



## **Nsovo Environmental Consulting**

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED CONSTRUCTION OF APPROXIMATELY 5.7 KM 50KV POWER LINE FROM ESKOM JUNO SUBSTATION TO THE PROPOSED NEW TRANSNET JUNO TRACTION FEEDER SUBSTATION LOCATED WITHIN THE JURISDICTION OF MATIZKAMA LOCAL MUNICIPALITY, WEST COAST DISTRICT. WESTERN CAPE PROVINCE.**

**September, 2014**

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## **DECLARATION**

### **ABILITY TO CONDUCT THE PROJECT**

MunyadziwaMagoma is a professional archaeologist, having obtained his BA degree in Archaeology and Anthropology at University of South Africa (UNISA), an Honours degree at the University of Venda (UNIVEN), and currently completing his MA at the University of Pretoria (UP). He is an accredited Cultural Resource Management (CRM) member of the Association for southern African Professional Archaeologists (ASAPA) and Amafa aKwaZulu-Natali. Munyadziwa is further affiliated to the South African Archaeological Society (SAAS), the Society of Africanist Archaeologists (SAfA), and the International Council of Archaeozoology (ICAZ). He has more than seven years' experience in heritage management, having worked for different CRM organisations and government heritage authorities. As a CRM specialist, Munyadziwa has completed well over hundred Archaeological Impact Assessments (AIAs) for developmental projects situated in several provinces of the Republic of South Africa. The AIAs projects he has been involved with are diverse, and include the establishment of major substation, upgrade and establishment of roads, establishment and extension of mines. In addition, he has also conducted Heritage Impact Assessments (HIAs) for the alteration to heritage buildings and the relocation of graves. His detailed CV is available on request.

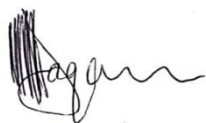
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### **INDEPENDENCE**

I, Munyadziwa Magoma, declare that this report has been prepared independently of any influence as may be specified by all relevant department, institution and organisation.

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## **EXECUTIVE SUMMARY**

### **Introduction and Methodology**

Vhubvo Archaeo-Heritage Consultant Cc has been requested by Nsovo Environmental Consulting to conduct Archaeological Impact Assessment for the proposed construction of approximately 5.7km 50Kv power line from Eskom Juno Substation to the proposed new Transnet Juno Traction Feeder Substation, which according to the demarcation board is within Matzkama Local Municipality of West Coast District in the Western Cape Province. The aim of the survey was to identify and document any archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed project.

The topographical of the proposed area is fairly flat and characterised by deflation bays, which has given rise due to the sandy landscape nature which is throughout the proposed area. Also characterising the proposed landscape is low vegetation.

Prior a physical survey which was conducted on the 4<sup>th</sup> of September 2014, a desktop study was undertaken through SAHRIS for previous Heritage Impact Assessments and Archaeological Impact Assessments conducted in the region, these include work by Dewar 2008, Halkett 1998, Halkett and Hart 1987, Hart 1996, 2007, Kaplan 2010, Orton 2013, Orton and Hart 2011, Orton and Webley 2013, Penn 1995, Robertshaw 1978, Webley 1992. From these researches, it became clear that archaeological materials are affluent in the southern region of Namaqua.

### **Restrictions and Assumptions**

As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once development resume. Although serious care was undertaken to attempt to cover the proposed line corridors and respective buffer, other section within the proposed area could not be surveyed adequately because of grass cover. In addition, the farm on which the proposed line is proposed is a “miniature game farm”, which abode Ostriches among others. On that note, caution was exercised to avoid any confrontation with these animals, which might cause stress to the body of the animal, and subsequently triggering an unnecessary fight or flight response. Therefore as it will be detailed below, it is recommended that this study should be followed by a pedestrian survey of the preferred pole footprints.

### **Findings and discussions**

The survey covered the area proposed for 50kV power line and Transnet Juno Traction Feeder Substation. By its nature, the power-line is limited to cause impact on pole positions, while the traction will significantly impact the entire proposed section. The Traction Feeder Substation is proposed on a land which is disturbed by activities related to the existing Transnet substation. While the line is

proposed on a section of land which is used for game farming, it has thus been noted that archaeological sites tend to remain stable under such activities. Although no significant archaeological materials were identified on the footprint of the proposed power-line and traction, Stone Age artefact was identified on the buffer zone of the power line. Although this do not indicate a site, it thus suggests the possibility of other unidentified artefacts/ and or sites in the area. In addition, considering that several Stone Age tools have been found in the south of Namaqualand (Kaplan 2010 and Orton and Hart 2011). Chances of encountering Stone Age sites in the area are considered moderate.

### **Recommendations and conclusions**

Archaeological materials are often located underground, and often disturbed/ exposed ones construction began. As a result, this AIA study cannot rule out the possibilities of encountering subsurface chance finds, and thus recommend the following:

- A final Cultural Heritage Walk down phase of the project area, once the final line route has been determined, such will ensure that the line and individual pylons do not impact on archaeological sites, if any.
- The walk down should specifically focus on the individual Pylon positions to determine if any pylons will impact on any archaeological material. This walk down should also contemplate on servitude and new access roads that will be established for this proposed development.

## TABLE OF CONTENTS

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<b>EXECUTIVE SUMMARY .....</b>	<b>iv</b>
<b>ACRONYMS AND ABBREVIATIONS.....</b>	<b>- 7 -</b>
<b>GLOSSARY OF TERMS.....</b>	<b>- 8 -</b>
<b>1. Introduction.....</b>	<b>Error! Bookmark not defined.</b>
<b>2. Sites location and description .....</b>	<b>- 12 -</b>
<b>3. Nature of the proposed project.....</b>	<b>- 17 -</b>
<b>4. Purpose of the AIA study .....</b>	<b>- 17 -</b>
<b>5. Methodology .....</b>	<b>- 17 -</b>
<b>6. Applicable heritage legislation.....</b>	<b>- 18 -</b>
<b>7. Degree of significance .....</b>	<b>- 20 -</b>
<b>8. Discussion of (Pre-) History of South Africa .....</b>	<b>- 21 -</b>
<b>9. Survey findings.....</b>	<b>- 24 -</b>
<b>10. Recommendations.....</b>	<b>- 24 -</b>
<b>APPENDIX 1: SITE SIGNIFICANCE.....</b>	<b>- 29 -</b>

## ACRONYMS AND ABBREVIATIONS

AIA	Archaeological Impact Assessment
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
MIA	Middle Iron Age
EIA	Early Iron Age
HMP	Heritage Management Plan
LSA	Late Stone Age
MSA	Middle Stone Age
ESA	Early Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
SAHRA	South African Heritage Resources Agency



## GLOSSARY OF TERMS

The following terms used in this Archaeology are defined in the National Heritage Resources Act [NHRA], Act Nr. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter (*Burra Charter*):

**Archaeological Material:** remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artifacts, human and hominid remains, and artificial features and structures.

**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** means all the processes of looking after a place so as to retain its cultural significance.

**Cultural Heritage Resources** (Same as **Heritage Resources** as defined and used in the National Heritage Resources Act, 1999 (Act No. 25 of 1999): Refer to physical cultural properties such as archaeological and palaeontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or graves and their associated materials; geological or natural features of cultural importance or scientific significance. **Cultural Heritage Resources** also include **intangible resources** such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

**Cultural significance:** means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

**Cultural Significance:** also encompasses the complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.





**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.

**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.

**Fabric:** means all the physical material of the place including components, fixtures, contents and objects.

**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 artifacts, human remains and artificial features and structures.

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

**In situ** material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

**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.

**Late Iron Age:** this period is associated with the development of complex societies and state systems in southern Africa.

**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.

**Place:** means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

**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.

**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).

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

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



## 1. Introduction

At the request of Nsovo Environmental Consulting, Vhubvo Archaeo-Heritage Consultant Cc conducted an Archaeological Impact Assessment (AIA) for the proposed construction of approximately 5.7km 50Kv power line from Eskom Juno Substation to the proposed new Transnet Juno Traction Feeder Substation, which according to the demarcation board is within Matzkama Local Municipality of West Coast District in the Western Cape Province. The survey was conducted in accordance with the SAHRA Minimum Standards for the Archaeology and Palaeontology. The minimum standards clearly specify the required contents of the report of this nature.

## 2. Sites location and description

The proposed development is located on Farms Zout Fontein 178 (Portions 3 and 13), Holrivier 179 (Portions 1, 2 and Remainder), Zoet Vlakte 189 Portion 2, Baklei Plaas 227 (Portions 28, 42 and Remainder), Baklei Plaas 278 (Portions 4, 5, 6 and Remainder), Vanrhynsdorp Rd 452 (Remainder) and Vanrhynsdorp Rd 1343 (Remainder) within the jurisdiction of Matzkama Local Municipality in the Western Cape Province. The area's topography is relatively even and sandy throughout.

### Summary of Project Location Details

Province:	Western Cape
Local Municipality:	Matzkama
District Municipality:	West Coast
Farm Names:	Zout Fontein 178 (Portions 3 and 13), Holrivier 179 (Portions 1, 2 and Remainder), Zoet Vlakte 189 Portion 2, Baklei Plaas 227 (Portions 28, 42 and Remainder), Baklei Plaas 278 (Portions 4, 5, 6 and Remainder), Vanrhynsdorp Rd 452 (Remainder) and Vanrhynsdorp Rd 1343 (Remainder)
Description of proposed development:	Establishment of Traction Feeder Substation and power line



The Proposed Construction of the 5.7km 50kV power line from Eskom Juno Substation to the proposed new Transnet Juno Traction Feeder Substation

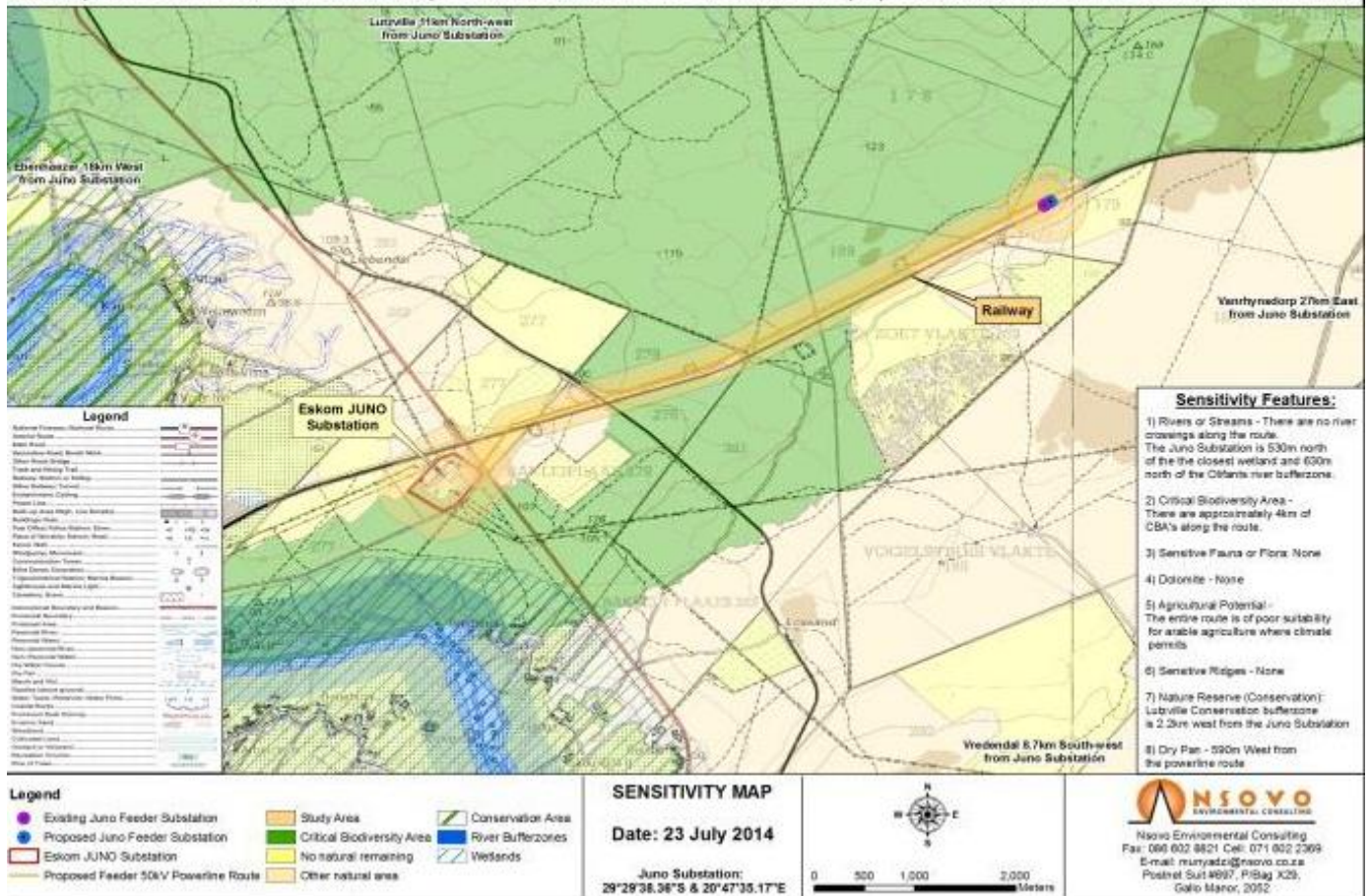
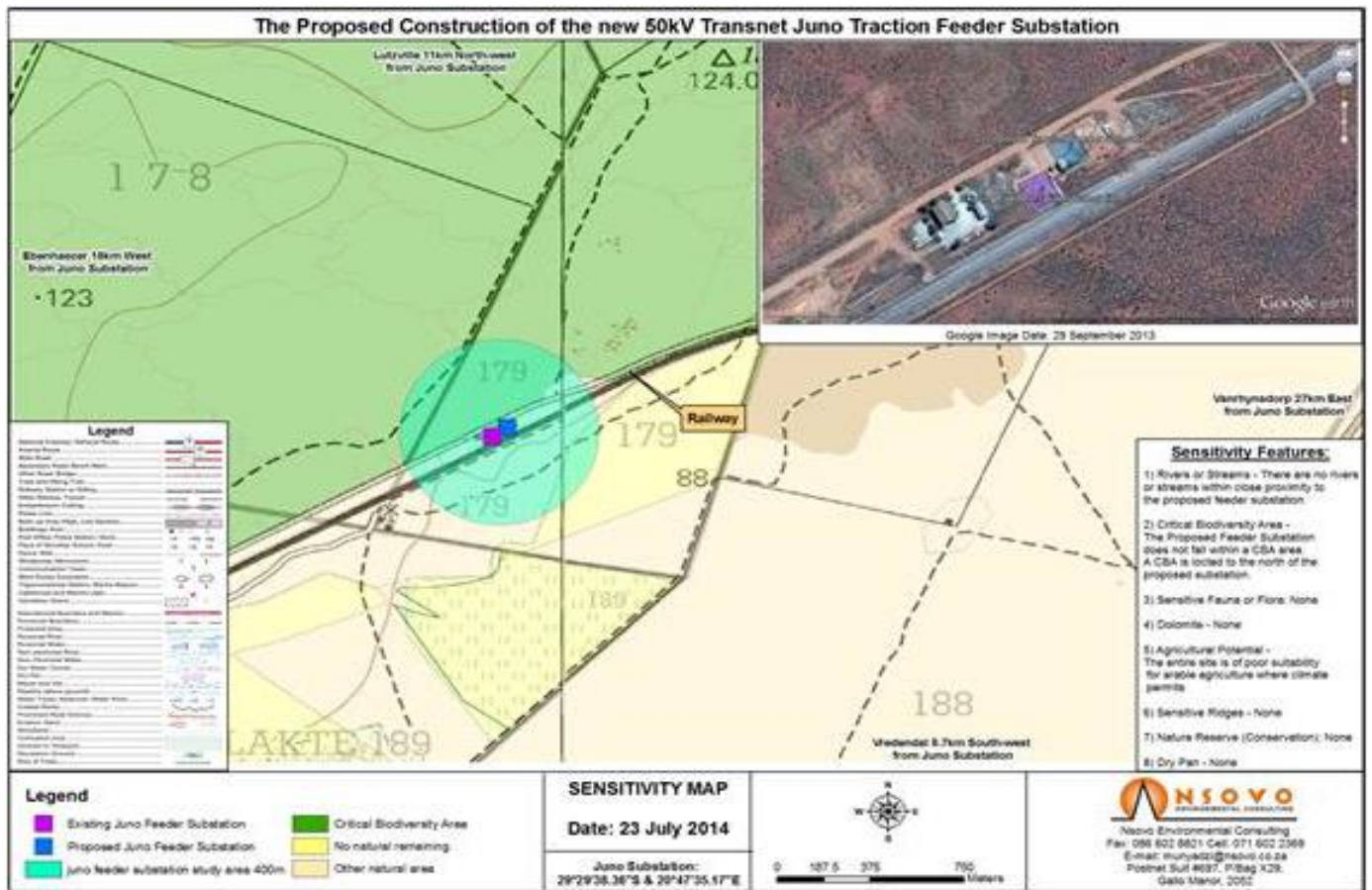


Figure 1: Topographical map detailing the proposed power-line development (Courtesy Nsovo Environmental).





**Figure 2:** Topographical map detailing the proposed traction feeder development (Courtesy Nsovo Environmental).





**Figure 3:** View of the area proposed for Juno Traction Feeder Substation.

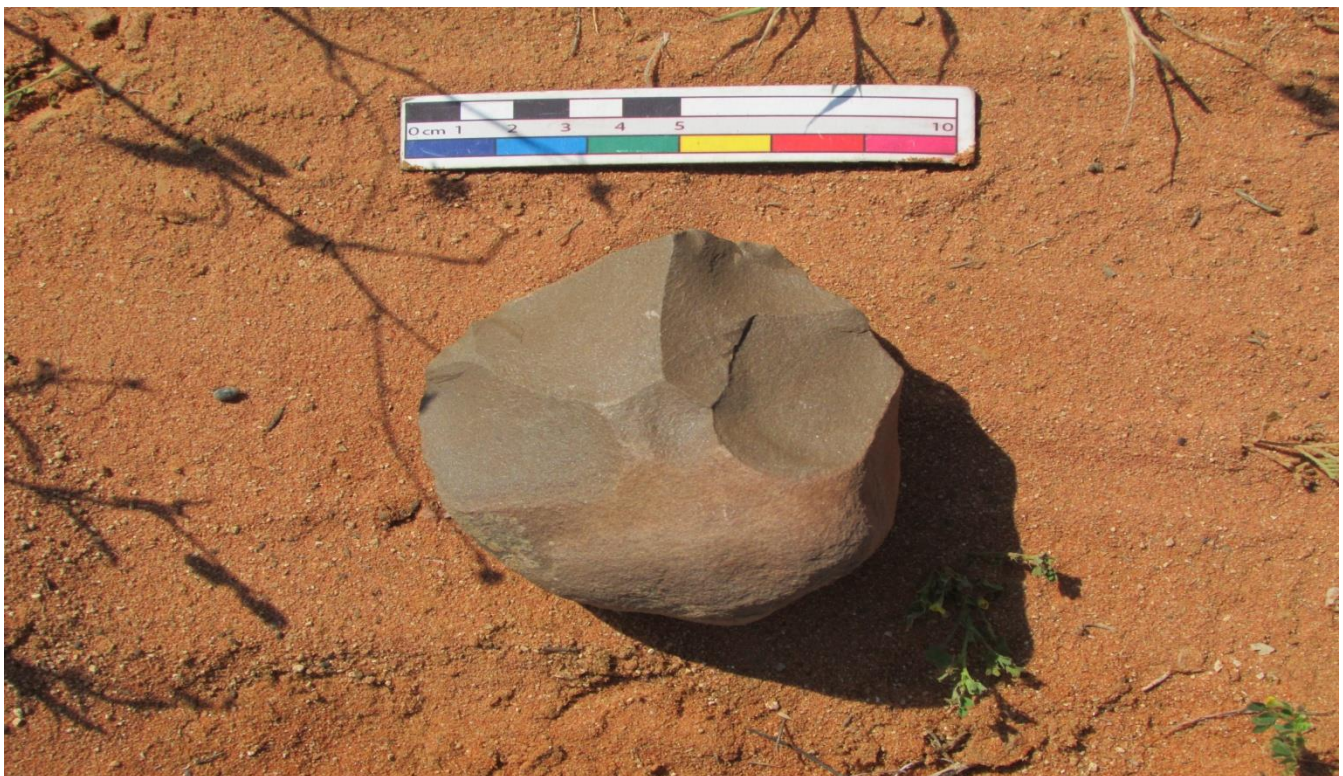


**Figure 4:** An over view of the area proposed for power line.





**Figure 5:** View of section of the proposed area where the power line will transverse.



**Figure 6:** View of the Stone Age tool which was noted on the buffer zone of the power line.





### 3. Nature of the proposed project

As part of the Transnet Orex expansion, Transnet Freight Rail (TFR) will be replacing Electrical and Diesel Locomotive with new energy efficient Electrical Locomotives. Consequently, to enable TFR to expand their operations without overloading and interruption of supply, Eskom Holdings SOC Limited proposes the upgrade of the Eskom Juno Substation and construction of approximately 5.7km 5kV of a power line from the Eskom Juno Substation to the proposed new 50kV Transnet Juno Traction Feeder Substation.

### 4. Purpose of the AIA study

The purpose of this Archaeological Impact Assessment (AIA) study was to conduct a heritage survey, enabling us to have an understanding of the archaeological, cultural, and general heritage sensitivity of the area proposed for establishment of traction federer and associates line. Impact assessments highlight many issues facing sites in terms of their management, conservation, monitoring and maintenance, and the environment in and around the site. Therefore, this AIA involves the following:

- Identification and recording of heritage resources that maybe affected by the proposed development,
- Providing recommendations on how best to appropriately safeguard identified heritage sites. Mitigation is an important aspect of any development on areas where heritage sites have been identified.

### 5. Methodology

#### *Desktop study and research*

The methodological approach is informed by the 2012 SAHRA Policy Guidelines for impact assessment. As part of this AIA, the following tasks were conducted: 1), literature review, 2), consultations with appointed consultants, 3) completion of a field survey and 4), analysis of the acquired data, leading to the production of this report.

#### *Physical survey*

A systemic survey of the area as indicated by Burke and Smith (2004) resulted in the maximum coverage of the area. This survey was conducted by an archaeologist from Vhubvo on the 4<sup>th</sup> of September 2014. The survey of the proposed area was surveyed on foot. The field survey did not include any form of subsurface inspection beyond the inspection of burrows, road cut sections, and the stream banks exposed by natural erosion forces. This is because a permit from the relevant heritage authority is required to disturb any heritage resources. In the same vein, no materials were collected.

#### *Documentation*



The general project area was documented. This documentation included taking photographs using cameras a 10.1 mega-pixel Sony Cybershort Digital Camera. Plotting of finds was done by a Garmin etrex Venture HC.

## 6. Applicable heritage legislation

Several legislations provide the legal basis for the protection and preservation of both cultural and natural resources. These include the National Environment Management Act (No. 107 of 1998); Mineral Amendment Act, 1993 (Act 103 of 1993); Tourism Act, 1993 (Act 72 of 1993); Cultural Institution Act, 1998 (Act 119 of 1998), and the National Heritage Resources Act, 1999 (Act 25 of 1999). Section 38 (1) of the National Heritage Resources Act requires that where relevant, an Impact Assessment is undertaken in case where a listed activity is triggered. Such activities include:

- (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; and*
- (c) *any development or other activity which will change the character of an area of land, or water -*
  - (i) *exceeding 5 000 m<sup>2</sup> in extent;*
  - (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 m<sup>2</sup> in extent; or*
- (e) *any other category of development provided for in 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.*

Section 3 of the National Heritage Resources Act, 1999 (Act 25 of 1999) lists a wide range of national resources protected under the act as they are deemed to be national estate. When conducting a Heritage Impact Assessment (HIA) the following heritage resources have to be identified:

- (a) *Places, buildings structures and equipment of cultural significance*
- (b) *Places to which oral traditions are attached or which are associated with living heritage*
- (c) *Historical settlements and townscapes*
- (d) *Landscapes and natural features of cultural significance*
- (e) *Geological sites of scientific or cultural importance*
- (f) *Archaeological and paleontological sites*
- (g) *Graves and burial grounds including-*
  - (i) *ancestral graves*
  - (ii) *royal graves and graves of traditional leaders*
  - (iii) *graves of victims of conflict*
  - (iv) *graves of individuals designated by the Minister by notice in the Gazette*
  - (v) *historical graves and cemeteries; and*
  - (vi) *other human remains which are not covered by in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983)*
- (h) *Sites of significance relating to the history of slavery in South Africa*
- (i) *moveable objects, including -*



- (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens*
- (ii) objects to which oral traditions are attached or which are associated with living heritage*
- (iii) ethnographic art and objects*
- (iv) military objects*
- (v) objects of decorative or fine art*
- (vi) objects of scientific or technological interest; and*
- (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).*

Section 3 of the National Heritage Resources Act (No. 25 of 1999) also distinguishes nine criteria for places and objects to qualify as ‘part of the national estate if they have cultural significance or other special value ...’ These criteria are the following:

- (a) Its importance in the community, or pattern of South Africa’s history*
- (b) Its possession of uncommon, rare or endangered aspects of South Africa’s natural or cultural heritage*
- (c) Its potential to yield information that will contribute to an understanding of South Africa’s natural or cultural heritage*
- (d) Its importance in demonstrating the principal characteristics of a particular class of South Africa’s natural or cultural places or objects*
- (e) Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group*
- (f) Its importance in demonstrating a high degree of creative or technical achievement at particular period*
- (g) Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons*
- (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; and*
- (i) Sites of significance relating to the history of slavery in South Africa.*

**Other sections of the Act with a direct relevance to the AIA are the following:**

**Section 34(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.*

**Section 35(4)** *No person may, without a permit issued by the responsible heritage resources authority:*

- *destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite*

**Section 36 (3)** *No person may, without a permit issued by SAHRA or a provincial heritage resources authority:*

- *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 formal cemetery administered by a local authority; or*
- *bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.*



## 7. Degree of significance

This category requires a broad, but detailed knowledge of the various disciplines that might be involved. Large sites, for example, may not be very important, but a small site, on the other hand, may have great significance as it is unique for the region.

### Significance rating of sites

(i) High

(ii) Medium

(iii) Low

This category relates to the actual artefact or site in terms of its actual value as it is found today, and refers more specifically to the condition that the item is in. For example, an archaeological site may be the only one of its kind in the region, thus its regional significance is high, but there is heavy erosion of the greater part of the site, therefore its significance rating would be medium to low. Generally speaking, the following are guidelines for the nature of the mitigation that must take place as Phase 2 of the project.

#### High

- This is a ‘do not touch’ situation, alternative must be sought for the project, examples would be natural and cultural landscapes like the Mapungubwe Cultural Landscape World Heritage Site, or the house in which John Langalibalele resided.
- Certain sites, or features may be exceptionally important, but do not warrant leaving entirely alone. In such cases, detailed mapping of the site and all its features is imperative, as is the collection of diagnostic artefactual material on the surface of the site. Extensive excavations must be done to retrieve as much information as possible before destruction. Such excavations might cover more than half the site and would be mandatory; it would also be advisable to negotiate with the client to see what mutual agreement in writing could be reached, whereby part of the site is left for future research.

#### Medium

- Sites of medium significance require detailed mapping of all the features and the collection of diagnostic artefactual material from the surface of the site. A series of test trenches and test pits should be excavated to retrieve basic information before destruction.

#### Low

- These sites require minimum or no mitigation. Minimum mitigation recommended could be a collection of all surface materials and/ or detailed site mapping and documentation. No excavations would be considered to be necessary.

In all the above scenarios, permits will be required from the South African Heritage Resources Agency (SAHRA) or the appropriate PHRA as per the requirement of the legislation (the National Heritage



Resources Act, no. 25 of 1999). Destruction of any heritage site may only take place when a permit has been issued by the appropriate heritage authority. The following table is used to grade heritage resources.

Level	Significance	Possible action
National (Grade I)	Site of National Value	Nominated to be declared by SAHRA
Provincial (Grade II)	Site of Provincial Value	Nominated to be declared by PHRA
Local Grade (IIIA)	Site of High Value Locally	Retained as heritage
Local Grade (IIIB)	Site of High Value Locally	Mitigated and part retained as heritage
General Protected Area A	Site of High to Medium Value	Mitigation necessary before destruction
General Protected Area B	Medium Value	Recording before destruction
General Protected Area C	Low Value	No action required before destruction

**Table 1:** Grading systems for identified heritage resources in terms of National Heritage Resources Act (Act 25 of 1999).

## 8. Discussion of (Pre-) History of South Africa and areas around the development site

### Introduction

South Africa has one of the longest sequences of human development in the world. The prehistory and history of South Africa span the entire known life span of human on earth. It is thus difficult to determine exactly where to begin, a possible choice could be the development of genus *Homo* millions of years ago. South African scientists have been actively involved in the study of human origins since 1925 when Raymond Dart identified the Taung child as an infant halfway between apes and humans. Dart called the remains *Australopithecus africanus*, southern ape-man, and his work ultimately changed the focus of human evolution from Europe and Asia to Africa, and it is now widely accepted that humankind originated in Africa (Robbins *et al.* 1998). In many ways this discovery marked the birth of palaeoanthropology as a discipline. Nonetheless the earliest form of culture known in South Africa is the Stone Age. This prehistoric period during which humans widely used stone for tool-making, stone tools were made from a variety of different sorts of stone. For example, flint and chert were shaped for use as cutting tools and weapons, while basalt and sandstone were used for ground stone. Stone Age can be divided into Early, Middle and Late, it is argued that there are two transitional period. The time frame used for Stone Age period is an approximate and differ from researcher to researcher (see Korsman and Meyer 1999, Mitchell 2002, Robbins *et al.* 1998).



### *Stone Age*

Although a long history of research on the Early Stone Age period of southern Africa has been conducted (Mason 1962, Sampson 1974, Klein 2000, Chazan 2003), it still remains a period where little is known about. These may be due to many factors which includes, though not limited to retrieval techniques used, reliance on secondary, at times unknown sources, and the fact that few fauna from this period have been analysed (Chazan 2003). According to Robbins *et al.*(1998) the Stone Age is the period in human history when stone was mainly used to produce tools. This period began approximately 2.5 million years ago and ended around 200 000 years ago. During this period human beings became the creators of culture and was basically hunters and gatherers, this era is identified by large stone artefacts, such as the pear-shaped hand-axe, cleavers and core tools (Deacon and Deacon, 1999). These tools were probably used to exploit large animals that had died from natural causes, and are usually found near sites where they were manufactured.

The Middle Stone Age overlap with the EIA and possibly began around 100 000 to about 200 000 years ago and extends up to around 35 000 years ago. This period is marked by smaller tools than in ESA. MSA people made a wide range of stone tools from both coarse- and fine-grained rock types, and included prepared cores, parallel-sided blades and triangular points hafted to make spears. Sometimes the rocks used for tools were transported from considerable distances, presumably in bags or other containers, as such tool assemblages from some MSA sites tend to lack some of the preliminary cores and contain predominantly finished products like flakes and retouched pieces. During this period there is also evidence of seeking shelters in caves by MSA people, suggesting enduring or semi-enduring settlement in caves, there possibility of making fire in some of these caves have also been suggested.

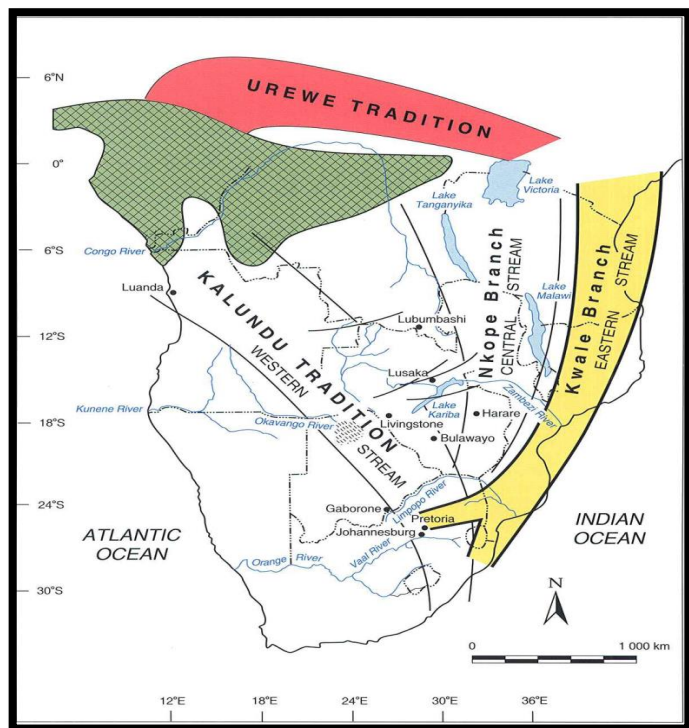
Microlithic Later Stone Age period began around 35 000 and extend to the later 1800 AD, during this period humans were classified as *Homo sapiens* which means this people had thinking capabilities equal to that of modern people. According to Deacon (1984), LSA is a period when human being refined small blade tools, conversely abandoning the prepared-core technique. Refined artefacts such as convex-edge scrapers, borers and segments are associated with this period, as well as large quantity of art and ornaments and the practice of purposeful burials with ornaments. The bearer of the rock art sites are probably the ancestors of the San people and are found throughout southern Africa, including Western Cape wherein paintings and engravings are eminent. Due to poor preservation, open air sites are mostly less as compared to rock shelters, which are chiefly well preserved.



*Iron Age*

The Iron Age is the name given to the period of human history when metal was mainly used to produce artefacts. Recently, there has been a debate about the use of the name. Other archaeologists have argued that the word “Iron Age” is problematic and does not precisely explain the events that happened in southern Africa, as such, the word farming communities has been proposed (Segobye 1998). Nonetheless, in southern Africa this period can be divided into two phases. Early (200 - 1000 A.D) and Late Iron Age (1000 - 1850 A.D). Huffman (2007) has indicated that a Middle Iron Age (900 - 1300 A.D) should be included. According to Huffman (2007:361), until the 1960s and 1970s most archaeologists had not yet recognised a Middle Iron Age. Instead they began the Late Iron Age at AD 1000. The Middle Iron Age (A.D. 900 - 1300) is characterised by extensive trade between the Limpopo Confluence and the East Coast of Africa. This has been debated, with other researchers, arguing that the period should be restricted to Shashe-Limpopo Confluence.

The Iron using peoples practiced agriculture and kept domestic animals such as dogs, cattle, goats, sheep and chicken. There is however evidence that sheep spread across southern Africa a few centuries before the arrival of Early Iron Age farmers (Sadr 2004). According to Huffman (2007) there were two streams of Early Iron Age (EIA) expansion in southern Africa, one referred to as the Urewe-Kwale Tradition (or the eastern stream) and another called the Kalundu Tradition (or western stream).



**Figure 7:** View of the spread of the Early Iron Age movements, namely Urewe-Kwale and Kalundu traditions in southern Africa (From Huffman 2007:122).



The Late Iron Age of the Namaqua Cape is closely linked to the arrival of the Kgalagadi, Rolong and Tlhaping peoples. According to Schapera (1952:6) the Kgalagadi, who are believed to have originated somewhere in the vicinity of the Great-Lakes of East-Africa, were the first group of the Tswana to have encountered the San in Cape and North West Province (Levitas 1983), marking the Late Iron Age of the region. However, Breutz (1989:1) argued that since from oral tradition it is stated that they originated from the area were “the sun stood on the other side”, it means they lived north of the equator, which would probably be southern Sudan, and not Great Lakes, which is on the Equator. Levitas (1983:168) argued that the name Kalahari was derived from the Kgalakgari people.

## **9. Survey findings**

The survey covered the area proposed for 50kV power line and Transnet Juno Traction Feeder Substation. By its nature, the power line is limited to cause impact on pole positions, while the traction will significantly impact the entire proposed section. The Traction Feeder Substation is proposed on a land which is disturbed by activities related to the existing Transnet substation. While the line is proposed on a section of land which is used for game farming, it has thus been noted that archaeological sites tend to remain stable under such activities. Although no significant archaeological materials were identified on the footprint of the proposed power-line and traction, a Stone Age artefact was noted on the buffer zone of the power line. Although this do no indicate an archaeological site, it does however suggest the possibility of other unidentified artefacts/ and or sites in the area.

## **10. Recommendations**

Archaeological materials are often located underground, and often disturbed/ exposed ones construction began. As a result, this AIA study cannot rule out the possibilities of encountering subsurface chance finds, and thus recommend the following:

- A final Cultural Heritage Walk down phase of the project area, once the final line route has been determined, such will ensure that the line and individual pylons do not impact on archaeological sites, if any.
- The walk down should specifically focus on the individual Pylon positions to determine if any pylons will impact on any archaeological material. This walk down should also contemplate on servitude and new access roads that will be established for this proposed development.





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**APPENDIX 1: SITE SIGNIFICANCE**

The following guidelines for determining site *significance* were developed by SAHRA in 2003. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

**(a) Historic value**

- Is it important in the community, or pattern of history?
- Does it have strong or special association with the life or work of a person, group or organization of importance in history?
- Does it have significance relating to the history of slavery?

**(b) Aesthetic value**

- Is it important in exhibiting particular aesthetic characteristics valued by a community or cultural group?

**(c) Scientific value**

- Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage?
- Is it important in demonstrating a high degree of creative or technical achievement at a particular period?

**(d) Social value**

- Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?

**(e) Rarity**

- Does it possess uncommon, rare or endangered aspects of natural or cultural heritage?

**(f) Representivity**

- Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects?
- What is the importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class?
- Is it important in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the



environment of the nation, province, region or locality?

