DRAFT PHASE I HERITAGE IMPACT ASSESSMENT (HIA) FOR THE PROPOSED AMENDMENT OF APPROXIMATELY 16KM 132KV OVERHEAD POWER LINE FROM THE EXISTING BORUTHO SUBSTATION TO POTTIES SUBSTATION NEAR MOKOPANE IN MOGALAKWENA LOCAL MUNICIPALITY WITHIN THE WATERBERG DISTRICT OF LIMPOPO PROVINCE.

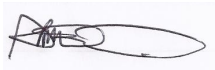
HERITAGE CONSULTANTS	CLIENT
Mbofho Consulting and Project Managers 89 Hans van Rensburg Street Office 209, The Office Park Polokwane 0700 Cell: 061 544 7044 Email: info@mbofhoconsulting.co.za	**Eskom Holdings, SOC Limited** P.O. Box 2428 Polokwane 0700 Tel: (015) 299 0592 Fax: (015) 295 7550 Contact Person: Prudence Khoza
EAP **EVAU 77 Consulting PTY Ltd** PostNet Suite #299, Private Bag X9307, Polokwane, 0700 Cel: 082 800 0996 Fax: : (086) 620 6336 Contact Person: Ephraim Nebaimoro E-mail: Ephraim.nebaimoro@gmail.com	

Date: 25 March 2022

REPORT DETAILS

Project name:	**Phase I Heritage Impact Assessment (HIA) for the proposed amendment of approximately 16km 132kV overhead power line from the existing Borutho substation to Potties substation near Mokopane in Mogalakwena Local Municipality within the Waterberg District of Limpopo Province.**
CLIENT:	**Eskom Holdings, SOC Limited**
Heritage firm:	**Mbofho Consulting and Project Managers**
Project team:	**Matodzi A. Silidi**: M.A Env Management (UOFS), PGD in Heritage St (UCT), B.Env. Sc. (UNIVEN), ASHEEP (NOSA), SAMTRAC (NOSA), Environmental and Mining Rehab (UNW), Advanced Project Management (UNW), Handling, Storage and Transportation of Dangerous Goods and Hazardous Substances (UNW), LLB in progress (UNISA) **T.R Silidi:** BA Social Sciences (Wits), BA Hons (Univen), Masters in Social Impact Assessment (UJ), Negotiations (SARWA)

DOCUMENT CONTROL

	NAME	SIGNATURE	DATE
FIELD WORK AND REPORT:	Mr M.A Silidi		2022/03/25

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DECLARATION OF INDEPENDENCE

Mbofho Consulting and Project Managers cc 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. MCPM will not be held liable for such oversights and additional costs thereof.

_____

Full Name: Matodzi A. Silidi, Pr.Sci.Nat, Reg.EAPASA
Title / Position: HIA Consultant: Mbofho Consulting and Project Managers
Qualification(s): Masters Env Management (UOFS), PGD in Heritage St (UCT), B.Env. Sc. (UNIVEN), ASHEEP (NOSA), SAMTRAC (NOSA), Environmental and Mining Rehab (UNW), Advanced Project Management (UNW), Handling, Storage and Transportation of Dangerous Goods and Hazardous Substances (UNW). LLB in progress (UNISA)

EXECUTIVE SUMMARY

1.1. Background

Eskom SOC, Limpopo Operating Unit, through EVAU77 Consulting, appointed Mbofho Consulting and Project Managers (MCPM) to conduct a Heritage Impact Assessment (HIA) Study for the proposed amendment of approximately 16km 132kV overhead power line from the existing Borutho substation to Potties substation near Mokopane in Mogalakwena Local Municipality within the Waterberg District of Limpopo Province.

The project area is surrounded by villages such as Ga Masenya, Molotswi, Mapela and Ga Mosoge. Many of the members who occupy these villages are descendants of the Langa Ndebele whose origins can be traced to Nguni (Kwa Zulu/Natal) ancestry. The Langa Ndebele intermarried, over centuries, numerous Sotho and other clans in the region. The descendants of the Ledwaba/Maune Ndebele clans live in the Bergzicht-Kalkspruit and Mašašane townships to the east of the project area (2428BB Tinmyne & Limburg 2328DD 1:50 000 topographical maps; Modimolle 1:250 000 map and Google imagery

This report includes an impact study on potential archaeological and cultural heritage resources that may be associated with the proposed development.

The proposed powerline was approved by the DEA during the planning phase in 2015. However, during the construction phase, the status quo of the area had completely changes, i.e New residential dwellings and business properties have been constructed in parts of the development area necessitating another change to the authorised route alignment. That then prompted the amendment to try to avoid the new established properties. The powerline will still follow the approved servitude, but where there is a new property, the powerline will bend / deviate in order to avoid the new infrastructure. There are in total of 3 deviations that require detailed specialist assessment, to identify any potential impacts within the amended route

alignment and the measures needed to manage and monitor the impacts, to allow construction to continue

1.2. Method Statement

The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed powerline from Borutho substation to Potties substation near Mokopane. This study was conducted as part of the specialist input for the Environmental Impact Assessment (EIA) exercise.

1.3. Nature of Proposed Development

This study is part of an EIA exercise triggered by the proposed amendment of approximately 16km 132kV overhead power line from the existing Borutho substation to Potties substation near Mokopane in Mogalakwena Local Municipality within the Waterberg District of Limpopo Province.

The proposed powerline will connect from Borutho Substation and terminate at the Potties substation near Mokopane.

1.4. Project Area

The proposed Borutho Platreef powerline development is situated in the Mapela area in the north west of Mokopane town under Mogalakwena Local Municipality of Limpopo Province. A large section of the proposed 16km long servitude of the 132kv overhead power line from the existing Borutho substation to Potties substation fall mainly within active mining area along N11 Road, old agriculture fields, grazing land and built up rural settlements. The proposed powerlines will start from the existing Borutho substation to Potties substation.

1.5. The Heritage Impact Assessment Process

This HIA study report is segmented into sections as follows:

1) Management summary
2) Methodology
3) Information with reference to the desktop study
4) Maps and relevant geodetic images and data

5) GPS co-ordinates
6) Directions to the site
7) Site description and interpretation of the cultural area where the project will take place
8) Management details, description of affected cultural environment, photographic records of the project area
9) Recommendations regarding the significance of the site and recommendations regarding further monitoring of the site
10) Conclusion.

1.6. The Legal Framework and Guidelines

This HIA study is a specialist study to the EIA process and it is guided by the:
National Heritage Resources Act, *(Section 38 of Act 25 of 1999)*

SAHRA AMP HIA Guideline

Terms of Reference provided to MCPM *(2022).*

All South African heritage assets are protected by the National Heritage Resources Act of 1999, which makes it an offence to destroy heritage resources without permission from the relevant authority. In terms of the provisions of the NHRA Act of 1999, individual sites within the project area enjoy the varying levels of protection in the country.

1.7. Results of the Study

Jackson (1969) recorded historical and archaeological heritage in the general cultural landscape in which the proposed project is situated. These include historical battle sites (1854 Massacre of Hermanus Potgieter and his party), traditional circumcision lodges (*Moloto/Meloto*), girls' initiation sites marked by small stone Cairns and burial sites (ibid). The general landscape in the project area has formal village cemeteries. However, analysis of the archaeological, cultural heritage, environmental and historic contexts of the project area revealed that the project area is located within heavily disturbed mining area and built up landscape. Literature review and field surveys by MCPM revealed that the direct project-receiving area has

limited heritage sensitivity. The project receiving areas are situated on previously disturbed land parcels. However, there are contemporary homesteads that flank sections of the proposed powerline servitude and some of these homesteads may have burial grounds and gravesites.

The heritage study entailed a site visit and ground truthing conducted on 23 February 2022 during which the heritage sensitivity and potential adverse impacts of the proposed activities were determined.

The heritage sensitivity of the project area is summarised as follows:

General observations

The Stone Age

No Stone Age tools were found.

Late Stone Age Petroglyphs

No Stone Age tools were found.

The Early Iron Age

No sites dating to the Iron Age were found.

The Later Iron Age

No sites of the Later Stone Age period were found.

Burial grounds

No burial grounds exist in the power line servitude nor were reported close to the servitude.

Ranking of sites and Risk Assessment

	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. They must be protected.	0
2	Medium A	Substantial archaeological deposits, buildings	0

		protected under Section 34 of NHRA. Footprint of early modern mining. Cultural Landscapes. These may be protected at the recommendations of a heritage expert.	
3	Medium B	Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented.	0
4	Low	Heritage sites which have been recorded, but considered of minor importance relative to the proposed development.	0
		TOTAL	**0**

1.8. Recommendations

The following recommendations are made in this report:

The project area has considerable existing built-up areas and as such no significant impacts are anticipated on the built environment given the existence of contemporary built-infrastructure or structures already in the project area.

Low visibility emanating from the proposed overhead power line from the existing Borutho substation to Potties substation development is anticipated, particularly during the construction phase. Furthermore, the project area has existing mining, powerlines, bulk water pipeline, industrial and residential developments in place, which will absorb the proposed developments in situ once the project becomes operational. Therefore the visual impacts of the proposed Borutho Platreef powerline are considered to be below across the receiving contemporary cultural landscape. No mitigation is proposed because the receiving environment is currently in mining and built up areas, with existing high voltage powerlines, minor reticulation powerlines, bulk water pipeline and reticulation infrastructure and township settlements with their associated infrastructure and other bulk and service infrastructures.

In light of these findings it is recommended that the project goes ahead. As a standard precaution archaeological deposits are usually buried underground. Should

archaeological artefacts or skeletal material be exposed in the area during construction, such activities should be halted, and the provincial heritage resources authority or SAHRA notified in order for an investigation and evaluation of the finds to take place

TABLE OF CONTENTS

DOCUMENT CONTROL 3
EXECUTIVE SUMMARY 5
ABBREVIATIONS 12
GLOSSARY 14
1. INTRODUCTION 19
1.1. Location and physical setting 22
2. LEGAL FRAMEWORK 31
2.2. Definition of heritage (National Estate) 32
2.3. Protection of buildings and structures older than 60 years 32
2.4. Protection of archaeological sites 32
2.5. Graves and burial grounds 32
2.6. The National Environmental Management Act 33
2.7. The Burra Charter on Conservation of Places of Cultural Significance 33
3. METHODOLOGY AND THEORETICAL APPROACHES 34
3.1. Literature survey 34
3.2. Fieldwork 34
3.3. Limitations of the Study 37
4. ARCHAEOLOGICAL AND HISTORICAL CONTEXT 38
4.1. Cultural sequence summary 38
4.3. Appearance of hominids 39
4.4. The Early Stone Age 40
4.5. The Iron Age Culture [ca. 2000 years BP] 41
4.6. Historical Context 43
5. FINDINGS OF THE HERITAGE SURVEY 47
5.1. General observations 47
5.4. The Early Iron Age 47
5.5. The Later Iron Age 47
5.6. Burial grounds 47
5.11. Ranking of sites and Risk Assessment 49
5.12. Assessment of Impacts using the Heritage Impact Assessment Statutory Framework 50
5.13. Risk Assessment of the findings 52
6. CONCLUSION AND RECOMMENDATIONS 53
7. REFERENCES 54

ABBREVIATIONS

AIA	Archaeological Impact Assessment
APPA	Atmospheric Pollution Prevention Act 45 of 1965
BID	Background Information Document
C	Contractor
CARA	Conservation of Agricultural Resources Act, 1983 (Act No 43
CECO	Construction Environmental Conservation Officer
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DSR	Draft Scoping Report
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
ECA	Environmental Conservation Act
ECO	Environmental Conservation Officer
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EM	Environmental Manager
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
EMPR	Environmental Management Programme Report
EMS	Environmental Management System
FC	Farming Community
GN	General Notice
GNR	General Notice Regulation
Ha	Hectares
HIA	Heritage Impact Assessment
HMP	Heritage Management Plan
I&AP's	Interested and Affected Parties
IDP	Integrated Development Plan
IRR	Issues and Responses Report
IWULA	Integrated Water Use Licence Application
LEDET	Limpopo Department of Economic Development,

LIA	Late Iron Age
LFC	Late Farming Community
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act 107 of 1998
NEMAQA	National Environmental Management: Air Quality Act 39 of 2004
NEMPAA	National Environmental Management Protected Areas Act
NEMWA	National Environmental Management: Waste Act 59 of 2008
NGO	Non-Government Organisation
NHRA	Nation Heritage Resources Act, Act 25 of 1999
PM	Project Manager
SAHRA	South African Heritage Resources Agency
SM	Site Manager
ToR	Terms of Reference

GLOSSARY

The following terms used in this Archaeological /Heritage Impact Assessment are defined in the National Heritage Resources Act [NHRA], Act No. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter *(Burra Charter)*:

Archaeological material: remains older than 100 years, resulting from human activities left as evidence of their presence, which are in the form of structure, artefacts, food remains and other traces such as rock paintings or engravings, burials, fireplaces etc.

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

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

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

Compatible use means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

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. These include intangible resources such as religious 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.

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

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

Environment: The surroundings within which humans exist and that are made up of:

i. the land, water and atmosphere of the earth;

ii. micro-organisms, plant and animal life;

iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and,

iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being. This includes the economic, social, cultural, historical and political circumstances, conditions and objects that affect the existence and development of an individual, organism or group.

Environmental Impact Assessment: An Environmental Impact Assessment (EIA) refers to the process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the environment. The EIA includes an evaluation of alternatives. As well as recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and environmental management and monitoring measures.

[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.

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.

Expansion: means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased;

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

Heritage Impact Assessment (HIA): refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. The HIA includes recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

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

Historic material: means remains resulting from human activities, which are younger than 100 years and no longer in use; 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 refer to the period beginning with the appearance of written texts.

Impact: The positive or negative effects on human well-being and / or on the environment

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

Interested and Affected Parties: Individuals, communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected

by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Interpretation: means all the ways of presenting the cultural significance of a place.

***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 of complex state society and long-distance trade contacts.

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

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

Mitigate: The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

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 was 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.

Protected area: means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers;

Public Participation Process: A process of involving the public in order to identify issues and concerns, and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters

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

Setting: means the area around a place, which may include the visual catchment.

Significance: can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change *(i.e. intensity, duration and likelihood).* Impact significance is the value placed on the change by different affected parties *(i.e. level of significance and acceptability).* It is an anthropocentric concept, which makes use of value judgments and science-based criteria *(i.e. biophysical, physical cultural, social and economic).*

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.

Site Recording Template: a standard document format for site recording.

Use: means the functions of a place, as well as the activities and practices that may occur at the place.

1. INTRODUCTION

Eskom SOC, Limpopo Operating Unit, through EVAU77 Consulting, appointed Mbofho Consulting and Project Managers (MCPM) to conduct a Heritage Impact Assessment (HIA) Study for the proposed amendment of approximately 16km 132kV overhead power line from the existing Borutho substation to Potties substation near Mokopane in Mogalakwena Local Municipality within the Waterberg District of Limpopo Province.

The project area is surrounded by villages such as Ga Masenya, Molotswi, Mapela and Ga Mosoge. Many of the members who occupy these villages are descendants of the Langa Ndebele whose origins can be traced to Nguni (Kwa Zulu/Natal) ancestry. The Langa Ndebele intermarried, over centuries, numerous Sotho and other clans in the region. The descendants of the Ledwaba/Maune Ndebele clans live in the Bergzicht-Kalkspruit and Mašašane townships to the east of the project area (2428BB Tinmyne & Limburg 2328DD 1:50 000 topographical maps; Modimolle 1:250 000 map and Google imagery).[2]

This report includes an impact study on potential archaeological and cultural heritage resources that may be associated with the proposed development.

The proposed powerline was approved by the DEA during the planning phase in 2015. However, during the construction phase, the status quo of the area had completely changes, i.e New residential dwellings and business properties have been constructed in parts of the development area necessitating another change to the authorised route alignment. That then prompted the amendment to try to avoid the new established properties. The powerline will still follow the approved servitude, but where there is a new property, the powerline will bend / deviate in order to avoid the new infrastructure. There are in total of 3 deviations that require detailed specialist assessment, to identify any potential impacts within the amended route alignment and the measures needed to manage and monitor the impacts, to allow construction to continue

[2] Pistorius, J.C.C. 2015. A Phase I Heritage Impact Assessment study for the proposed Eskom Borotho Project between the Potgietersrust Substation and the proposed Borutho Substation in the Limpopo Province of South Africa

This report details the desktop study, review of previous heritage assessment studies conducted during the EIA specialist studies, field study and present results of the study as well as discussion on the anticipated impacts of the proposed development as is required by the National Heritage Resources Act, Act 25 of 1999 Section 38. It focuses on identifying and assessing potential impacts on archaeological, as well as on other physical cultural properties including historical heritage and intangible resources in relation to the proposed powerline development.

The study was designed to ensure that any significant cultural, physical property or sites and related intangible heritage resources are located and recorded, and site significance is evaluated to assess the nature and extent of expected impacts from the proposed development. The assessment includes recommendations to manage the expected impact of the development site. The report includes recommendations to guide heritage authorities in making appropriate decision with regards to Heritage Management Planning.

MCPM team conducted the assessment; research and consultations required for the preparation of this HIA report in accordance with its obligations set in the NHRA as well as the environmental management legislations. In line with SAHRA guidelines, this report provides:

1) Management summary
2) Methodology
3) Information with reference to the desktop study
4) Maps and relevant geodetic images and data
5) GPS co-ordinates
6) Directions to the site
7) Site description and interpretation of the cultural area where the project will take place
8) Management details, description of affected cultural environment, photographic records of the project area
9) Recommendations regarding the significance of the site and recommendations regarding further monitoring of the site
10) Conclusion.

The heritage study entailed a site visit and ground truthing conducted on 23 February 2022 during which the heritage sensitivity and potential adverse impacts of the proposed activities were determined.
The follow up site visit was conducted on the 23 March 2022, with the aid of track log (figure 24 – 28)
This report includes an impact study on potential archaeological and cultural heritage resources that may be associated with the proposed development.

1.1. Nature of proposed Development

This study is part of an EIA exercise triggered by the proposed amendment of approximately 16km 132kV overhead power line from the existing Borutho substation to Potties substation near Mokopane in Mogalakwena Local Municipality within the Waterberg District of Limpopo Province.
The proposed powerline will connect from Borutho Substation and terminate at the Potties substation near Mokopane.
This report includes an impact study on potential archaeological and cultural heritage resources that may be associated with the proposed development.

The proposed powerline was approved by the DEA during the planning phase in 2015. However, during the construction phase, the status quo of the area had completely changes, i.e New residential dwellings and business properties have been constructed in parts of the development area necessitating another change to the authorised route alignment. That then prompted the amendment to try to avoid the new established properties. The powerline will still follow the approved servitude, but where there is a new property, the powerline will bend / deviate in order to avoid the new infrastructure. There are in total of 3 deviations that require detailed specialist assessment, to identify any potential impacts within the amended route alignment and the measures needed to manage and monitor the impacts, to allow construction to continue

The proposed development and attendant physical works may result in damage or destruction of heritage resources along the servitude of the proposed power line. The purpose of an HIA is to provide a clear understanding of the heritage sensitivity of the area and to prescribe appropriate mitigation measures.

1.1. Location and physical setting

The proposed development is situated in the Mapela area of Mogalakwena Local Municipality of Limpopo Province. A large section of the proposed 16km long servitudes of the 132kv overhead power line from the existing Borutho substation to Potties substation fall mainly within active mining area along N11 Road and commercial farm boundary fence line servitudes, old agriculture fields, grazing land and built up rural settlements.

The proposed project is located on different portions of the following farms as follows:

Noord Brand 774 LS; Rooibokfontein 821 LR; Armoed 823 LR; Bultongfontein 239 LR; Holmesleigh 1 KS; Rietfontein 2 KS near Mokopane area under Mogalakwena Local Municipality within the Waterberg District Municipality, Limpopo Province.

Geographically the project area is characterised by large mountains and smaller kopjes and knolls scattered over a vast plain (Jackson 1969). The area is typical bushveld with many acacia trees and aloes. The project area is rich in minerals with the mining of platinum, diamonds and granite as chief mineral resources. The project area has been significantly altered as a result of open cast mining. Mining activities in project area significantly impacted on archaeological cultural heritage in the area (Murimbika 2011). The Mapela landscape has been altered and it is visible on satellite and aerial imagery (see figures 1). The project area is part of an existing and previously developed and disturbed landscape with mining infrastructure within and outside mining area, main roads; a new bulk water supply (pipeline), access roads, bulk and distribution Powerlines and infrastructure, and other auxiliary mining infrastructures dominate the affected project area. Furthermore the considerable portions of the project area were previously cleared for agriculture purposes.

The approved proposed powerline starts at Borutho substation at GPS coordinates S23° 54' 08.05", E028° 58' 34.68" and ends at Potties substation on S24° 05' 26.20", E028° 57' 46.30"

The first deviation starts at S23° 58' 19.63", E028° 57' 09.35" and connect back at S23° 58' 26.53", E028° 57' 12.81"

The second deviation starts at S23° 58' 30.27", E028° 57' 14.29" and connect back at S23° 58' 56.37", E028° 57' 25.02"

The 3rd deviation starts at S23° 59' 54.51", E028° 57' 46.90" and connect back at S24° 02' 39.42", E028° 58' 59.19"

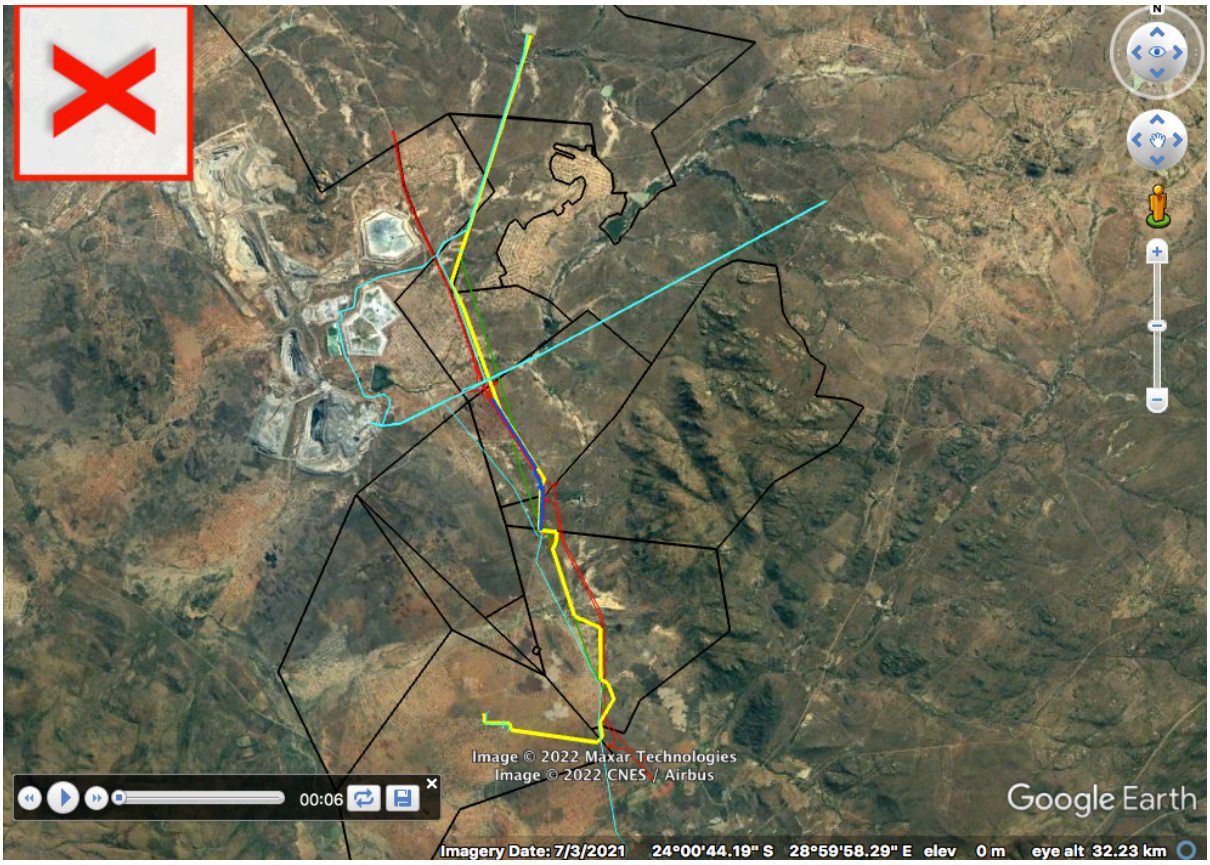

Figure 1: Regional map detailing the location of the authorised Platreef 132kV power line alignment (yellow) and the proposed route amendments (red), located near Mokopane in the Waterberg District Municipality, Limpopo Province

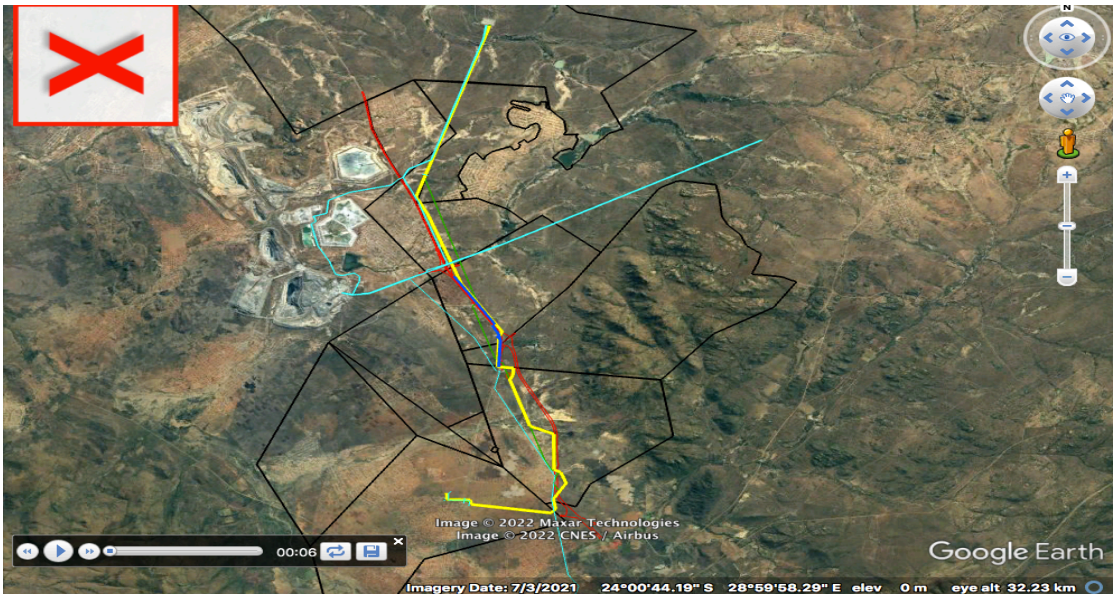

Figure 2: Google Earth map shows the location of the proposed powerline

Figure 3: The proposed powerline runs alongside an existing line. The photo shows the first deviation, where the proposed powerline bend to avoid new established properties on the approved servitude. The area is characterised with Aloe plant

mixed with few patches of Marual tree species with ***Dichrostachys cinerea*** commonly known as Sicklebush

Figure 4 shows the mining area

Figure 5 shows the settlement area

Figure 6 shows subsistance farming

Figure 7 shows hills around the project area

Figure 8 shows degraded area within the servitude

Figure 9 shows grass and sicklebush

Figure 10 - 11: shows the first deviation, where the proposed powerline bend to avoid new established properties on the approved servitude. The area is characterised with Aloe plant mixed with few patches of Marual tree species with ***Dichrostachys cinerea*** commonly known as Sicklebush

Figure 12 - 14: shows the second deviation, where the proposed powerline bends again to avoid new established properties which can be seen on the photo. The area is heavily disturbed with few patches of Marual tree species and ***Dichrostachys cinerea***

Figure 15 - 19: shows the third and last deviation, where the proposed powerline bends again to avoid new established properties. The photo showing the stockpile depicts that the area is severly disturbed. The area is heavily disturbed with few patches of Marual tree species**,** Dichrostachys cinerea and Aloe with rock outcrop

Figure 20: An old dilaphidated building along the N11 next to the Nature Reserve	Figure 21: Photo showing the front façade of the old building inside the Nature Reserve

Figure 22 The photo shows where the powerline reconnect with the approved corridor just infront of the Contractor's site office	Figure 23, shows the powerline then bends within the approved servitude and follows the exisiting powerline going straight to the mine

2. LEGAL FRAMEWORK

This heritage impact assessment fulfils an onus on developers to safeguard heritage resources. This obligation has been legislated with Sections 34, 35, 36 and 38 of the National Heritage Resources Act (No 25 of 1999) forming the context in which this HIA report has been prepared.

2.1. Section 38 of National Heritage Resources Act on Heritage Impact Assessments

Section 38 of the NHRA states the nature and scale of developments which triggers an HIA:

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[3];*** *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.

[3] Areal extent of the proposed development triggers the HIA.

2.2. Definition of heritage (National Estate)

Section 3 lists a wide range of cultural phenomena which could be defined as heritage, or the *National Estate* (3(2)). Section 3(3) outlines criteria upon which heritage value is ascribed. This Section is useful as a field checklist for the identification of heritage resources.

2.3. Protection of buildings and structures older than 60 years

Section 34 provides automatic protection for buildings and structures above 60 years old until it can be proven that they do not have heritage value:

> *(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.*

2.4. 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.

2.5. Graves and burial grounds

Section 36 of the NHRA provides for the protection of certain graves and burial grounds. Graves are generally classified under the following categories:

- Graves younger than 60 years;

- Graves older than 60 years, but younger than 100 years;
- Graves older than 100 years; and
- Graves of victims of conflict
- Graves of individuals of royal descent
- Graves that have been specified as important by the Ministers of Arts and Culture.

However the sanctity of all graves and burial grounds is recognized, whether they are protected by the law or not.

2.6. The National Environmental Management Act

This act states that a survey and evaluation of cultural resources must be done in areas where development projects that will affect the environment will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made. Environmental management is a much broader undertaking to cater for cultural and social needs of people. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

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

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 **ICOMOS Australia Charter for the Conservation of Places of Cultural Significance (the Burra Charter 1999)** as a benchmark for best practice in heritage management.

3. METHODOLOGY AND THEORETICAL APPROACHES

3.1. Literature survey

A search through existing literature was undertaken to provide context for the study area. Reports of previous HIA studies which have been conducted in the general locality of the study area was found on SAHRIS, the SAHRA database portal. Furthermore this author carried out a number of heritage impact assessment studies in the broader region:

Matenga & Silidi, 2011. Phase I Heritage Impact Assessment in terms of Section 38 of the National Heritage Resources Act No 25/1999 for the proposed new Borutho Substation. Unpublished HIA Report

Mlilo, T. 2018. Phase I Archaeological and Heritage Impact Assessment Report in terms of Section 38 of the National Heritage Resources Act No 25/1999 for Proposed 2 x 16km 132kv powerlines in Mogalakwena Local Municipality of Limpopo Province. Unpublished HIA Report

Murimbika, M. 2012. Archaeological Impact Assessment Report for proposed Eskom Platrieef Powerline and Substation Project in Mogalakwena Local Municipality in Limpopo Province. Unpublished HIA Report.

3.2. Fieldwork

The footprint of the proposed power line was surveyed by means of walking which was varied with driving in sections where it followed the road servitude. The vehicle was also used to approach the eastern terminal of the line.

Geographic coordinates were obtained with a handheld Garmin GPS global positioning unit. Photographs were taken as part of the documentation process during field study.

Photographs were taken to show the general character of the landscape. A photo gallery has been prepared to show different landscape features in Section 1.1 above. The maps below show the track log (Figures 24-29).

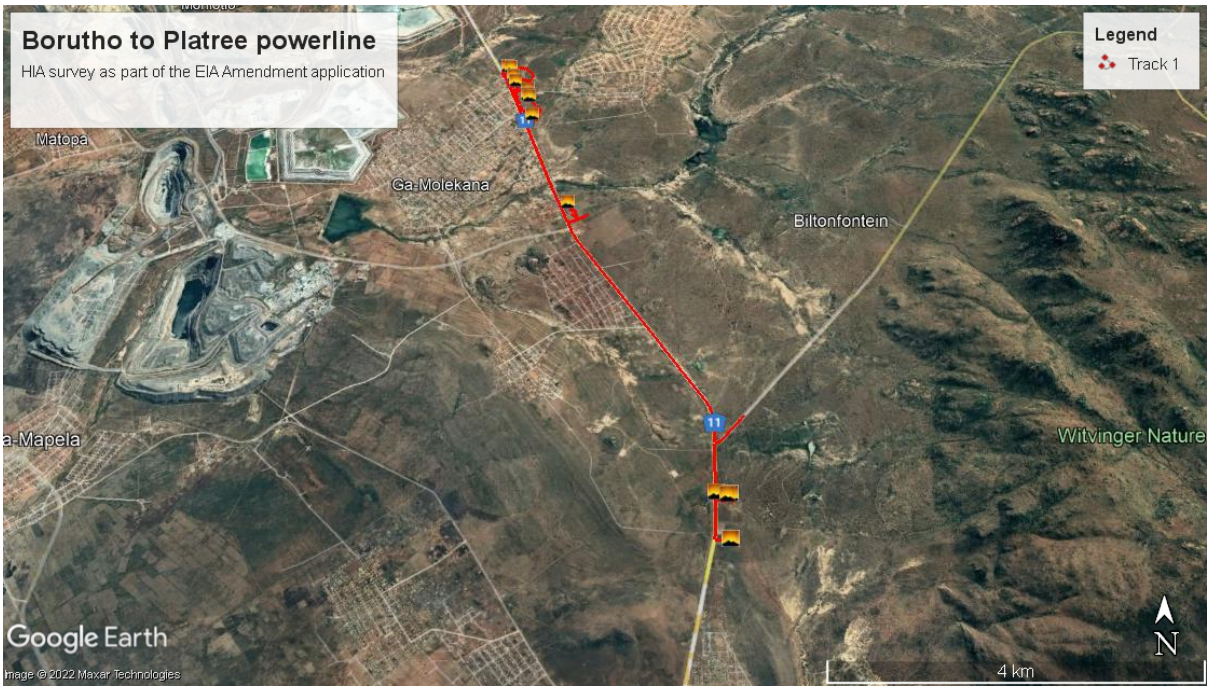

Figure 24: The overview map showing the track log

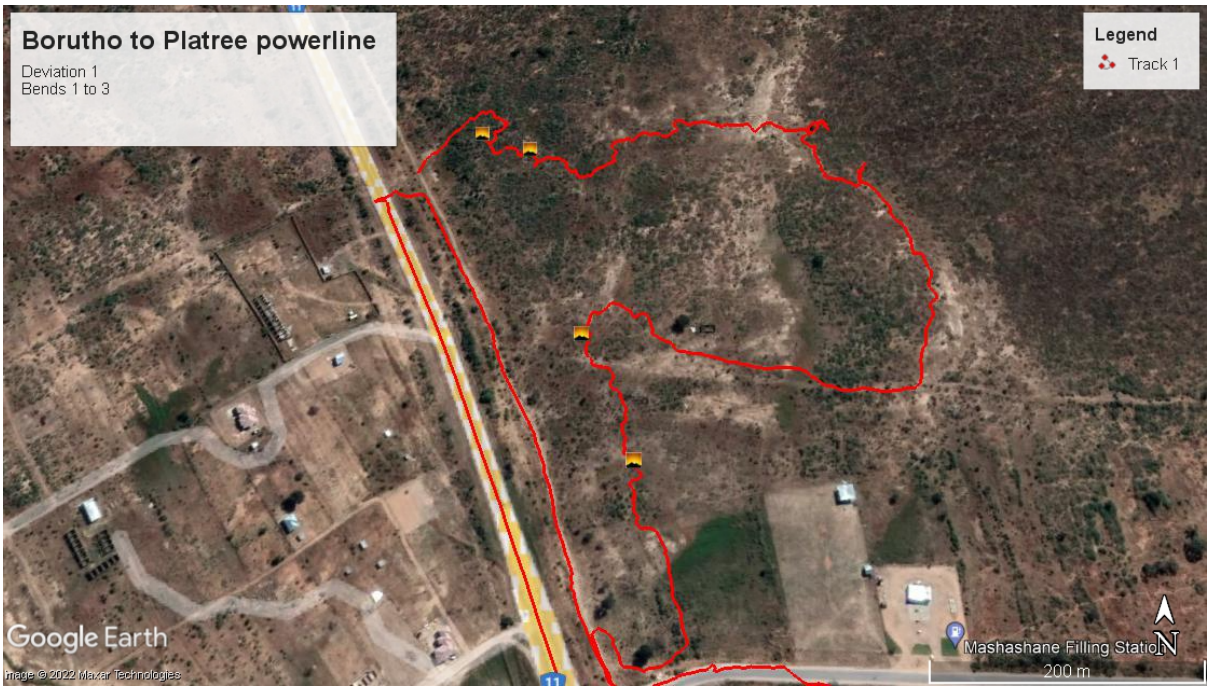

Figure 25: Track log, showing the first deviation of the powerline

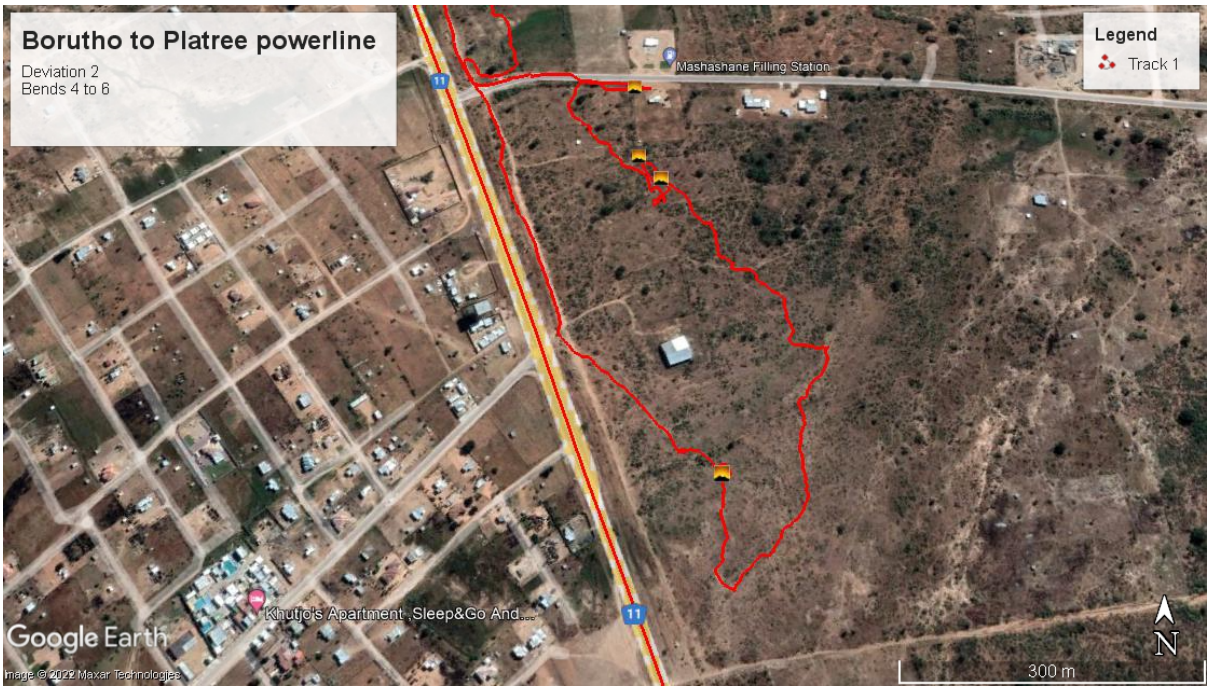

Figure 26: Track log, showing the second deviation of the powerline

Figure 27: Track log, showing the 3rd deviation of the powerline

Figure 28: Track log, showing the 3rd deviation of the powerline

3.3. Limitations of the Study

Ground visibility impaired by tall grass and sickle bush throughout the proposed route except in the cleared areas for new development and agricultural purposes

4. ARCHAEOLOGICAL AND HISTORICAL CONTEXT

An outline of the cultural sequence in South Africa is given here as a theoretical framework for the identification of features / structures and objects of archaeological, historical and cultural interest. As summary of the reconstructed cultural sequence is given below:

4.1. Cultural sequence summary[4]

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	Tswana / Sotho, Nguni people	Iron Age Farmers	Stone walls Mfecance / Difaqane
(iii) Colonial period	19th Century	European settlers / farmers / missionaries/ industrialisation	Buildings, Missions, Mines, metals, glass, ceramics

[4] Adapted from Exigo Consultancy. 2015. Frances Baard District Municipality: Proposed Nkandla Extension 2 Township Establishment, Erf 258 Nkandla, Hartswater, Northern Cape Province.

4.3. Appearance of hominids

South Africa has a yielded a very good record of fossil hominids, proto-humans which appeared in South Africa more than 3million years ago. Three famous sites in Gauteng, Limpopo and Northwest Provinces have been collectively named the Cradle of Humankind and inscribed as a serial UNESCO World Heritage Site.[5]

The cultural sequence in South Africa begins with the appearance of Hominids and the Stone Age culture and spans more than 4 million years. Hominids were primate species and immediate ancestors of man. Hominid sites and their fossil remains are not so commonly found largely confined to dolomite caves on the highveld in Gauteng, Limpopo and Northwest Provinces[6]. The Makapan's Mountain ranges which lie 50km south of Polokwane and 25km north west of the study area is home to one of the better known hominid sites, the Makapansgat/ Makapans 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.

Figure 31. The photo showing Makapans valley, M.Silidi 2002

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

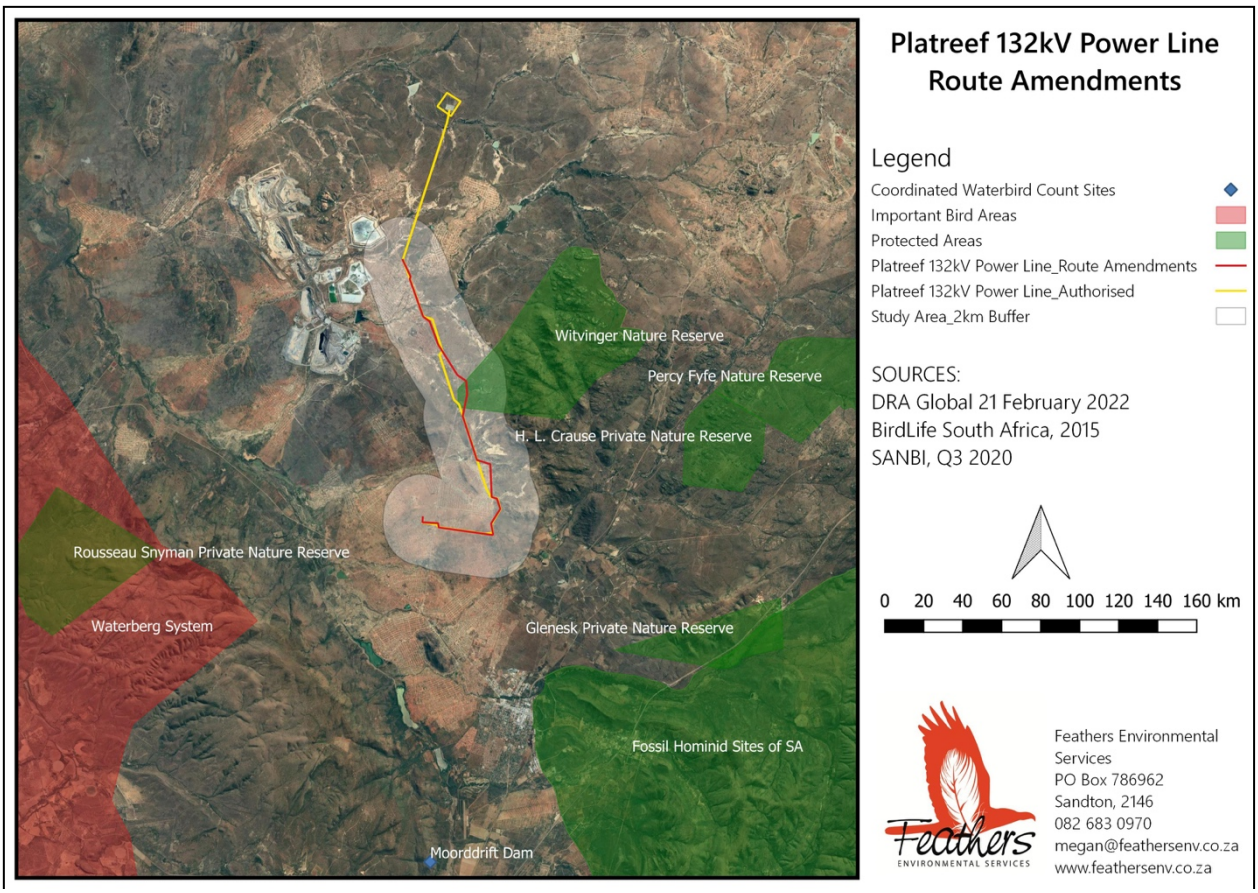

Figure 32: Regional map detailing the location of the authorised Platreef 132kV power line route amendments

4.4. The Early Stone Age

4.4.1. The Early Stone Age (2 million to 250 000 years BP)

The Stone Age dates back more than 2 million years representing a more explicit record of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages. These early humans made stone and bone implements. Material evidence is found in caves, rock-shelters and on river sides and edges of streams, and very rarely seen in open country.[7] Such tools bore a consistent shape such as the pear-shaped handaxe, cleavers and core tools (Deacon & Deacon, 1999). These tool industries have been called Oldowan and Acheulean and were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus. Acheulean artefacts are usually found near sites where they were manufactured and thus in close proximity to the raw material or at kill sites. The early hunters are classified as hominids meaning that they had not evolved to the present human form.

[7] http://archaeology.about/od/bterms/g/bordercave.htm

4.4.2. Middle Stone Age (MSA) [250 000 yrs – 30 000 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.[8] The Cave of Hearths, Hyena Mandible and Rainbow Cave in the Makapans Mountains have a remarkable Early Stone Age record.

4.4.3. Later Stone Age (LSA)[40 000 yrs to ca2000 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 exhibited, such as rock art and purposeful burials with ornaments, became a regular practice. 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.

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

The Iron Age culture supplanted the Stone Age at least 2000 years ago, associated with the introduction of farming and use of several metals and pottery. Iron Age communities are believed to have been speakers of Bantu languages who practiced agriculture and kept domestic animals such as cattle, sheep, goat and chickens.

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

There is however increasing evidence that sheep and probably cattle as well might have moved into the area much earlier than the Iron Age.[9]

4.5.1. Early Iron Age

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. Archaeologists postulate a sudden synchronized arrival of these technologies in South Africa, indeed in the whole region of Eastern and Southern Africa, thought to represent a fairly rapid movement of people down the continent.[10] As such migration of Bantu speakers as agency for the spread of the Iron Age culture has become popular theory. Pottery styles are examined to characterize and identify archaeological traditions within the broad Iron-using culture and to further isolate geographical variations, which have been called *facies*.[11] A more plausible theory in view of the fact that the Bantu are indigenous to the continent in any case, this was not a migration in the strict sense of the word, but rather expansion of settlement possibly taking place over thousands of years.

Broadly of study falls within what is dubbed eastern stream of the EIA named *Urewe Tradition,* which developed into:

- Matola tradition (450 AD), which evolved
- Matakoma and Eiland (4th to 6th century AD)(Evers 1981, p68; Maggs & Whitelaw 1991, p13).

Although general trends are thus known as outlined above (Huffman 2007) the EIA settlement history and cultural sequence of Phalaborwa remains vague.

[10] Phillipson, D. W. 2005. *African Archaeology*. Cambridge: University of Cambridge Press: 249.
[11] 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

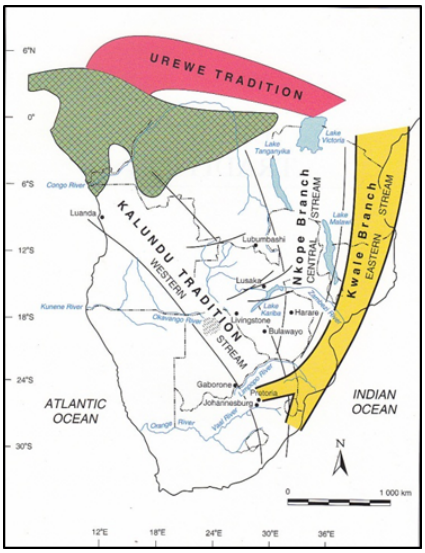

Fig 33. Spread of the Urewe Tradition in Southern Africa (Huffman 2007: 122)

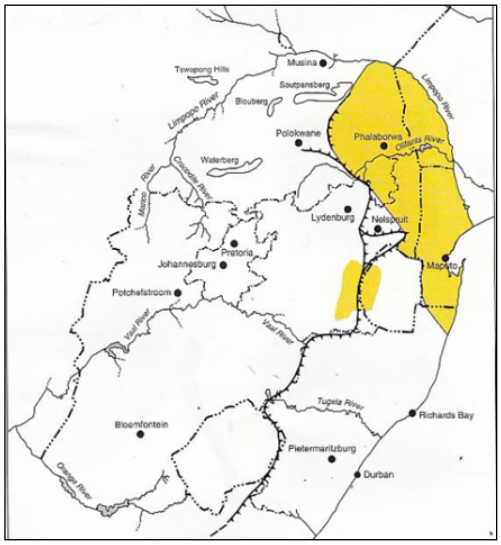

Fig 34. Matola (Silver Leaves) Facies of the Urewe-Kwale Tradition (Huffman 2007: 123)

4.5.2. 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. Around Mokopane it is associated with evidence of pre-colonial mining, metal production and large habitation sites that are usually located in the lowlands adjacent to syenite kopjies described above

4.6. Historical Context

The project area is located 16km north west of Mokopane town in the Limpopo Province. This town was established by the Voortrekkers and named Potgietersrus after the slain Voortrekker leader Piet Potgieter in the late 1800s. The name was changed to Mokopane in 2003 in honour of King Mgombane Kekana who resided on the land and ruled the area before he was over-thrown and killed by the Voortrekkers. A monument commemorating the Ndebele's murder of Voortrekker families was erected along the R101 near the entrance to Mokopane

The project area and the surrounding area is home to the Northern Ndebele speaking people, English, Afrikaans, Northern Sotho, and Shangaan speakers

Five kingdoms in the vicinity of the town are Kekana (Moshate), Langa (Mapela), Lebelo (Garasvlei) and Langa (Bakenburg) (Jackson 1969). Historical the area was inhabited by Chief Mapela of the Langa clan who died in 1825. The area was later occupied by Hans the son of Masebe 111(Jackson 1969:37-41). Prior to mining and massive residential developments in the Mapela area Jackson (1969) recorded historical and archaeological sites associated with the langa people, initiation schools and residential developments. The development of platinum mining in the area saw massive relocation of communities such as the Sekuruwe, GaPila, GaPuka and Sekhaolelo communities (Saccaggi, 2012).

The Arend Dieperink Museum portrays the history of the town, from the ape-man at Makapansgat, bushman drawings and early activities in the area up to the Anglo Boer War and recent times. The economy of Mokopane used to be basically farming, until opening up of Anglo American's platinum mine. Currently the mines are one of the biggest contributors to the economy of the area and entire country.

The Mogalakwena area, like most of Limpopo region has potential to yield Stone Age period sites (also see Deacon and Deacon, 1997). The historic and archaeologically significant Makapansgat Caves are situated 15 km north of the town. One of the most notable archaeological and historical sites in the country is found at Makapan's Valley, 15 km north of the town. The sediments, fossils, bones and artefacts found in the caves in the valley preserve a unique record of hominid habitation and evolution dating back 3,3 million years. The valley that has stood at the frontier of palaeontological and archaeological research for much of the twentieth century has been declared a National Heritage Site.

The Iron Age of the Limpopo region dates back to the 5th Century AD when the Early Iron Age (EIA) proto-Bantu-speaking farming communities began arriving in this region, which was then occupied by hunter-gatherers. These EIA communities are archaeologically referred to as the Kwale branch of the Urewe EIA Tradition (Huffman, 2007: 127-9). The Iron Age communities occupied the foot-hills and valley lands introducing settled life, domesticated livestock, crop production and the use of and valley lands introducing settled life, domesticated livestock, crop production and the use of iron (also see Maggs 1984a; 1984b; Huffman 2007). Alongside the Urewe

Tradition was the Kalundu Tradition whose EIA archaeological sites have been recorded along the Limpopo region. Limpopo region is known for the famous golden rhino that was recovered from Iron Age settlement site of Mapungubwe in the Limpopo Shashi Valley, now a UNESCO World Heritage Site. The Limpopo region is also known for the Late Iron Age Great Zimbabwe Culture sites such as Thulamela and Dzata to the northeast, in the modern day Venda region.

The region was the centre of immigration and migration of different African groups some of which are ancestors of the contemporary Venda and Tsonga predominant in the region. Throughout the middle of the 1800s the region witnessed the Mfecane migrations and displacements linked to groups such as the Ndebele of Mzilikazi.

From the 1840s the Voortrekker began arriving in the flat lands foothills in the regions spreading north east into modern day Limpopo. They spread establishing settlements, which came to be settler towns such as Schoemansdale, Petersburg, and the Louis Trichardt across modern day Limpopo. They spread establishing settlements, which came to be settler towns such as Schoemansdale, Pietersburg, and the Louis Trichardt across modern day Limpopo. The Voortrekkers arrived in Limpopo regions in the shadow of the weakened African kingdoms and chiefdoms in the aftermath of the Mfecane. This effectively ushered in new era of colonial occupation by succeeding and British colonial administration through the last half of the 1800s and into the last 1900s. By 1850s the region witnessed the influx of more settler communities, which triggered settler wars between the African chiefdoms and the incoming Afrikaner settlers. Some of these colonial wars and battles lasted into Anglo-Boer wars of 1899-1902. The later effectively led to complete subjugation of African communities to settler administration starting as part of the ZAR of Transvaal. By 1850s the region witnessed the influx of more settler communities which triggered settler wars between the African chiefdoms and under the Union of South Africa in 1910, which eventually ended with the establishment of the new South Africa in 1994.

The proposed powerline route will fall within the Mogalakwena Local Municipality in Limpopo Province. The study area covers the area earmarked for the powerline development. The study area is highly transformed by open cast mining and

associated infrastructure as well as formal and informal human habitation typical of Limpopo Province. Accidental fires have also resulted in substantial degradation of Limpopo Province. Numerous access roads, dirt tracks and footpaths cut across the project area. Accidental fires have also resulted in substantial degradation of grasslands. Subsistence farming is a common part of the landscape.

The above forms the archaeological and historical context for the identification of heritage resources in the study area.

5. FINDINGS OF THE HERITAGE SURVEY

The heritage sensitivity of the property is summarised as follows:

5.1. General observations

Archaeological finds

No archaeological resources were recorded along the proposed powerline route. The area has also been heavily disturbed by mining activities and auxiliary infrastructure such as bulk water supply trenches and access roads. Although some sections of the site earmarked for the powerline development are heavily degraded from previous and current agricultural land use and from powerlines, main road developments and residential developments, the proposed section has low to medium potential to yield archaeological resources and probably previously unidentified burial grounds

5.2. The Stone Age

No Stone Age tools were found.

5.3. Late Stone Age

No Late Stone Age tools were found

5.4. The Early Iron Age

No sites dating to the Iron Age were found.

5.5. The Later Iron Age

No sites of the Later Stone Age period were found.

5.6. Burial grounds

No burial grounds exist in the powerline servitude nor were reported close to the servitude.

The field survey for the proposed powerline revealed that the affected villages have formal village cemeteries, which are clearly marked and protected. None of the

village cemeteries in the project area are likely to be affected by the proposed powerline development. Whether burial sites are known or not on record, from a heritage perspective, burial grounds and gravesites are accorded the highest social significance threshold.

They have both historical and social significance and are considered sacred. Wherever they exist they may not be tempered with or interfered with during any proposed development.
It is important to note that the possibility of encountering previously unknown human remains during subsurface earth moving works anywhere on the landscape is ever present. Although the possibility of encountering previously unidentified burial sites is low on the proposed Powerline route, should such sites be identified during subsurface construction work, they are still protected by applicable legislations and they should be protected

5.7. Historical and Built Environment

In general, historic sites are associated with colonial era white settlers, colonial wars, industrialization; recent and contemporary African population settlements, contemporary ritual sites dating to the last hundred years. However, recent historic period sites and features associated with the African communities, settler and commercial farming communities are on record in the general project area environment.

The survey recorded 3 old structure which are outside the proposed Powerline route (see figure 15-22). However, it should be noted that abandoned historic structures over 60 years old are automatically protected by the National Heritage Resources Act 25 of 1999. They should not be destroyed without the relevant permit from Limpopo Provincial Heritage Resources Agency. During this study no confirmable classified or significant historic sites that warrant mitigation or intervention were recorded.

5.8. Historical Monuments

There are currently no places along the powerline servitude that are listed on the National Heritage List or Provincial Heritage list. However, there are several local

private buildings, such as churches, that may not be interfered during the proposed development on account of them being more than 60 years old. Nonetheless, the proposed development will be an add development that takes into consideration already existing developments.

5.9. Cultural landscapes

The project area has established mining, rural and peri-urban settlements associated with the Mokopane area. However, none of these built up areas are affected in any significant heritage value by the proposed Powerline development. The powerline infrastructure will add to several modern built-up areas within the general cultural landscape around Mokopane and the landscape in general.

5.10. Scenic Routes, Sense of Place and Visual Concerns

The site can be accessed from Polokwane via N1 South or R101 South to Mokopane Town via the N11 west. The study area is visible from the regional and local main roads and it is an altered environment dominated by mining, built up areas and a newly established residential area within the broader Sekuruwe area. This represents a pre-existing visual detraction from the sense of place and scenic value from the road. However, it should be borne in mind that the proposed development is an in-situ development adding to existing developments within the area. Therefore, any possible visual impacts to the project area is less significant and would be of reduced concern given the observation that this concern is already overridden by existing impact.

5.11. Ranking of sites and Risk Assessment

	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. They must be protected.	0
2	Medium A	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. Footprint of	0

		early modern mining. Cultural Landscapes. These may be protected at the recommendations of a heritage expert.	
3	Medium B	Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented.	0
4	Low	Heritage sites which have been recorded, but considered of minor importance relative to the proposed development.	0
		TOTAL	**0**

5.12. Assessment of Impacts using the Heritage Impact Assessment Statutory Framework

Section 38 of the NHRA

Section 38 (Subsection 3) of the National Heritage Resources Act also provides a schedule of tasks to be undertaken in an HIA process:

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

No heritage sites or relics were found.

(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

There are no Grade I or Grade II sites.

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

N/A.

(i) 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

The supply of power to the mining area is critical for the growth and sustainable economic benefits to the area in general. It also has a potential to create more jobs in the area.

(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 will be adversely affected by the proposed development, the consideration of alternatives

N/A

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

In the event of discovery of other heritage resources during construction phase, the Provincial Heritage Resources Authority or SAHRA should be informed immediately and an archaeologist or heritage expert called to attend.

5.13. 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	Excavation of postholes
Extent of Impact	Posthole excavations can result in the damage and destruction of archaeological 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	If archaeological or other heritage relics are found during the construction phase, heritage authorities will be advised immediately and a heritage specialist will be called to attend.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

6. CONCLUSION AND RECOMMENDATIONS

In light of these findings it is recommended that the project goes ahead. As a standard precaution archaeological deposits are usually buried underground. Should archaeological artefacts or skeletal material be exposed in the area during construction, such activities should be halted, and the provincial heritage resources authority or SAHRA notified in order for an investigation and evaluation of the finds to take place.

7. REFERENCES

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

Deacon, H. J. and J. Deacon, 1999. Human Beginnings in South Africa. Cape Town.

Esterhuysen, A. 2009. Human skeletal and mummified remains from the AD1854 siege of Mugombane Limpopo South Africa. *Journal of Archaeological Studies*.

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

Jackson, A. O. 1969.*The Ndebele of Langa, Pretoria* : Department of Co-operation and Development.

Huffman, T. N. 2007. *A Handbook of the Iron Age.* Cape Town: UKZN Press

Killick, D., 1991. A tin lerale from Soutpansberg, northern Transvaal, South Africa. *South African Archaeological Bulletin* 46(154), 137-141.

Klapwijk, M., 1986. Some notes on the tuyères from smelting sites in the north-eastern Transvaal, South Africa. *The South African Archaeological Bulletin* 41(143), 17-21.

Matenga & Silidi, 2011. Phase I Heritage Impact Assessment in terms of Section 38 of the National Heritage Resources Act No 25/1999 for the proposed new Borutho Substation. Unpublished HIA Report

Mlilo, T. 2018. Phase I Archaeological and Heritage Impact Assessment Report in terms of Section 38 of the National Heritage Resources Act No 25/1999 for Proposed 2 x 16km 132kv powerlines in Mogalakwena Local Municipality of Limpopo Province. Unpublished HIA Report

Murimbika, M. 2012. Archaeological Impact Assessment Report for proposed Eskom Platrieef Powerline and Substation Project in Mogalakwena Local Municipality in Limpopo Province. Unpublished HIA Report.

Pikirayi, I. 2010. Tradition, Archaeological Heritage Protection and Communities in the Limpopo Province of South Africa. Organisation for Social Science Research in Eastern and Southern Africa (OSSREA).

Pistorius, J.C.C. 2015. A Phase I Heritage Impact Assessment study for the proposed Eskom Borotho Project between the Potgietersrust Substation and the proposed Borutho Substation in the Limpopo Province of South Africa

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

Saccaggi, B.D. 2012. Disenfranchised Heritage. Ancestral graves and their legal protection in South Africa. Wits. Johannesburg. Unpublished Master of Science Thesis.

SAHRA Minimum Standards for Archaeology and Palaeontological Impact Assessment.

Legislation and Policy

National Heritage Resources Act (No 25 of 1999)