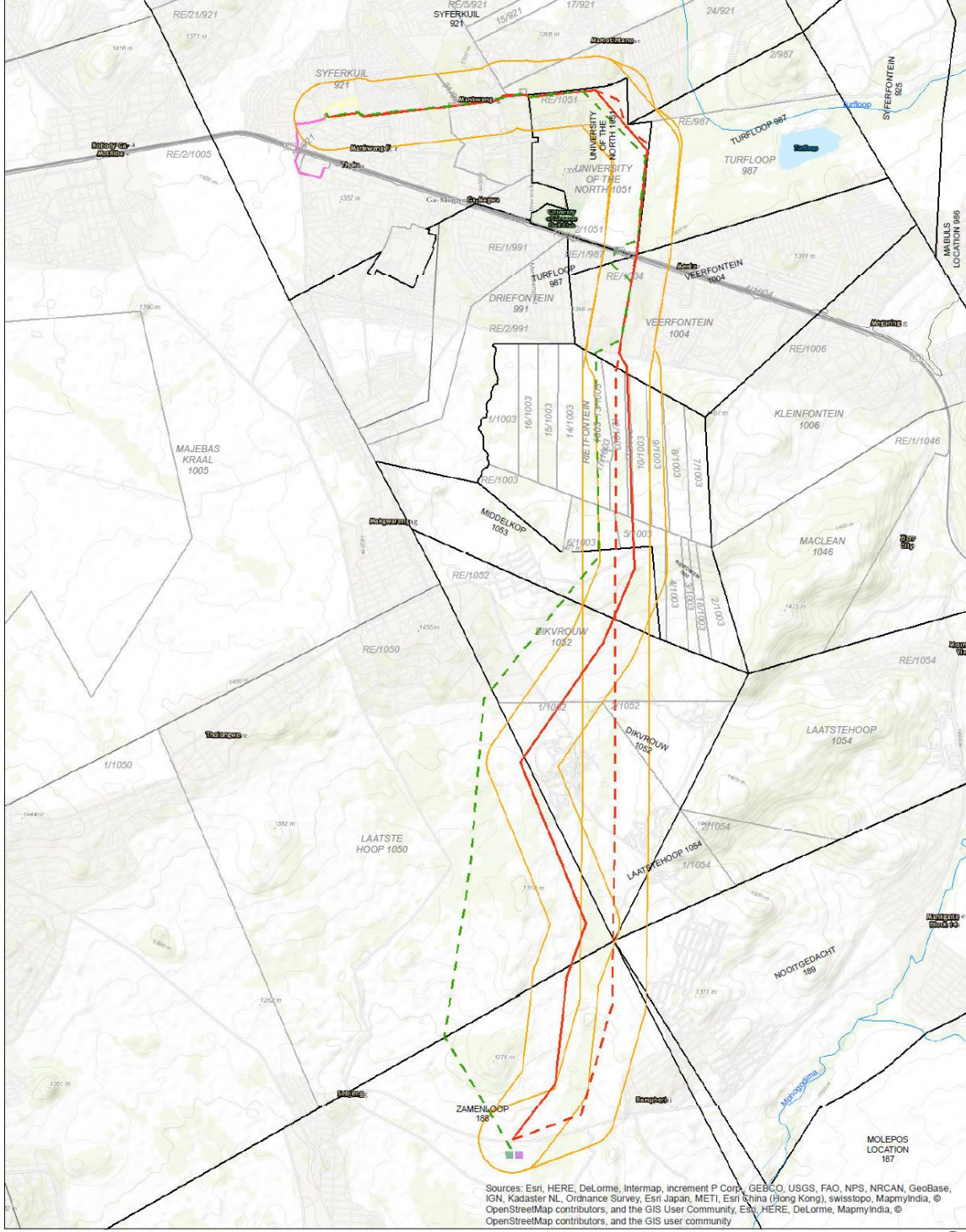
Fig 8. Google-Earth map shows locations where intensive ground surveys were conducted in relationship to the power line route options.



Syferkuil-Rampheri Project - Locality Map



A 132kV Powerline of approximately 22km from the existing Rampheri Substation to the proposed Syferkuil Substation; a new Rampheri CNC, a new Syferkuil CNC, Upgrade of the 2km 33kV Thabamooop-Syferkuil line; and Decommissioning of the existing Syferkuil Substation





Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

	Preferred (Less Properties)		1km corridor		Rivers		Farms
	Alternative 1		Upgrade of Thabamooop Syferkuil Line		Farm portions		
	Alternative 2		Syferkuil Erf1254				



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Fig 9. Topographical map shows preferred route in solid red and alternatives.

1	Syferkuil Substation	
<p>POSITION</p> <p>23°52'59.98"S</p> <p>29°42'13.20"E</p>		
<p>OBSERVATIONS</p> <p>Situated at the corner of University Road and Magistrate Road, the footprint of the substation will be extended on the east side where there is an open ground crisscrossed by pedestrian paths. The site is in the middle of residential area.</p> <p>Ground visibility good.</p>		
<p>HERITAGE STATUS</p>	<p>Nothing of heritage value found</p>	

2

Mankweng Switching Station

POSITION

23°52'50.61"S

29°43'54.46"E



OBSERVATIONS

The existing switching station is on the northern servitude of University Road ca600m distance from entrance to the university. The northern servitude is much broader than the southern servitude. This is built-up residential landscape less than 60 years old.

Ground visibility good.

HERITAGE STATUS Nothing of heritage value found.

3 Turfloop Nature Reserve

POSITION
23°52'45.62"S
29°44'47.52"E



OBSERVATIONS

The northern perimeter of Turfloop Nature Reserve at the northeast corner. Vegetation on the edge of the University Road is degraded.


In the reserve vegetation is predominantly acacia with medium grass cover. Ground visibility moderate.

HERITAGE STATUS Nothing of heritage value found.


4 Turfloop Nature Reserve South


POSITION
23°54'5.79"S
29°44'53.11"E



	
<p>OBSERVATIONS</p> <p>The southern perimeter of Turfloop Nature Reserve at the northeast corner. Bounded to the south by the R71. Sparse vegetation dominated by Acacia. In the reserve acacia predominant with medium grass cover. Ground visibility moderate.</p>	
<p>HERITAGE STATUS</p>	<p>Nothing of heritage value found</p>

5	Makanye	
<p>POSITION</p> <p>23°54'19.33"S</p> <p>29°44'52.44"E</p>		

		
<p>OBSERVATIONS</p> <p>A passage offsetting from the R71 passing between houses. Line of houses continues on the east side with an open land to the west - degraded acacia.</p> <p>Ground visibility good.</p>		
<p>HERITAGE STATUS</p>	<p>Nothing of heritage value found</p>	

6	Mothapo Hill	
<p>POSITION</p> <p>23°54'41.09"S</p> <p>29°44'52.61"E</p>		
<p>OBSERVATIONS</p> <p>Open veld with degraded vegetation. A cluster of hills can be seen 500m distance to the southwest. Houses are located to the east.</p> <p>Ground visibility good.</p>		
<p>HERITAGE</p>	<p>Nothing of heritage value found.</p>	

7	Mothapo Cemetery
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POSITION
 23°54'56.78"S
 29°44'46.53"E



OBSERVATIONS
 Position surveyed is 200m east of Mothapo Cemetery GPS reading 23°54'56.46"S, 29°44'38.73"E. A fenced area with degraded trees and moderate to dense grass cover. A scatter of aloes (*Aloe excelsa*).

HERITAGE STATUS	Aloes have cultural and medicinal value. Burial grounds are sacred reservations
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MITITIGATION	<p>Aloes must be protected where they may be affected by excavation for installation of pylon footings; or they must be transplanted. If they exist in large colonies, some may be destroyed subject to the discretion of the Heritage Authority.</p> <p>The cemetery is 200m north of the preferred route. This is considered to be safe buffer, while Alternative 1 would pass close by between it and hills to the north.</p>
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8 Mothapo Aloe field	
POSITION 23°55'0.45"S 29°44'44.30"E	
OBSERVATIONS Vegetated area with a mix of acacia, <i>Euphorbia ingens</i> and a significant population of aloes.	
HERITAGE STATUS	Aloes have cultural and medicinal value
MITIGATION	Aloes must be protected where they may be affected by excavation for pylon footings, or they must be transplanted. If they exist in a large colony some may be destroyed subject to the discretion of the Heritage Authority

9 Magokobo	
POSITION 23°57'45.68"S 29°45'0.90"E	



OBSERVATIONS

A stream running south, extensive sand bed and medium woodland with acacia, other species and isolated aloes.

Ground visibility moderate

HERITAGE STATUS

Aloes have cultural and medicinal value

MITIGATION

Aloes must be protected where they may be affected by excavation for pylon footings, or they must be transplanted. If they exist in a large colony some may be destroyed subject to the discretion of the Heritage Authority

10

Sobiago

POSITION

23°58'46.47"S

29°44'38.88"E



OBSERVATIONS

Shallow stream bed and extensive sand deposit. There are crop fields on either side of the road, one with maize the other left fallow. Acacia vegetation.

Ground visibility moderate in some parts and good in others.

HERITAGE STATUS

Nothing of heritage value found.

11 Rampheri

POSITION

24° 1'25.59"S

29°43'57.19"E



OBSERVATIONS

South side of the road from Moria through Rampheri to Sejweng. Woodland, predominantly acacia, light soils, gritty and occasional quartz stones.

Ground visibility good.

HERITAGE STATUS

Nothing of heritage value found.

12

Paledi Shopping Mall

POSITION

23°53'32.64"S

29°42'3.92"E





OBSERVATIONS

Open space situated behind Mankweng Mall to the south. Bounded by the mall, residential area to the east and south, and the road to Nobody to the west. Tall grass in large part and an open strip used as a road and pedestrian path.

Ground visibility moderate in some parts and good in others.

HERITAGE STATUS

Nothing of heritage value found

6. SUMMARY OF FINDINGS

6.1. Burial Ground at Mothapo

Burial grounds are sacred reservations. We note that **Alternative Route** 1 passes immediately north of the cemetery at Mothapo through a gap with hills. This makes this route less suitable for reasons of proximity to the graves if other less difficult options exist.

6.2. Protection of Aloes

A colony of giant aloes identified as *Aloe excelsa* is located in the path of the **Preferred Route**. Aloes have proven herbal properties and they are applied for a wide range of human ailments. They are also used for treating sick chickens. As such they are culturally important and must be protected. Erecting overhead power lines over a colony of aloes cannot be regarded as inappropriate provided that the individual plants affected by pylon footings are transplanted.

6.3. Confirmation of the Preferred Route

This scoping survey confirms suitability of the **Preferred Route** subject to precautions taken about the aloes. If heritage resources were to be found during the construction phase, it is standard procedure that the relevant heritage authorities (SAHRA and/or LIHRA), will be notified immediately and a heritage expert called to attend.

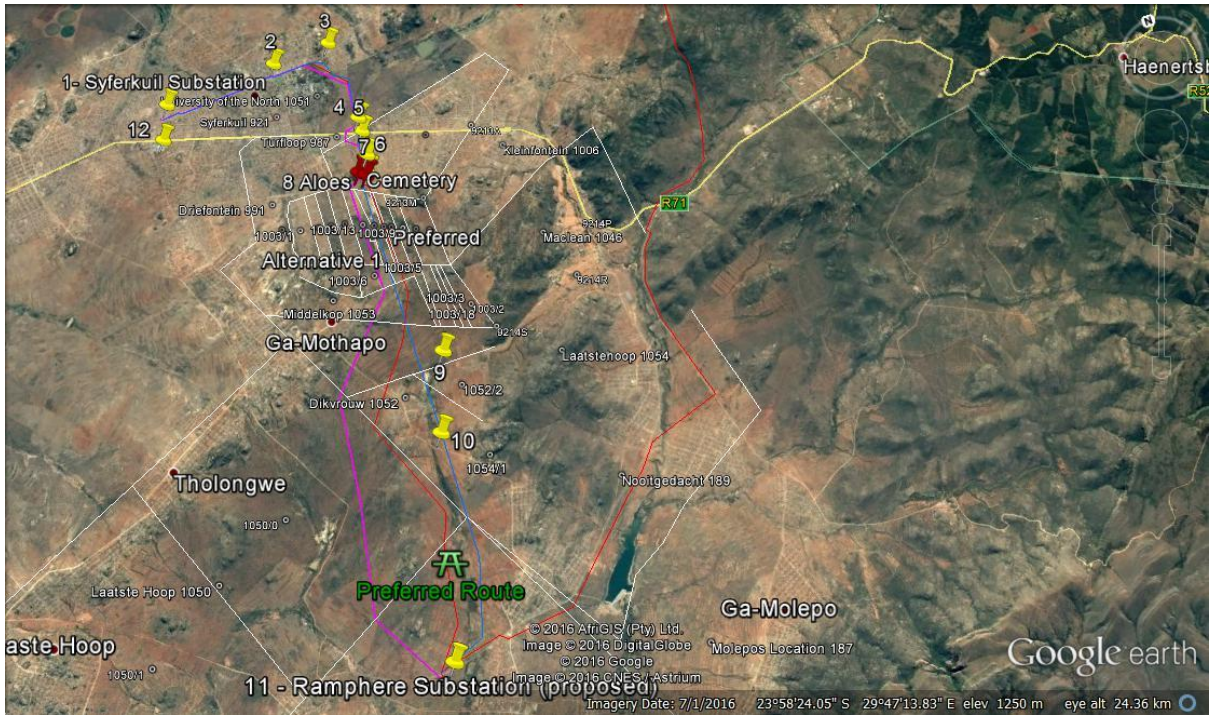


Fig. 10. Map showing the power line routing options. Red and yellow pegs show locations along the corridor subjected to intensive ground survey. Legend: Yellow pegs –no heritage resources found; Red pegs – heritage resources found.

6.4. Heritage Sensitivity

Only two sensitive areas are flagged: the Cemetery (Site 7) and colony of aloes (Site 8) (Figs 10 and 11).

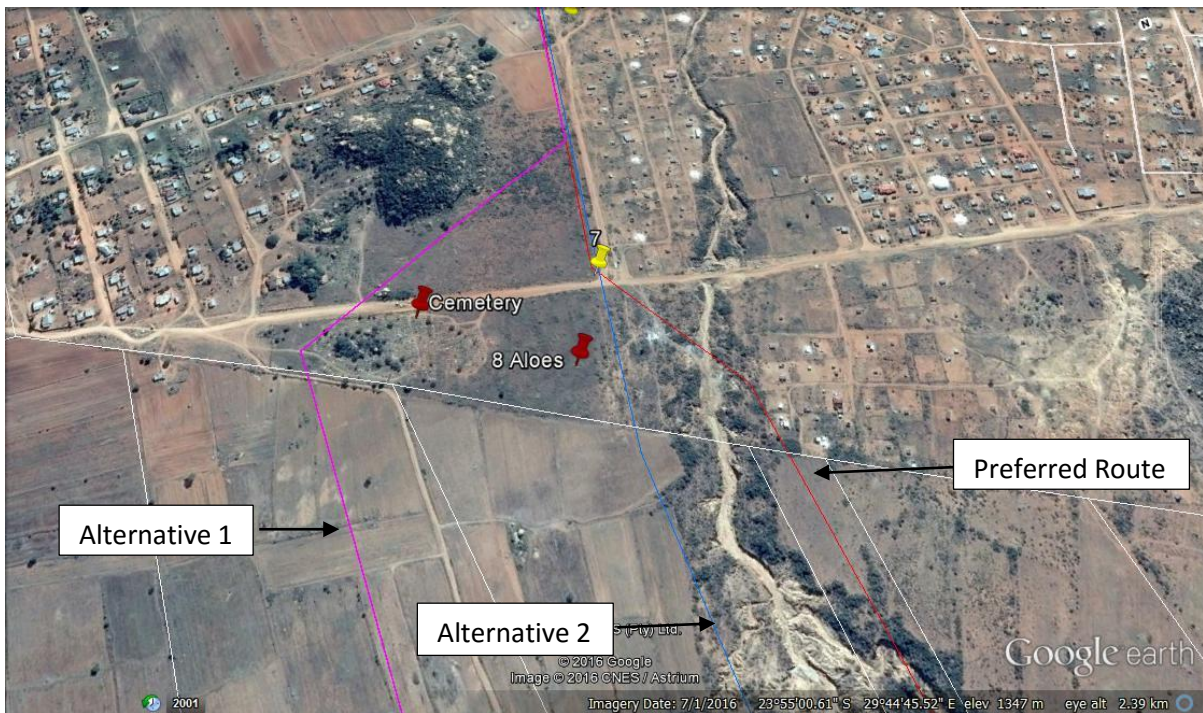


Fig 11. Sensitive areas, close view. Legend: Yellow peg – intensive ground surveys conducted, no heritage resources found; Red pegs – heritage resources found.

6.5. Assessment of Impacts using the Heritage Impact Assessment Statutory framework

6.5.1. Section 3(3) of the NHRA

The following is an assessment of the value of the identified heritage resources in terms of Section 3 of the NHRA which defines the National Estate.

(3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—

	STATUTORY REFERENCE	OBSERVATIONS
(a)	Its importance in the community, or pattern of South Africa's history	None
(b)	Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage	None
(c)	Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Aloe colonies. They are treasured as a source of herbal remedies and interest researchers in Indigenous Knowledge Systems and alternative medicine. Burial grounds are sacred.
(d)	Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	Aloe stands constitute a cultural landscape.
(e)	Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group	Aloe stands are beautiful and scenic
(f)	Its importance in demonstrating a high degree of creative or technical achievement at a particular period	None
(g)	Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	The strong attachment by the local community to the local cemetery and monuments erected there to honour those buried there.
(h)	Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa	None
(i)	Sites of significance relating to the history of slavery in South Africa.	None

6.5.2. Application of Section 38 of the NHRA

This report complies with Section 38 (Subsection 3) of the National Heritage Resources Act as per the schedule of actions which a developer must take before development commences:

Section 38 (3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

(a) The identification and mapping of all heritage resources in the area affected

A ground survey was conducted with 12 sample areas examined to determine the heritage potential of the corridor through which the power line will be constructed.

(b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7

A burial ground occurs in the area, situated 200m distance from the referred route. This distance is considered ample buffer.

(c) An assessment of the impact of the development on such heritage resources

A risk ranking system has been used with heritage sites placed in 4 priority grades. The burial ground, which is ranked highly, is located a safe distance from the preferred route. Aloes will be transplanted where footings for pylons will be constructed.

(d) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development

Rural electrification is a measure of government's serious commitment to modernisation of rural areas. As a public service performance indicator it ranks very high together with roads, water supply, education and health.

(e) The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources

N/A

(f) If heritage resources are adversely affected by the proposed development, the consideration of alternatives

The power line will be laid within a corridor 1km wide. The corridor has been surveyed for heritage resources and within that servitude there is room for flexibility regarding placement of footings for pylons to minimize impact on aloe colonies.

(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.

Some aloes may be transplanted, and *Aloe exce/sa* is known to have high tolerance for transplantation.

6.6. 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	Site preparation and excavation of footings for pylons
Preferred routing of power line	The preferred route as
Nature of Impact	Negative, both direct & indirect impacts.
Extent of Impact	Vegetation clearance and excavation is to damage archaeological resources above and below the surface and 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	Maintain 200m buffer with the burial ground. Avoid colonies of aloes and where they cannot be avoided transplant. Should archaeological or other heritage relics be found during the construction phase, heritage authorities will be advised immediately and a heritage specialist will be called to attend. This is standard precaution in view of inherent limitations of archaeological fieldwork.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

7. RECOMMENDATIONS AND CONCLUSIONS

- (i) **Alternative Route 1** passes close to the cemetery at Mothapo where a buffer of at least 100m would be required. This makes it less suitable if other less difficult options exist.
- (ii) The colony of giant aloes (*Aloe excelsa*) on the **Preferred Route** must be protected. However erecting overhead power lines over a colony of aloes cannot be regarded as inappropriate; individual plants affected by pylon footings will be transplanted.
- (iii) This study confirms suitability of the **Preferred Route** subject to precautions taken to protect aloe colonies. As a standard requirement if heritage resources were to be found during the construction phase, the relevant heritage authorities i.e. SAHRA and/or LIHRA, should be notified immediately and a heritage expert called to attend.
- (iv) No historically significant sites that are protected in terms of the National Heritage Resources Act 25 of 1999 will be affected by the proposed project. In conclusion we recommend that if unmarked human burials are discovered during the powerline development, they should be relocated to a formal graveyard. The removal must be conducted with due respect for the customs and beliefs of the affected community/ relatives.

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