

A HERITAGE IMPACT ASSESSMENT STUDY FOR THE PROPOSED NDUMO RENTAL STOCK, NDUMO NORTH, JOZINI LOCAL MUNICIPALITY, UMKHANYAKUDE DISTRICT MUNICIPALITY, KWAZULU-NATAL, SOUTH AFRICA.



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DECLARATION OF INDEPENDENCE

This report has been compiled by Nkosinathi Tomose, Principal Archaeologist and Heritage Consultant for NGT Project & Heritage Consultants. The views expressed in this report are entirely those of the author and no other interest was displayed during the decision making process for the project.

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EXECUTIVE SUMMARY

NGT Projects & Heritage Consultants (Division: NGT Heritage Solutions) was appointed by Henwood & Nxumalo Consulting Engineers in terms of NEMA, 107 of 1998 (as amended & applicable EIA Regulations of 2010) as an independent CRM firm to conduct a HIA study (exclusive of Palaeontological desktop study), as required by Section 38 of the NHRA, No. 25 of 1999 (and other applicable legislations) for the proposed 150 Community Residential Units in a land covering approximately 3 hectares in Ndumo north, Jozini Local Municipality, Umkhanyakude District Municipality, Kwazulu-Natal (*refer to Appendix A- Project Description*).

The physical survey of the proposed development area yield was conducted on the 27 of September 2014 and it did not yield any heritage sites (archaeological, built environment & landscape, burial grounds and graves) or places of cultural significance such as places of prayer and worship within the proposed development footprint.

Based on the absence of any heritage or historic resources within the proposed development footprint, it is conclude that there are no heritage or cultural resources within the proposed development area.

Recommendations

- It is recommended that Amafa KwaZulu-Natali (the legislated provincial heritage authority) grant the project a Positive Review Comment and allow the development to proceed as planned.

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ABBREVIATIONS

Acronyms	Description
AIA	Archaeological Impact Assessment
AMAFA	Amafa KwaZulu-Natali
ASAPA	Association of South African Professional Archaeologists
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
DoE	Department of Energy
EIA practitioner	Environmental Impact Assessment Practitioner
EAP	Environmental Impact Practitioner
EIA	Environmental Impact Assessment
ESA	Early Stone Age
GIS	Geographic Information System
GPS	Global Positioning System
HIA	Heritage Impact Assessment
I&AP	Interested & Affected Party
KZNHA	KwaZulu-Natal Heritage Act
KZNHB	KwaZulu-Natal Heritage Bill
K.y.a	Thousand years ago
LSA	Late Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
MIA	Middle Iron Age
NERSA	National Energy Regulator of South Africa
NHRA	National Heritage Resources Act

NEMA	National Environmental Management Act
PHRA	Provincial Heritage Resources Agency
PSSA	Palaeontological Society of South Africa
ROD	Record of Decision
RDP	Reconstruction and Development Programme
PDAFP	Proposed Development Area Footprint
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency
SPV	Special Purpose Vehicle

TERMS & DEFINITION

Archaeological resources

This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- Features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in the change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or boards;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil

Heritage resources

This means any place or object of cultural significance

1. INTRODUCTION

1.1. Project Background

1.1.1. Developer and Summary of the Proposed Project

LTE Consulting was appointed by the KwaZulu-Natal Department of Human Settlements to develop approximately 150 Community Residential Units in a land covering approximately 3 hectares in Ndumo north, north east of the town of Jozini (*refer to Appendix A- Project Description*). The units are project name is Ndumo Rental Stock. LTE Consulting appointed Henwood & Nxumalo Consulting Engineers to implement the project and conduct the environmental management process which also entailed the completion of this HIA document. Ndumo is one of KwaZulu-Natal villages situated on the border of KwaZulu-Natal (KZN),

Swaziland (south-east of that country) and Mozambique (south of that country) (*Figure 4*). The developmental site is ensconced between the following villages: Phosheni (north-west), eMbangweni (north-east), Impala (south-west) and Ndumo central (south-east) (e.g. *Figure 2*).

1.1.2. Proposed Project Aims

The objective of the proposed project is to contribute to the development of approximately 150 Community Residential Units in a land covering approximately 3 hectares within Ndumo Village, within Jozini Local Municipality, KwaZulu-Natal Province – in line with the objectives of the KwaZulu-Natal Department of Human Settlement of providing affordable housing and other basic human rights to its people. In terms of the laws of the Republic, this project is also in-line with the Constitution of the Republic of South Africa, Act No.108 of 1996.

The project basic aim is, therefore, to contribute to the development of housing and associated infrastructure as described above.

1.1.3. Terms of Reference for the Appointment of Archaeologist and Heritage Specialist

Because of the nature and size of the proposed development -housing development and associated infrastructure exceeding a total area of 5000m² a need to conduct an EIA developed. In terms of the EIA Regulations of June 2010 (Government Notice 543-546 published in terms of the NEMA, No 107 of 1998) the construction of the proposed facilities is listed as an activity that requires environmental authorisation. This is because the project comprises development of 150 Community Units and bulk infrastructure such as water supply, electrification and sewer system to support the proposed Community Units. Undertaking an EIA process is therefore a requirement for the authorisation of this project. The current process comprises of an EIA and it involves the identification and assessment of environmental impacts through specialist studies, as well as public participation.

Henwood & Nxumalo Consulting Engineers were appointed by LTE Consulting (Pty) Ltd as project implementers and to conduct the environmental management process as lead Environmental Assessment Practitioner and to also manage the associated impact studies for the proposed housing development project. Henwood & Nxumalo Consulting Engineers

appointment NGT Projects & Heritage Consultants as an independent and lead CRM firm to conduct an HIA (exclusive of Palaeontological desktop study) for the proposed Ndumo Rental Stock development as part of specialists (inputs) impact assessment studies required to fulfil the EIA process and its requirements.

Nkosinathi Tomose, the Principal Archaeologist & Heritage Consultant for NGT Projects & Heritage Consultants, conducted the HIA study for the proposed Ndumo Rental Stock proposed in Ndumo north within Jozini Local Municipality, Jozini, Umkhanyakude District Municipality, Kwazulu-Natal, Republic of South Africa (*Figure 1*).

The appointment of NGT Projects & Heritage Consultants (as an independent CRM firm) is in terms of the KZNHA, No. 10 of 1997 (at a provincial level), the NHRA, No. 25 of 1999 (as amended), the NEMA, No.107 of 1998 (as amended & the applicable 2010 Regulations), as well as other applicable legislations and bills such as the KZNHB of 21 February 2008.

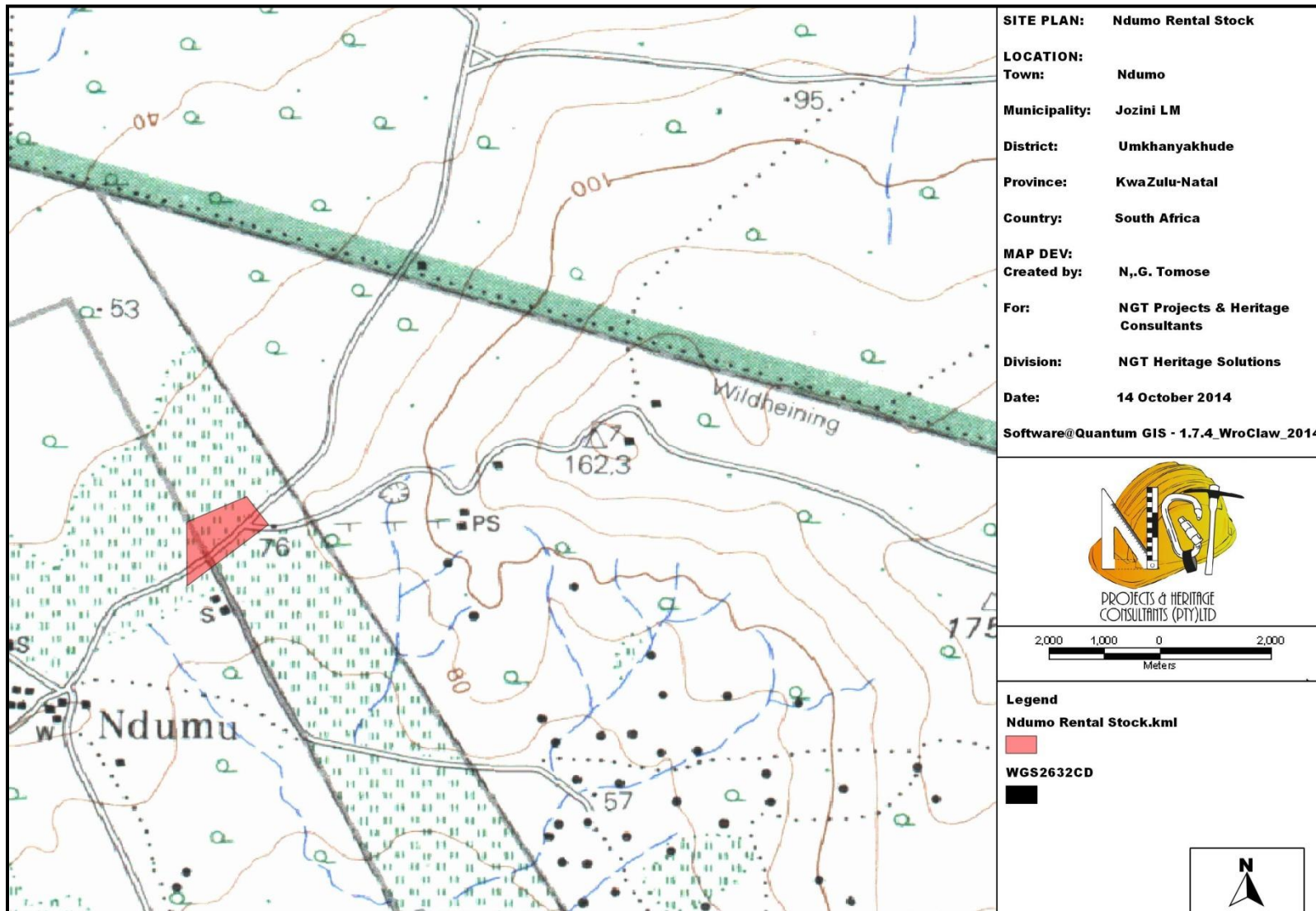


Figure 1 –Location of Ndumo Rental Stock development site, Jozini Local Municipality, Umkhanyakude District Municipality, KwaZulu-Natal.

2. BACKGROUND OF THE STUDY AREA

2.1. Description of the affected environment

Table 1 – Description of the affected environment of the proposed Ndumo Rental Stock development.

<ul style="list-style-type: none"> • <i>Location</i> 	<ul style="list-style-type: none"> • Ndumo is located on the northern border of South Africa with Mozambique (north of Ndumo) and Swaziland (north east of Ndumo) in Jozini Local Municipality, within Umkhanyakude District Municipality, KwaZulu-Natal Province (Figure 4).
<ul style="list-style-type: none"> ▪ <i>Surrounding Towns/Villages</i> 	<ul style="list-style-type: none"> • The study area is ensconced between Phosheni (north-east), eMbangweni (north-east), Impala (south-west) and Ndumo central (south-east) (Figure 2).
<ul style="list-style-type: none"> ▪ <i>Land Uses in and around the study area</i> 	<ul style="list-style-type: none"> • Residential, government and farming (Figure Figure 3)
<ul style="list-style-type: none"> ▪ <i>Land Owner(s)</i> 	<ul style="list-style-type: none"> • Ndumo Local Municipality and private landowners
<ul style="list-style-type: none"> ▪ <i>Current Conditions (on site)</i> 	<ul style="list-style-type: none"> • Disturbed landscape – partly vegetated and cleared vegetation (Refer to Figures 7-10)
<ul style="list-style-type: none"> ▪ <i>Applicant</i> 	<ul style="list-style-type: none"> • Henwood & Nxumalo Consulting Engineers on behalf of LTE Consulting and Department of Human Settlements Kwazulu-Natal
<ul style="list-style-type: none"> ▪ <i>Proposed Development</i> 	<ul style="list-style-type: none"> • Application for the proposed 150 Community Units on 3 ha land to be known as Ndumo Rental Stock.
<ul style="list-style-type: none"> ▪ <i>Access</i> 	<ul style="list-style-type: none"> • Existing national, provincial and local roads, routes and human foot paths (Figure 3): • From Durban through the N2 to the town of Jozini. • From the town of Jozini, pass Jozini Dam local roads are found.
<ul style="list-style-type: none"> ▪ <i>Defining natural features</i> 	<ul style="list-style-type: none"> • The study area is generally flat with invasive agave type plants – indicators of past disturbances (Figure 7-10)
<ul style="list-style-type: none"> ▪ <i>Zoned for</i> 	<ul style="list-style-type: none"> • Residential – proposed community housing units

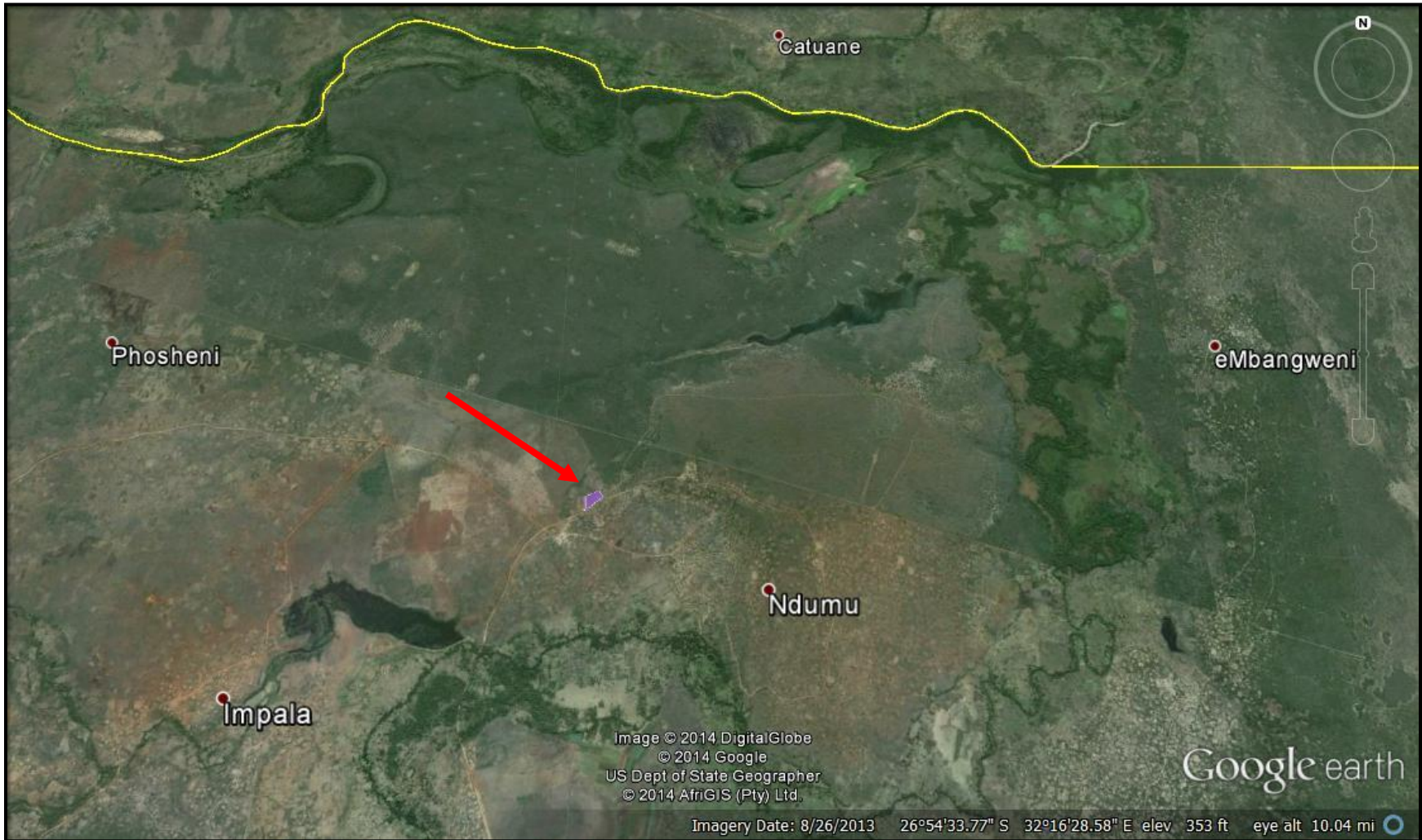


Figure 2 – Google Earth photo showing the proposed development area in relation to surrounding villages or rural towns.



Figure 3 - Location of the development footprint in relation to central point in Ndumu – Note the local dirt roads.



Figure 5 – Project Development Notice Board.



Figure 6- Pictures taken on the eastern end of the development footprint showing the direction to Ndumo Game Reserve and St Philips Primary School Ndumo.



Figure 7 – Pictures of the proposed development site. Note the level of disturbance and the vegetation clearing.



Figure 8 – Agave type plants found within the proposed development footprint. Note the area in which they have been cleared.



Figure 9 – More agave type plans on the eastern and northern section of the site.



Figure 10-Picture showing the southern and central (as marked by the car) of the site.

2.2. Desktop Study: Archaeological & Historical Heritage of KwaZulu-Natal:

The archaeology of KwaZulu-Natal spans three archaeological periods: the Stone Age, Iron Age and Historical/Colonial period. The early periods in Stone Age archaeology of the region are recorded amongst others in Sibudu Cave on the coast of KwaZulu-Natal and which shows evidence for early forms of cognitive human behavioural patterns in the Middle Stone Age of South Africa some 40 000 years BP (e.g. Wadley, 2005; Wadley *et al*, 2004; Wadley, 2001). In close proximity to Ndumo, Border Cave is known Stone Age material culture (Fourie, 2003).

The caves, plains, valleys and hills of KwaZulu-Natal are known have once been occupied by the San people. Evidence for this includes stone artefacts and an abundance of rock art, predominantly in the form of rock paintings in areas such as the Giants Castle and Kamberg in the Drakensburg Mountains located south and east of the province of KwaZulu-Natal (e.g. Vinnicombe).

The second period of occupation in KwaZulu-Natal was during the Early and Middle Iron Age; an occupation of the KwaZulu-Natal region by the Bantu speakers who migrated from as far as the Great Lakes regions of Congo and Cameroon. Existing evidence dates the Iron Age in southern Africa to the first millennium AD (e.g. Huffman, 2010, 2007). The site of Mzonjani, 15 km from Durban is the oldest known Iron Age site in KwaZulu-Natal, dating to the 3rd Millennium AD (Huffman, 2010). In terms of language group's distribution the area of Ndumo falls within the Eastern Stream known as the Kwale Branch (Huffman, 2007). The Mzonjani facies is the type of pottery most likely to be found within the study area. This pottery is characterized by punctures on the rim and spaced motifs on the shoulder (see *Figure 11*).

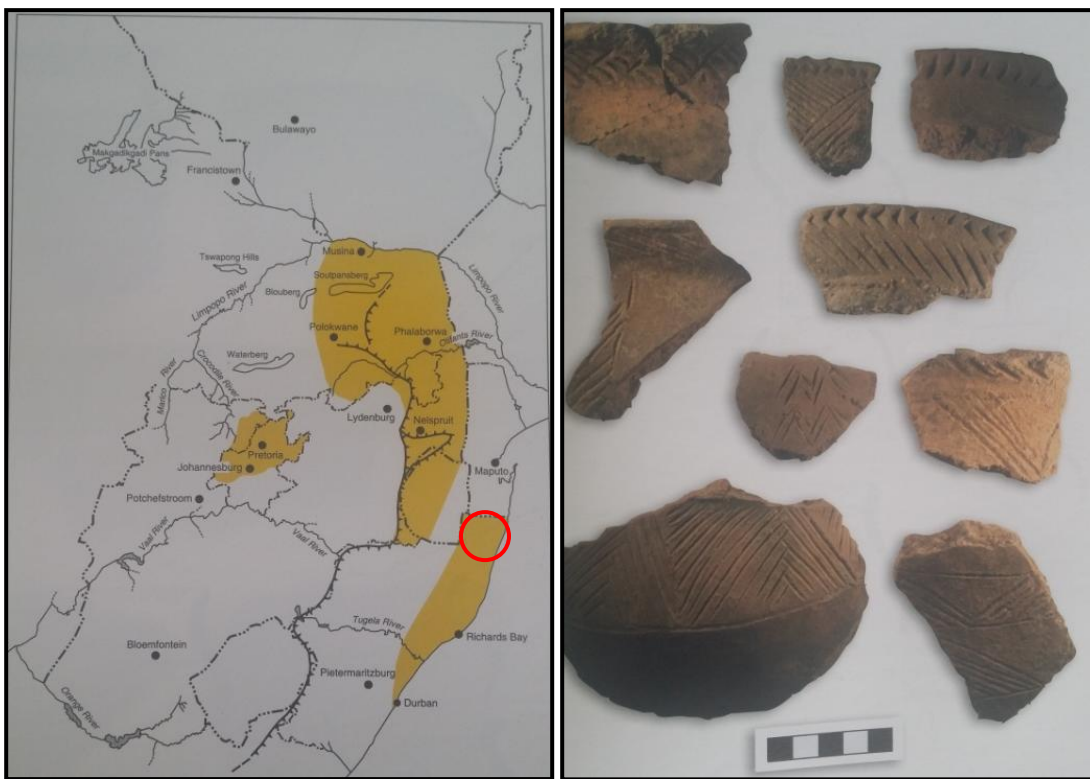


Figure 11- Mzonjani facies distribution within the study area (red circle) (Huffman 2007).

The KwaZulu-Natal was occupied by the Zulu people by AD 1050 (Huffman, 2010, 2007). Approaches used to arrive at these conclusions include historical accounts, oral traditions, the study of linguistics, as well as anthropological and archaeological data (as presented through material culture and artefacts). The archaeological evidence of the Iron Age people in the region is represented through distinct ceramic traditions, stone walls and other structural features such as grain bins and hut floor remains, kraal remains, vitrified cattle dung (sheep

and goat), iron implements, slugs, bellows and furnaces. The area that was occupied by the Nguni speaking group of the Eastern Bantu language stream is characterised by settlement patterns defined as the Central Cattle Pattern (CCP) (Huffman, 2010, 2007). The earliest known type of stonewalling that characterises this settlement pattern (C.C.P) in the region (KZN) is known as Moor Park, which dates from the 14th to 16th Centuries AD (Huffman, Whitelaw, Davis 1974) (*Figure 12*). This type of stonewalling can be found in defensive position on hilltops in the Midlands of KZN (Huffman, 2010 & 2007).

Archaeologists have concluded that the function of these structures was to serve mainly defensive purposes - the site of Moor Park is "located on the spurs and ends of hills, stone walls cut the settlement off from remaining terrain perimeter walls enclose about two thirds of the settlement, leaving the back free" (Huffman, 2007). However, it has to be noted that the CCP and other forms of Iron Age stonewalling features are not restricted and/or endemic to the eastern Bantu Speaking language group and/or the Nguni to whom the Zulu people belong. Huffman's (2007) statement validated this, "Iron Age stonewalling occurs over much of Southern Africa". He goes on to say, "as the most visible sign of agro-pastoral settlement, there are several classifications, mostly for specific areas and few for larger regions". It must also be noted that these stonewall structures were not the most dominant and/or preferred form of building for the KwaZulu-Natal Nguni's even though some are dated to have been also built during the times of war between the Colonial powers and the Zulus (for example, during the Anglo-Zulu War).

In KwaZulu-Natal, the most dominant and preferred form of Iron Age structures are the 'beehive huts'- documented in many of historical records dating as far back as the colonial times (*Figure 13-14*). This presents a challenge to the archaeological study of Iron Age in the province. Huffman (2007) argues that the archaeology of the KwaZulu-Natal is not as prominent as is in other parts of the country because most of the structures were built of thatch material that do not preserve well. The same is true for their ceramic traditions (e.g. *Figure 11*). The type site of Moor Park therefore presents a unique view of the Iron Age in this region and is worth a mention in this report.

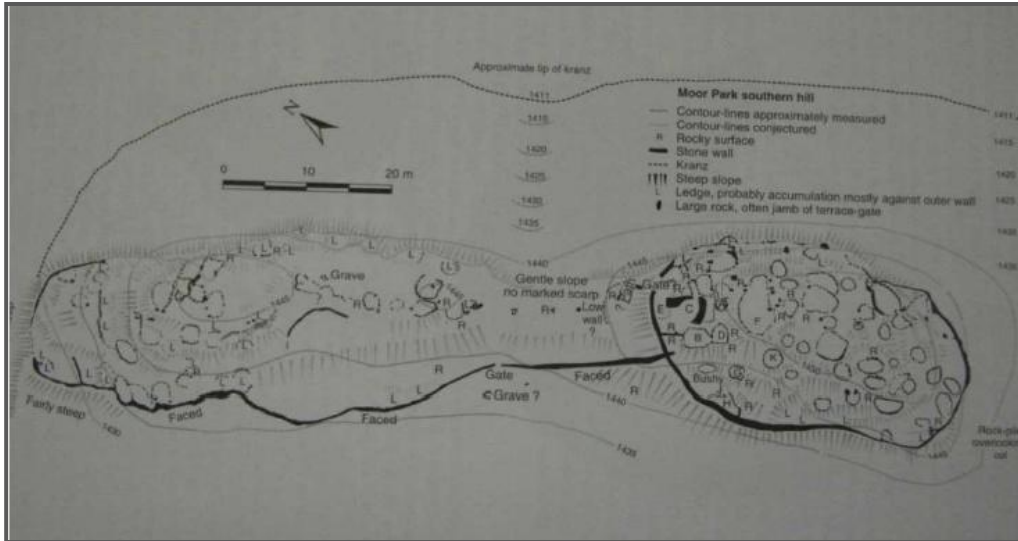


Figure 12-Site of Moor Park; picture ©T. N. Huffman (2007) to illustrate the C.C.P stonewalling (see also Davies 1974 from which the picture was initial taken).

The third phase of occupation of this region was in the Late Iron Age period – a period just before the contact with the colonial settlers. In KwaZulu-Natal and other parts of southern Africa this period was characterised by a variety of expansionists’ battles fought by different chiefdoms, culminating in the pre-colonial southern African war called *Imfecane* (Ommer-Cooper, 1993). In this province, the *Imfecane* it started in early 1800’s when the ama-Zulu were still under the kingdom of Senzangakhona (Ommer-Cooper, 1993; Knight 1998). In KZN, the *Imfecane* brought about many battles between and within the different local Zulu chiefdoms and the Swazi’s which are located west of the current study area (e.g. Figure 4).

In other parts of the country the *Imfecane* also affected the Koni (Limpopo Province), the Tswana by the Ndebele ka-Mzilikazi (interior regions of the country) and the amaMpondo, amaHlubi, abaThembu and amaXhosa in the Eastern Cape regions (Wright, 1991). The *Imfecane* featured very prominent in KwaZulu-Natal during the reign of King Shaka KaSenzangakhona (Ommer-Cooper, 1993). Some of the battles associated with the Mfecane go as far as Zimbabwe with the movement of Mzilikazi, also argued to have been displaced by the Trek Boers in the central regions of the country such as the former Transvaal (Gauteng and North West Provinces).

In Zululand our current region of study within the KwaZulu-Natal Province - one of the bigger local chiefdoms that was conquered was the Ndwandwe chiefdom of Zwide kaLanga which were situated north of Shaka's territory around the modern day kwaNongoma (Knight, 1998). Shaka managed to achieve his ideal kingdom by strategically expanding/extending the traditional *amabutho* system.

The *amabutho* were the brigade of young men of similar age gathered together for a period of national service (Laband & Thompson, 2000; Torlage & Watt, 1999; Knight, 1998; Ommer-Cooper, 1993; Wright, 1991). The *amabutho* were quartered at large royal homestead, *amakhanda* (Figure 14) - which were sited strategically above the surrounding country to guard against both outside attack and internal dissension like the site of Moor Park discussed above. During the times of need, *amabutho* would be organised into *impi* to fight and protect the Zulu kingdom. The *amabutho*, organised into *impi*, would also be sent out to attack and take over rival chiefdoms that were opposed to King Shaka's rule and in the process incorporating them under his monarchy.

King Shaka's reign as the Zulu King did not last long as he was assassinated by his younger brothers in September 1828. One of them, Dingane KaSenzangakhona later became the King. It has been argued that by the time of his assassination, Shaka had not yet fully managed to assume and reconcile into his kingdom all the local Zulu chiefdoms: "much chiefdom within the kingdom were still unreconciled to Zulu rule, while Zulu influence south of Thukela [was still] patchy" (Knight, 1998: 14). The area south of the Thukela River (Natal) was to some degree not in King Shaka's hold. He did not manage to assimilate all the chiefdoms south of uThukela under his rule and this had negative ramification to the Zulu kingdom for the years to come. King Shaka moved the royal homestead to KwaDukuza in Stanger, south of upper Thukela River before his assassination by Dingane (and Mpande) who later re-relocated and rebuilt it at eMgungundlovu. UMgungundlovu is 'The Place Surrounding the Elephant' in the emaKhosini valley where King Shaka and King Dingane's forefathers are buried. The moving of the royal homestead by both Shaka and Dingane presents an interesting 'thesis' into the internal dynamics and politics of the Royal House and possibly one of the reasons for the assassination of King Shaka by his brothers. One important reason for the relocation of the royal homestead back to uMgungundlovu- north of the upper Thukela River was the growing influence of the white community at Port Natal (settlers) and the encroaching Trek Boers who crossed uKhahlamba Mountains into Natal in the 1837 (Knight, 1998). The period of encroachment of first Natal, then Zululand represents a fourth phase of settlement or occupation of KwaZulu-

Natal. Before it became open to most people during the Union (1910-1961), Nationalist rule (1947-1994), and democratic South Africa (1994 - current)



Figure 13-Pre-industrial Zulu village: beehive huts, note homestead built using thatch material (Colonial time picture) © Laband & Thompson, 2000.

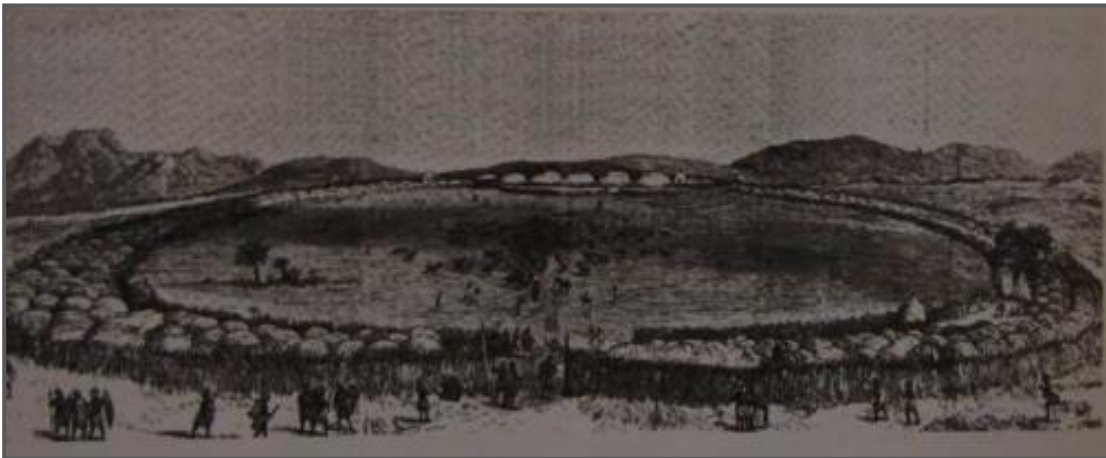


Figure 14 - An illustration of iKhanda or the royal homestead © Laband & Thompson, 2000

2.3. The Natal and Zululand: A Colonial Time Account of KwaZulu-Natal

The border between the former Natal colony and Zululand developed as a result of political influences between the settlers, the Afrikaners and the Zulu people.

The area located north of Upper Thukela (uThukela) River was under the former Zululand and the area south was under the Afrikaner and settler communities. The territorial border between Zululand and Natal developed in the late 1830s. Following the demarcation of the two territorial boundaries - Zululand became the area between the Upper Thukela River, Swaziland and Mozambique. This is where the current study area falls within. Natal was the area south of the Upper-Thukela River. Natal came into existence when, "the south-eastern seaboard had remained unknown to the European world until Christmas Day 1497, when the Portuguese explorer, Vasco da Gama, had noted its existence in his log as he sailed around the Cape and up the east coast of Africa, searching for a route to the Indies. He christened it *Terra Natalis*, in honour of the birth of Christ, and for the centuries Natal was used to describe the country south of uThukela" (idem: 15). The map below shows the historic boundary between Zululand and Natal as divided by the Thukela River (*Figure 18*). Other interesting features that define these former geographic places are the mountains - in the north the Lebombo Mountains are found, while in the south the Drakensberg Mountain range forms the dominant landmark features.

The Lebombo Mountains, which are in close proximity to the site, are known for the death of King Dingane kaSenzangakhona (see *Figure 17*). Dingane, then King of the Zulus, died in February 1840 under the defeat of his brother Mpande with the assistance of the Voortrekkers in the battle on the Maqongqo Hills. Mpande had initially assisted Dingane to assassinate Shaka. It is believed that after the attack he fled to the Lebombo Mountains where he met his death (*SAHO 19 September 2014*). His grave is found in the Hlatikulu area in Jozini not far from the study area.



Figure 15- the tombstone of king Dingane kaSenzangakhona (www.google/image.co.za)

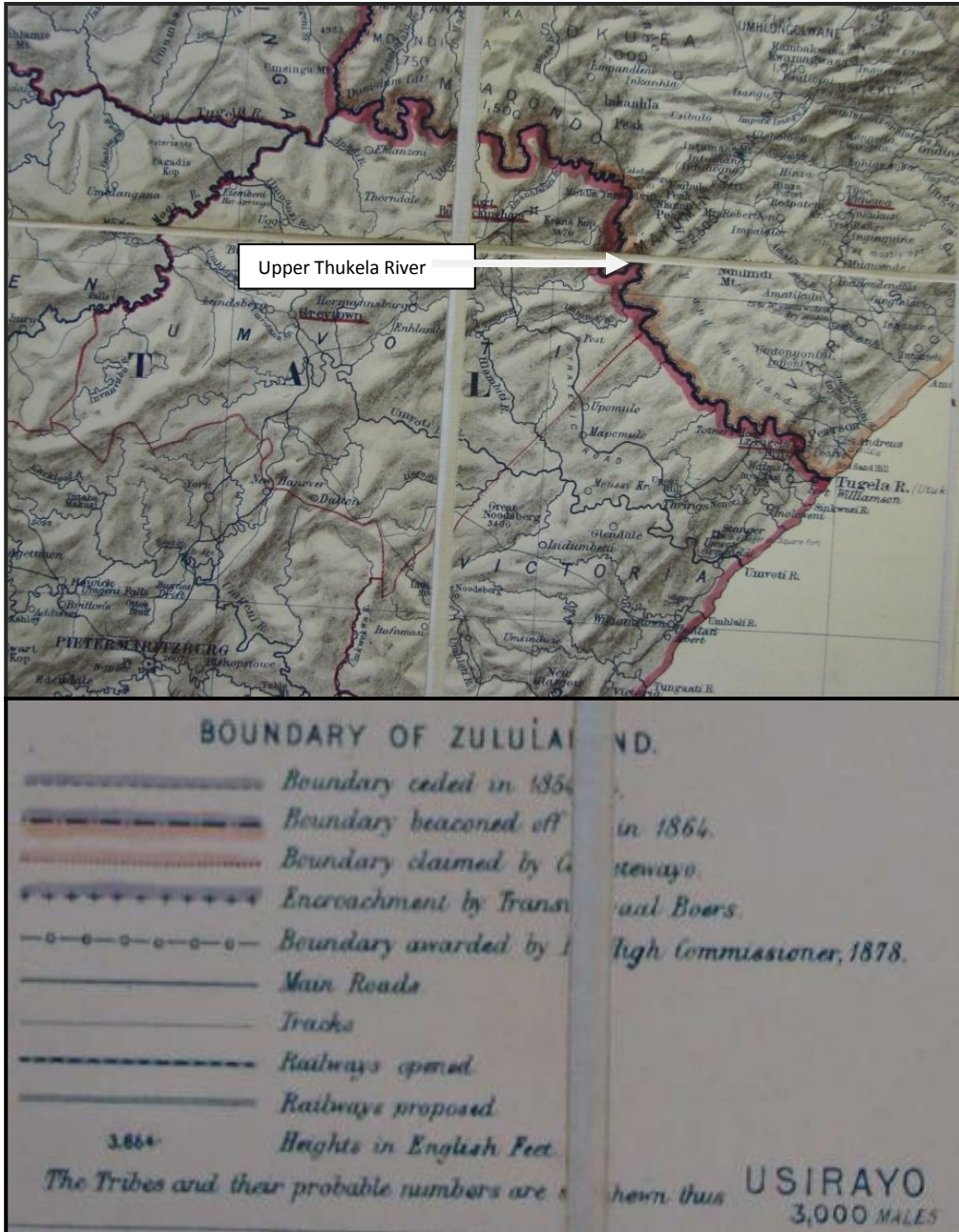


Figure 16- Map showing the Natal (south of Thukela River) and Zululand (north of Thukela River) Boundary as well as the boundary proclaimed by King Cetshwayo in 1870s when he became a King. The first official proclamation of the boundary dividing Natal and Zululand took place in 1854 (Note the map legends). Stanford's Large Scale Map of Zulu Land with adjoining parts of Natal, Transvaal and Portuguese Africa, March 4th 1879 © Map Archives, Cullen Library, University of the Witwatersrand, Johannesburg, South Africa.

3. METHODOLOGY

3.1. Legislative Requirements

The NEMA, No. 107 of 1998 stipulated that for any development in South African to be granted permission to go ahead an assessment of the potential impacts of the proposed development on both the natural and cultural environment need to be conducted. As such, this HIA fulfils the requirements of NEMA and is conducted in-line with Section 38 (1) of the NHRA, No. 25 of 1999 and the KwaZulu-Natal Heritage Act, No. 10 of 1997 (various sections as applicable) as well as applicable 2010 EIA Regulations.

3.2. Methodology

This chapter outline the methodologies used in conducting the study. This HIA report was compiled by Nkosinathi Tomose, Principal Archaeologist and Heritage Consultant for NGT Projects & Heritage Consultants. It is conducted for 150 Community Units housing proposed for at Ndumo Village, Jozini Local Municipality, within uMkhanyakude District Municipality, KwaZulu-Natal Province.

3. 2.1. Step I – Literature Review (Desktop Phase):

- The background information of the proposed area of development following the receipt of appointment letter and sites KML file from the client. Sources used included, but not limited to published academic papers and HIA studies conducted in and around the region where the current development will take place.
- Map Archives - Historical maps of the proposed area of development and its surround were assessed to aid information about the proposed area of development and its surround.
- This also included a review and assessment of relevant environmental and heritage legislations, and Bills such as the KwaZulu-Natal Heritage Bill, 21 February 2008.

3.2.2. Step II – Physical Survey:

- The physical survey of Ndumo Rental Stock development footprint took place on the 27th of September 2014 and conducted by Principal of NGT Projects & Heritage

Consultants. The survey covered a 3 hectare area as provide in the project BID document and KML file.

- The objective of the survey was to locate and identify archaeological and heritage resources and/or sites within the Ndumo Rental Stock site and record them using necessary and applicable tools and technology.
- The physical survey was deemed necessary since the desktop phase (which included Google Earth Spotting of the affected village) yielded some information about the archaeology and history of the region in which Ndumo is located.
- The survey also paid special attention to disturbed and exposed layers of soils as such as eroded surfaces, areas with cleared vegetation because these areas are more likely to exposed or yield archaeological and other heritage resources that may be buried underneath the soil and brought to the earth surface by natural, animal and human activities.
- This involved the survey of the development footprint and dirty roads edges/sides were also inspected for possible Stone Age scatters as well as exposed Iron Age implements and other resources.
- The following technological tools were deemed important for documenting and recording located and/or identified sites:
 - Garmin GPS (i.e. Garmin 62s) – to take Lat/Long coordinates of the identified sites and to track the site.
 - DELL aided with Garmin Basecamp Software, Google Earth – to plot the propose project footprint.
 - Mapping of the development footprint using Quantum GIS -1.7.4-WroClaw.
 - Shapefile provided by the client was used to map the project area
 - Samsung – to take photos of the affected environment

3.2.3. Step III – Data Consolidation and Report Writing:

- The final step involved the consolidation of the data collected using the various sources as described above.
- This involved the manipulation Shapefile/KML files through Quantum GIS 1.7.4-WroClaw.
- Assessing the significance and potential impact of the identified sites, discussing the finds, report writing and making recommendation on the management and mitigation measures of the identified sites and resources as well as the impact and influence of these sites and resources on the proposed development project and project area.

3.3. Assessment of Site Significance in Terms of Heritage Resources Management Methodologies

The significance of heritage sites was based on four main criteria:

- Site integrity (i.e. primary vs. secondary context)
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures)
 - Density of scatter (dispersed scatter)
 - Low - $<10/50\text{m}^2$
 - Medium - $10-50/50\text{m}^2$
 - High - $>50/50\text{m}^2$
- Uniqueness and
- Potential to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows:

- A - No further action necessary;
- B - Mapping of the site and controlled sampling required;
- C - No-go or relocate pylon position
- D - Preserve site, or extensive data collection and mapping of the site; and
- E - Preserve site
- Impacts on these sites by the development will be evaluated as follows:

Site Significance

The following site significance classification minimum standards as prescribed by the SAHRA (2006) and approved by the ASAPA for the SADC region were used for the purpose of this report.

Table 2: Site significance classification standards as prescribed by SAHRA

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	-	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction
Generally Protected C (GP.A)	-	Low Significance	Destruction

3.4. Methodology for Impact Assessment in terms of Environmental Impact Assessment Methodologies including Measures for Environmental Management Plan Consideration:

The Basic Assessment Methodology assists in evaluating the overall effect of a proposed activity on the environment. The determination of the effects of environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the environmental practitioner through the process of the Basic Assessment & Environmental Impact Assessment. The impact evaluation of predicted impacts was undertaken through an assessment of the significance of the impacts:

The Basic Assessment included:

- an indication of the methodology used in determining the significance of potential environmental impacts
- a description of all environmental issues that were identified during the environmental impact assessment process
- an assessment of the significance of direct, indirect and cumulative impacts in terms of the following criteria:
 - the *nature* of the impact, which shall include a description of what causes the effect, what will be affected and how it will be affected
 - the *extent* of the impact, indicating whether the impact will be local (limited to the immediate area or site of development), regional, national or international
 - the *duration* of the impact, indicating whether the lifetime of the impact will be of a short-term duration (0–5 years), medium-term (5–15 years), long-term (> 15 years, where the impact will cease after the operational life of the activity) or permanent
 - the *probability* of the impact, describing the likelihood of the impact actually occurring, indicated as improbable (low likelihood), probable (distinct possibility), highly probable (most likely), or definite (impact will occur regardless of any preventative measures)
 - the *severity/beneficial scale*, indicating whether the impact will be very severe/beneficial (a permanent change which cannot be mitigated/permanent and significant benefit, with no real alternative to achieving this benefit), severe/beneficial (long-term impact that could be mitigated/long-term benefit), moderately severe/beneficial (medium- to long-term impact that could be mitigated/ medium- to long-term benefit), slight or have no effect
 - the *significance*, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high
 - the *status*, which will be described as either positive, negative or neutral
 - the *degree* to which the impact can be reversed
 - the *degree* to which the impact may cause irreplaceable loss of resources
 - the *degree* to which the impact can be *mitigated*
- a description and comparative assessment of all alternatives identified during the environmental impact assessment process

- recommendations regarding practical mitigation measures for potentially significant impacts, *for inclusion in the Environmental Management Plan (EMP)*
- an indication of the extent to which the issue could be addressed by the adoption of mitigation measures
- a description of any assumptions, uncertainties and gaps in knowledge
- an environmental impact statement which contains:
 - a summary of the key findings of the environmental impact assessment;
 - an assessment of the positive and negative implications of the proposed activity (one alternative only in EIA phase);
 - a comparative assessment of the positive and negative implications of identified alternatives

Assessment of Impacts

Direct, indirect and cumulative impacts of the issues identified through the scoping study, as well as all other issues identified in the EIA phase must be assessed in terms of the following criteria:

- The nature, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The extent, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The duration, wherein it will be indicated whether:
 - the lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
 - the lifetime of the impact will be of a short duration (2–5 years) - assigned a score of 2;
 - medium-term (5–15 years) – assigned a score of 3;
 - long term (> 15 years) - assigned a score of 4; or
 - permanent - assigned a score of 5;
- The magnitude, quantified on a scale from 0–10, where 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will

cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.

- The probability *of occurrence*, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1–5, where 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- the significance, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- The status, which will be described as positive, negative or neutral.
- The degree to which the impact can be reversed.
- The degree to which the impact may cause irreplaceable loss of resources.
- The *degree* to which the impact can be *mitigated*.

The significance is calculated by combining the criteria in the following formula:

$$S = (E + D + M) P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The significance weightings for each potential impact are as follows:

- < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),

- > 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

Assessment of impacts must be summarised in the following table format. The rating values as per the above criteria must also be included.

Table 3-Example of Impact table summarising the significance of impacts (with and without mitigation).

<i>Nature:</i>		
	Without mitigation	With mitigation
<i>Extent</i>	High (3)	Low (1)
<i>Duration</i>	Medium-term (3)	Medium-term (3)
<i>Magnitude</i>	Moderate (6)	Low (4)
<i>Probability</i>	Probable (3)	Probable (3)
<i>Significance</i>	36 (Medium)	24 (Low)
<i>Status (positive or negative)</i>	Negative	Negative
<i>Reversibility</i>	Low	Low
<i>Irreplaceable loss of resources?</i>	Yes	Yes
<i>Can impacts be mitigated?</i>	Yes	
<i>Mitigation: Mitigation Measures</i>		
<i>Cumulative impacts: Cumulative Impacts</i>		
<i>Residual Impacts: Residual Impacts</i>		

Table 4 -Measures for inclusion in the draft Environmental Management Plan:

OBJECTIVE:		
Description of the objective, which is necessary in order to meet the overall goals; these take into account the findings of the environmental impact assessment specialist studies		
Project component/s	List of project components affecting the objective	
Potential Impact	Brief description of potential environmental impact if objective is not met	
Activity/risk source	Description of activities which could impact on achieving objective	
Mitigation: Target/Objective	Description of the target; include quantitative measures and/or dates of completion	
Mitigation: Action/control	Responsibility	Timeframe
List specific action(s) required to meet the mitigation target/objective described above	Who is responsible for the measures	Time periods for implementation of measures
Performance Indicator	Description of key indicator(s) that track progress/indicate the effectiveness of the management plan.	
Monitoring	Mechanisms for monitoring compliance; the key monitoring actions required to check whether the objectives are being achieved, taking into consideration responsibility, frequency, methods and reporting	

4. ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations exist in terms of the present study:

- The current study is a Phase 1 Heritage Impact Assessment.
- There was limited use of archival records but used Google Spotting to scope potential heritage areas.
- Field survey were undertaken to identify tangible heritage resources located in and around the proposed development area footprint.
- No formal heritage social consultation took place.
- Informal conversations were undertaken with some of the passing local residents – questioned about burial grounds and graves.

5. FINDINGS

The findings of this study are presented in three ways as per the search and other methodological methods used in conducting it. Such as desktop study, map and deeds search as well as the physical survey of the proposed development area.

Anticipated Heritage Resources and Sites within Ndumo Rental Stock development footprint –

Based on the known archaeological and historical events that took place within this region of Zululand, the following archaeological and heritage resources sites are anticipated to occur within Ndumo Village development area:

- Iron Age implements or ceramics
- Iron Age graves and burials
- Historic monuments – some associated with the War
- Historical cemeteries and graves dating as far back to the establishment of Ndumo
- Historic houses/buildings
- There is also a likely hood of founding Stone Age artefacts, but chance are very slow
- Iron Age implements or ceramics; Iron Age graves and burials; Historic monuments – some associated with the Imfecane and the settler period.

5.1. Results of Desktop Search:

The site King Dingane and Border Cave were yielded by the desktop study and are proclaimed provincial heritage sites in term of The KwaZulu-Natal Heritage Act, No. 10 of 1997, and they include:

5.2. Cadastral Search:

From existing topographic map – the area in which the site is located seem to be the A number of observations are made about the evolution of the landscape in and around Ndumo:

1. The **1986 Topographic Map of showing the location of Ndumo and the site Paulpietersburg (2632CD)** – shows minimum developments in the area with proposed development (*Figure 17*).

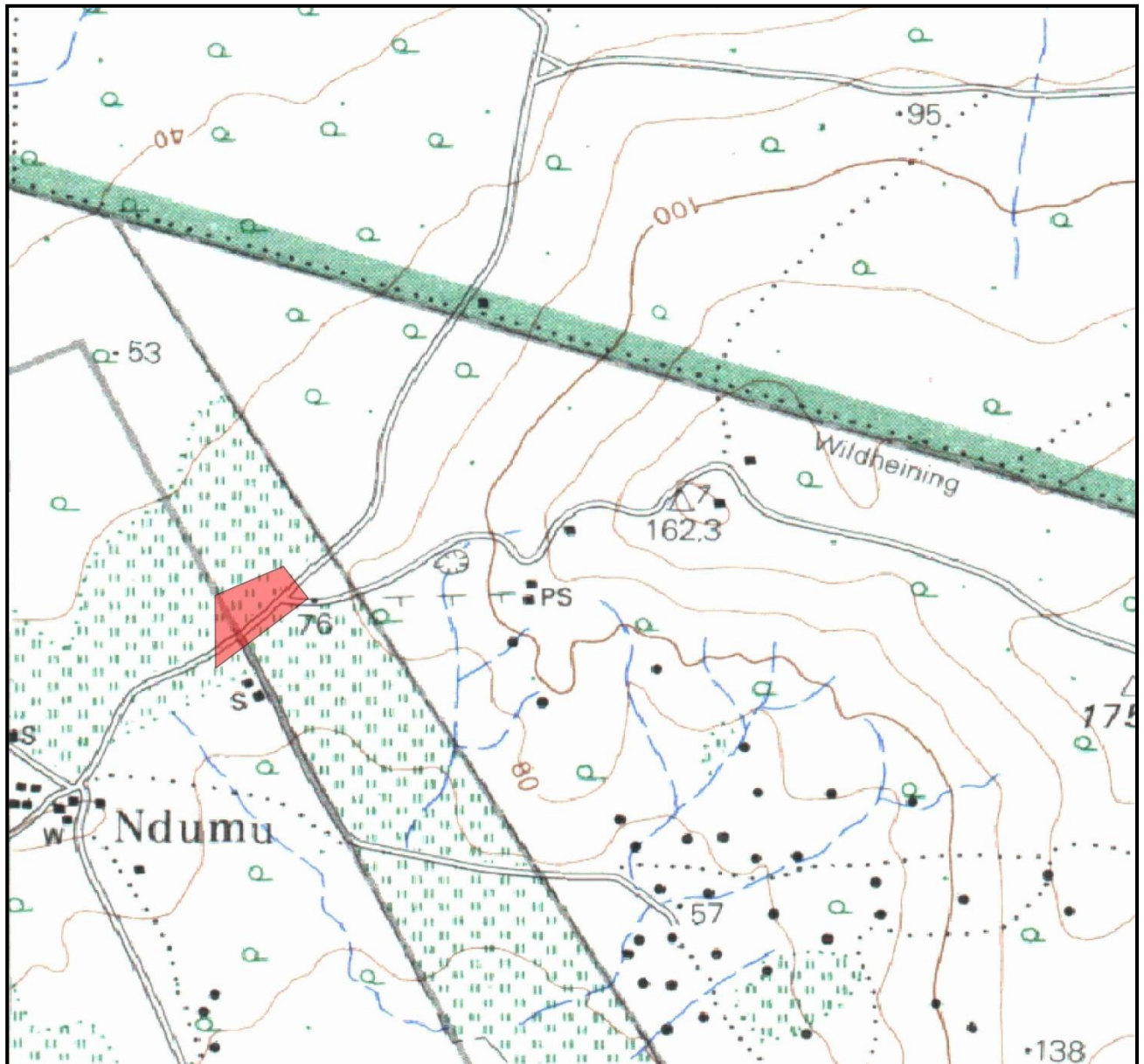


Figure 17- Topographic map of Ndumo and the development footprint

5.3. Deeds Search: N/A

5.4. Field Survey:

The physical survey of Ndumo Rental Stock development footprint made a number of observations about the Ndumo. The village has elements of evolving cultural environment and features. These mostly include modern development. However, no archaeological or historical resources were identified within the project footprint.



Figure 18- Picture showing a recent structure on the southern portion of the site.

6. DISCUSSION

The physical survey of Ndumo Rental Stock development footprint did not yield any archaeological or historic features. It yielded a built environment and landscape feature in a form of simple structure. The structure does not hold any heritage significance and is recent in age.

7. CONCLUSIONS AND RECOMMENDATIONS

The development footprint is devoid of any surface heritage resources.

7.1. Conclusions:

- It is concluded that the current proposed development will not have any negative impact on heritage resources – there were no heritage resources found within the project footprint.
- The project will may have positive impact in terms of development programmes by KwaZulu-Natal Department of Human Settlement in providing affordable rental community units housing to the people Ndumo.

7.2. Recommendations

- It is recommended that Amafa KwaZulu-Natali (the legislated provincial heritage authority) grant the project a Positive Review Comment and allow the development to proceed as planned.

8. APPENDIX A: PROJECT DESCRIPTION

- The KZN Department of Human Settlements proposes to undertake the development of the Rental Stock housing situated in Ndumo. The project area is located with Umkhanyakude District Municipality and Jozini Local Municipality.
- Ndumo Rental Stock Housing Project is a residential development project comprising of 150 No Community Residential units (CRU) spread over an approximately 3ha site. All the CRUs are split into 9 individual blocks of walk-up flats spread across the site.
- Each block comprises of either 12 or 18 flats on 2 or 3 floors and all reflecting different housing typologies. The following typologies have been considered in this proposal; bachelor units, 1 bedroom and 2 bedroom units.
- The 9 blocks are grouped into 3 with each group positioned on engineering platforms of a vertical height difference of about 1,5m between them.
- Parking of almost of 1 unit per parking bay is designed in this proposal.
- Play and relaxation areas are located in various areas on the site with ample landscaping and provision for pedestrian movements.
- Each building is built of 140mm concrete blocks in framed structure of walk-up flats. Internal walls are 90mm concrete blocks. The roof comprises of 0.8mm chromadek Kliplik roof sheeting fixed on 50mm by 70mm timber purlins with insulation on 150mm by 38mm timber trusses. Ceiling will be 9mm gypsum boards fixed to 38mm by 38mm timber battens fixed to tie beams.
- The walls will be plastered and painted both internally and externally. The stairwell will be built of clay face-brick both internally and externally.
- The windows will be standard steel-rolled mild steel frames to comply with SANS 727 of the National Building Regulations. The site will be controlled and fenced with steel-palisade fencing. On site management facility is to be considered if necessary.
- Rainwater harvesting will also be investigated for use in the gardens.
- Energy efficiency will be built into the development, such as solar water heaters.
- It is also proposed that a sewage package plant be used for the project, which is the Famsystem FMP, which will comply with the WA and GLs. The plant is an activated sludge system; no pumps are used in the plant itself which flows by gravity and can cope with both high and low flows. Effluent will be used for watering of gardens.
- Storm water will be properly managed by providing concrete lined v-drains that will drain into two flood attenuation dams.

- The attenuation dams will collect up to 100 cubic metres of storm water which will be disposed slowly into the open field. Water saving is also considered by providing storm water storage dams as well as the use of such water for irrigation. During construction, water will be sourced from the river via a water truck for construction purposes

9. REFERENCES

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

Fourie, W. 29 April 2013. Phase 1-Heritage Impact Assessment: Ndumo-Gezina 132 KV Powerline, Manguzi, UMkhanyakude District Municipality, Maputaland Region of KwaZulu-Natal Province.

Greenburg, J.H. 1995. *Studies in African Linguistic Classification*. New Haven: Yale University Press.

Hamilton, C. (ed.) 1995. *The Mfecane Aftermath*. Johannesburg: Witwatersrand University Press.

Huffman, T.N. 2007. *Handbook to the Iron Age. The Archaeology of Pre-Colonial Farmers in Southern Africa*. Scottsville: University of KwaZulu-Natal press.

Huffman, T. A. 2010. Prehistory of Durban area. *SAHO*

Gillings, K. 2010. *Battles of KwaZulu-Natal: A pictorial souvenir of the Battles of KwaZulu-Natal 1818-1906*.

Huffman, T. A. 2007. *Handbook to the Iron Age of Pre-Colonial Farming Societies in South Africa*. University of KwaZulu-Natal Press.

Wadley, L. 2005. A Typological Study of the Final Middle Stone Age Tools from Sibudu Cave, KwaZulu-Natal. *The South African Archaeological Bulletin*, Vol. 60 (182): 51-63.

Wadley, L., Williamson, B. & Lombard, M. 2004. Ochre in hafting Middle Stone Age southern Africa: a practical role. *Antiquity*, 78: 661 -675.

Wadley, L. 2001. Preliminary report on excavation at Sibudu Cave, KwaZulu-Natal. *Southern African Humanities* 13: 1-7.

Laband, J & P. Thompson. 2000. *The Illustrated Guide to the Anglo-Zulu War*. University of Natal Press Pietermaritzburg.

Westby-Nunn, T. 2000. *A Tourist Guide to the Anglo Boer War 1899-1902*. Westby-Nunn Publishers.

Nasson, B. 2000. Uyadela Wen'osulapho: Black Participation in the Anglo-Boer War. *The Anglo-Boer War Series*. Ravan press.

Torlage, G & S. Watt. 1999. *A Guide to the Anglo-Boer War Sites of KwaZulu-Natal*. Ravan Press.

Knight, I. 1998. *Great Zulu Battles 1838 – 1906*. Arms and Amour.

Smith, I. R. 1996. *The Origins of the South African War 1899-1902*, Longman, London New York.

Omer-Cooper, J. D. 1993. Has the Imfecane a Future? A Response to the Cobbing Critique. *Journal of Southern African Studies*, Vol.9 (2): 273-294.

Wright, J. 1991. A. T Bryant & the Wars of Shaka. *History in Africa*, Vol. 18: 409-425. otha, J. C.G. 1981. "Where the thunder rolls", "Die donderslag": 'n Hondersjarige geskiedenis van, *Dundee Natal*. Pietermaritzburg.

Vilakazi, A., Mthethwa, B. & Mpanza, M. 1986. *Shembe: The Revitalization of African Society*. Skotaville Publishers, Johannesburg.

Talana Museum. 1979. *Battle of Talana 20 October 1899*.

Vinnicombe, P. 1976. *People of the Eland: Rock Paintings of the Drakensberg Bushmen a Reflection of their Life and Thoughts*. University of Natal Press.

Booth, R. A. 1968. *The Journal of an American Missionary in the Cape Colony 1836*. Cape Town, South African Library

Maggs, T. 1976. *Iron Age Communities of the Southern Highveld*. Pietermaritzberg: Natal Museum.

Mitchell, P. 2002. *The Archaeology of Southern Africa*. Cambridge: Cambridge University Press.

Phillipson, D.W. 2005. *African Archaeology* (Third Edition). Cambridge: Cambridge University Press.

Tyson, P.D. & Lindesay, J.A. 1992. The climate of the last 2000 years in southern Africa. *The Holocene* 2:271-278.

Van Jaarsveld, A. 20 January 2011. Heritage Impact Assessment: Proposed Nondabuya-Ndumu 132Kv line and substation, Makhathini Flats, Northern KwaZulu Natal.

Internet

- www.heritagekzn.co.za
- www.sahonline.org.za South African History on line (19 August 2014)