CULTURAL HERITAGE IMPACT ASSESSMENT OF THE PROPOSED EMERGENCY NONDABULA WATER RETICULATION PROJECT, WARD 9 OF THE NODWENGU TRADITIONAL COUNCIL, ILEMBE REGIONAL MUNICIPALITY.



ACTIVE HERITAGE cc.

FOR: ROYAL HASKONING DHV

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LIST OF ABBREVIATIONS AND ACRONYMS

EIA	Early Iron Age
ESA	Early Stone Age
HISTORIC PERIOD	Since the arrival of the white settlers - c. AD 1820 in this part of the country
IRON AGE	Early Iron Age AD 200 - AD 1000 Late Iron Age AD 1000 - AD 1830
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998 and associated regulations (2006).
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999) and associated regulations (2000)
SAHRA	South African Heritage Resources Agency
STONE AGE	Early Stone Age 2 000 000 - 250 000 BP Middle Stone Age 250 000 - 25 000 BP Late Stone Age 30 000 - until c. AD 200

EXECUTIVE SUMMARY

A cultural heritage survey of the proposed Emergency Nondabula Water Reticulation Project, Ward 9 of the Nodwengu Traditional Council, ILembe Regional Municipality identified no heritage sites or features on the footprint. There is no known archaeological reason why the proposed development may not proceed on the footprint as planned. The area is also not part of any known cultural landscape. However, attention is drawn to the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act no 4 of 2008) which, requires that operations that expose archaeological or historical remains should cease immediately, pending evaluation by the provincial heritage agency.

1 BACKGROUND INFORMATION ON THE PROJECT

Consultant:	Frans Prins (Active Heritage cc) for Royal Haskoning DHV	
Type of development:	It is proposed that a network of pipelines is constructed within the Nondabula rural community located in Ward 9 of the Nodwengu Traditional Council in the iLembe Municipality, KwaZulu-Natal to link into the existing pipeline network and provide potable water to the community.	
	 The project will consist of the construction of: a DN150 Steel / PVC rising main of 4.7 km; a borehole with a yield capacity of 15 m³/h at 292 m; a 500 kℓ prefabricated steel reservoir; a secondary booster pump; a 50 kℓ elevated prefabricated steel tank; and 110 mm to 32 mm reticulation pipelines of approximately 95 km in length and 1,420 m yard taps. 	
	 The proposed infrastructure capacities and dimensions are as follows: DN150 steel / pvc pipe 4.7 km long with a throughput of 15 m³/h; DN63 HDPE pipe 10 km long; DN50 HDPE pipe 10 km long; DN32 HDPE pipe 20 km long; DN20 HDPE pipe 20 km long; S00 kl steel tank (16 m diameter x 3.1 m height) 	
	 Borehole with a throughput of 15 m³/h. 50 kℓ tank (5 m square x 2 m height) 	
Rezoning or subdivision:	Rezoning	
Terms of reference	To carry out a Heritage Impact Assessment	
Legislative requirements:	The Heritage Impact Assessment was carried out in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and following the requirements of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and the KwaZulu-Natal Heritage Act, 1997 (Act No. 4 of 2008)	

Table 1. Background information

1.1. Details of the area surveyed:

The study area lies between Tongaat and Dalton adjacent to the R614 within the ILembe District Municipality (Fig 1). The most unique characteristic of the Municipality is its predominantly rural character comprising mostly of tribal land (99.49%) which falls within the Ingonyama Trust. The area is dominated by grassland and predominantly indigenous woody vegetation in the river valleys. Exotic woodlot plantations occur in the higher altitude areas. The footprint covers an area of approximately 6km x 4km. The GPS coordinates for centre of the footprint is: S 29° 23' 52.93" E 30° 52' 51.01". The proposed development site is boarded by tribal communal areas and the entire area is located within the catchment area of the Thukela River.

2 BACKGROUND TO ARCHAEOLOGICAL HISTORY OF AREA

The archaeological history of the Province of KwaZulu-Natal (KZN) dates back to about 2 million years and possibly older, which marks the beginning of the Stone Age. The Stone Age in KZN was extensively researched by Professor Oliver Davies formerly of the Natal Museum. The Stone Age period has been divided in to three periods namely: Early Stone Age (ESA) dating between 2 million years ago to about 200 000 years ago, Middle Stone Age (MSA) dating between 200 000 years ago to about 30 000 years ago, and the Later Stone Age (LSA) which dates from 30 000 to about 2 000 year ago. The Stone Age period ends around approximately 2 000 years ago when Bantu speaking Age farmers from the north arrived in southern Africa. The Iron Age is also divided into three periods, namely: Early Iron Age (EIA) dating between AD 200 and AD 900, Middle Iron Age (MIA) dating between AD 900 and AD 1300, Late Iron Age (LIA) dating between AD 1 300 and 1 820.

2.1 Stone Age

2.1.1 Early Stone Age (ESA)

The ESA is considered as the beginning of the stone tool technology. It dates back to over 2 million years ago until 200 000 years ago. This period is characterised by Oldowan and Acheulean industries. The Oldowan Industry, dating to approximately between over 2 million years and 1.7 million years predates the later Acheulean. The Oldowan Industry consists of very simple, crudely made core tools from which flakes are struck a couple of times. To date, there is no consensus amongst archaeologists as to which hominid species manufactured these artefacts. The Acheulean Industry lasted

from about 1.7 million years until 200 thousand years ago. Acheulean tools were more specialized tools than those of the earlier industry. They were shaped intentionally to carry out specific tasks such as hacking and bashing to remove limbs from animals and marrow from bone. These duties were performed using the large sharp pointed artefacts known as handaxes. Cleavers, with their sharp, flat cutting edges were used to carry out more heavy duty butchering activities (Esterhuysen, 2007). The ESA technology lasted for a very long time, from early to middle Pleistocene and thus seems to have been sufficient to meet the needs of early hominids and their ancestors. Although not identified on the footprint, ESA tools occurrence have been reported in other sites in KZN. Apart from stone artefacts, the ESA sites in this Province have produced very little as regards other archaeological remains. This has made it difficult to make inferences pointing to economical dynamics of the ESA people in this part of the world. The diet of ESA peoples has therefore had to be reconstructed on the basis of evidence from elsewhere that it comprised primarily of animal and plant foods (Mazel 1989).

2.1.2 Middle Stone Age (MSA)

The MSA dates to between 200 000 and 30 000 years ago, coinciding with the emergence of modern humans. The MSA technology is therefore believed to have been manufactured by fully modern humans known as Homo sapiens who emerged around 250 000 years ago. While some of the sites belonging to this time period occur in similar contexts as those of ESA, most of the MSA sites are located in rock shelters. Palaeoenvironmental data suggest that the distribution of MSA sites in the high lying Drakensberg and surrounding areas was influenced by the climate conditions, specifically the amount and duration of snow (Carter, 1976). In general, the MSA stone tools are smaller than those of the ESA. Although some MSA tools are made from prepared cores, the majority of MSA flakes are rather irregular and are probably waste material from knapping exercises. A variety of MSA tools include blades, flakes, scrapers and pointed tools that may have been hafted onto shafts or handles and used as spearheads. Between 70 000 and 60 000 years ago new tool types appear known as segments and trapezoids. These tool types are referred to as backed tools from the method of preparation. Residue analyses on the backed tools from South African MSA sites including those in KZN indicate that these tools were certainly used as spear heads and perhaps even arrow points (Wadley, 2007). A few sites with impressive MSA deposits have been excavated in KZN. Perhaps the best known ones are Sibudu Cave and Umhlatuzana Cave to the south of the study area, and Border Cave to the north of the study area. All these sites provided impressive evidence for fine resolution data and detailed stratigraphy (Wadley & Jacobs, 2006).

2.1.3 Late Stone Age (LSA)

Compared to the earlier MSA and ESA, more is known about the LSA which dates from around 30 000 to 2 000 (possibly later) years ago. This is because LSA sites are more recent than ESA and MSA sites and therefore achieve better preservation of a greater variety of organic archaeological material. The Later Stone Age is usually associated with the San (Bushmen) or their direct ancestors. The tools during this period were even smaller and more diverse than those of the preceding Middle Stone Age period. LSA tool technology is observed to display rapid stylistic change compared to the slower pace in the MSA. The rapidity is more evident during the last 10 000 years. The LSA tool sequence includes informal small blade tradition from about 22 000 – 12 000 years ago, a scraper and adze-rich industry between 12 000 - 8 000 years ago, a backed tool and small scraper industry between 8 000 - 4 000 years and ending with a variable set of other industries thereafter (Wadley, 2007). Adzes are thought to be wood working tools and may have also been used to make digging sticks and handles for tools. Scrapers are tools that are thought to have been used to prepare hides for clothing and manufacture of other leather items. Backed tools may have been used for cutting as well as tips for arrows It was also during Later Stone Age times that the bow and arrow was introduced into southern Africa – perhaps around 20 000 years ago. Because of the bow and arrow and the use of traps and snares, Later Stone Age people were far more efficient in exploiting their natural environment than Middle Stone Age people. Up until 2 000 years ago Later Stone Age people dominated the southern African landscape. However, shortly after 2 000 years ago the first Khoi herders and Bantu-speaking agro pastoralists immigrated into southern Africa from the north. This led to major demographic changes in the population distribution of the subcontinent. San huntergatherers were either assimilated or moved off to more marginal environments such as the Kalahari Desert or some mountain ranges unsuitable for small-scale subsistence farming and herding. The San in the coastal areas of KZN were the first to have been displaced by incoming African agro pastoralists. However, some independent groups continue to practice their hunter gatherer lifestyle in the foothills of the Drakensberg until the period of white colonialisation around the 1840's (Wright & Mazel, 2007). According to the Natal Museum archaeological database Later Stone Age sites have been located in the Tugela River in the past but these are mostly restricted to surface scatters. Also dating to the LSA period is the impressive Rock Art found on cave walls and rock faces.

Rock Art can be in the form of rock paintings or rock engravings. The province of KZN is renowned for the prolific San rock painting sites concentrated in the Drakensberg. Rock art sites do occur outside the Drakensberg including Zululand, however, these sites have not been afforded similar research attention as those sites occurring in the Drakensberg. One rock art site is known to occur within the near vicinity of the project area approximately 6km to the west of the footprint.

2.2 Iron Age

2.2.1 Early Iron Age (EIA)

Unlike the Stone Age people whose life styles were arguably egalitarian, Iron Age people led quite complex life styles. Their way of life of greater dependence on agriculture necessitated more sedentary settlements. They cultivated crops and kept domestic animals such as cattle, sheep, goats and dogs. Pottery production is also an important feature of Iron Age communities. Iron smelting was practised quite significantly by Iron Age society as they had to produce iron implements for agricultural use. However no smelting sites were discovered in the study area as it is the northern KZN that is rich in abandoned iron smelting sites (Maggs, 1989). Although Iron Age people occasionally hunted and gathered wild plants and shellfish, the bulk of their diet consisted of the crops they cultivated as well as the meat of the animals they kept. EIA villages were relatively large settlements strategically located in valleys beside rivers to take advantage of the fertile alluvial soils for growing crops (Maggs, 1989). The EIA sites in KZN date to around AD 500 to AD 900. Extensive research in the province of this period led to it being divided in the following time lines according to ceramic styles (Maggs, 1989; Huffman 2007):

- _ Msuluzi (AD 500);
- _ Ndondondwane (AD 700 800);
- _ Ntshekane (AD 800 900).

The archaeological data base of the Natal Museum indicates that ten Early Iron Age sites occur in the immediate vicinity of the study area. Some well-known excavated sites such as Mamba, Whosi and Ndondondwane (Huffman 2007) occurs in the immediate vicinity of the project area on the banks of the Thukela River.

2.2.2 Late Iron Age (LIA)

The LIA is not only distinguished from the EIA by greater regional diversity of pottery styles but is also marked by extensive stone wall settlements. However, in this part of the world, stone walls were not common as the Nguni people used thatch and wood to build their houses. This explains the failure to obtain sites from the aerial photograph

investigation of the study area. Trade played a major role in the economy of LIA societies. Goods were traded locally and over long distances. The main trade goods included metal, salt, grain, cattle and thatch. This led to the establishment of economically driven centres and the growth of trade wealth. Keeping of domestic animals, metal work and the cultivation of crops continued with a change in the organisation of economic activities. Evidence for this stems from the fact that iron smelting evidence was not found in almost every settlement (Maggs, 1989; Huffman 2007).

2.3 Historic Period

Oral tradition is the basis of the evidence of historical events that took place before history could be recorded. This kind of evidence becomes even more reliable in cases where archaeology could be utilised to back up the oral records. Sources of evidence for socio political organization during the mid-eighteenth to early nineteenth century in the study area and the larger former Natal Province suggest that the people here existed in numerous small-scale political units of different sizes, population numbers and political structures (Wright & Hamilton, 1989). This period was largely characterised by rage and instability as political skirmishes broke due to the thirst for power and resources between chiefdoms. During the 2nd half of the eighteenth century, stronger chiefdoms and paramouncies emerged. However, these were not fully grown states as there was no proper formal central political body established. This changed in the 1780's when a shift towards a more centralized political state occurred. This shift was mainly characterized by population growth and geographical expansion of states. The most important and largest and strongest states at the time were the Mabhudu, Ndwandwe and Mthethwa. However, other smaller states, also established themselves in the greater Tugela Region. These included in the south the Qwabe, Bhaca, Mbo, Hlubi, Bhele, Ngwane and many others (Wright & Hamilton, 1989). The Zulu kingdom, established by King Shaka however remained the most powerful in the region in the early years of the 19th century. Shaka fought ruthlessly and often defeated his rivals and conquered their cattle, wives and even burnt their villages. These wars are often referred to as Difagane and this period was characterised by rage and blood shedding. Shaka was assassinated in 1828 at which time he had transformed the nature of the society in the Natal and Zululand regions. He was succeeded by Dingaan (Wright & Hamilton, 1989). Dutch farmers unhappy with the British rule in Cape Town decided to explore into the interior of the country, away from British rule. Some groups remained in the Eastern

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Cape, others kept going and a few settled in the Orange Free State and the Transvaal. A great number, led by Piet Retief and Gerrit Maritz, crossed the Drakensberg into Natal.

Here they encountered the Zulus who lured them into a trap and brutally massacred many of them. This was only one of the many failures of the white settler expeditions in the frontier areas and when the shocking news reached the Cape, more groups were sent to the interior to revenge. A series of battles were fought but the most notable was the Battle of Blood River in 1838 where the Boers defeated the Zulus. This ended the Zulu threat to the white settlers and a permanent and formal settlement in Natal was established. However the Zulu kingdom remained independent for a couple of decades. The Republic of Natalia was annexed by the British in 1845 and in 1879 the Zulu kingdom was also invaded (Wright & Hamilton, 1989). The Anglo-Zulu War has been well recorded and an important occurrence took place at Jamesons Drift, to the north of the project area, when a few British soldiers attempted to cross the Thukela River after their defeat at the battle of Isandlwana. Although no relicts or artefacts survive from this encounter the surrounding landscape is still imbued with the meaning of this important period in the colonial history of KwaZulu-Natal.

3 BACKGROUND INFORMATION OF THE SURVEY

3.1 Methodology

A desktop study was conducted of the archaeological databases housed in the KwaZulu-Natal Museum. In addition, the available archaeological and historical literature covering the greater Thukela River catchment area was also consulted. The SAHRIS website was consulted to assess previous heritage surveys done in the area.

Ground surveys, following standard and accepted archaeological procedures, was conducted on the 6th and 16th June 2015.

3.2 Restrictions encountered during the survey

3.2.1 Visibility

Visibility is good. However, dense vegetation in the river valleys may have compromised archaeological site visibility.

3.2.2 Disturbance

No disturbance of any potential heritage features was noted. Overgrazing and removal of trees for fire wood led to the better archaeological visibility of the footprint.

3.3 Details of equipment used in the survey

GPS: Garmin Etrek Digital cameras: Canon Powershot A460 All readings were taken using the GPS. Accuracy was to a level of 5 m.

4 DESCRIPTION OF SITES AND MATERIAL OBSERVED

4.1 Locational data

Province: KwaZulu-Natal Towns: Situated between Dalton and Tongaat Municipality: iLembe Regional Municipality

4.2 Description of the general area surveyed

The project area is classified as a rural area. The land use surrounding the study area is flanked by indigenous woody vegetation in the river valleys and grasslands, mostly disturbed, in the higher altitude areas (Fig 2). The footprint is situated in a communal area with a large percentage of rural homesteads occupied by Zulu-speaking small-scale subsistence farmers. Most of these are spatially ordered in the traditional Nguni dispersed settlement pattern or more modern variations thereof. The majority of homesteads, in the area demarcated for development, appear to have been built in the last 30 years or so.

No heritage sites were located on the footprint.

The middle reaches of the Thukela River Valley has been thoroughly surveyed by archaeologists during the last 30 years or so. This area was the focus of various research projects by archaeologists associated with the then Natal and Ondini Museums respectively (Huffman 2007). However, it appears that no surveys were conducted in the project area (Ward 9 of the Nodwengu Traditional Council). Most surveys have been conducted to the north west of the actual study area adjacent to the Tugela River. Three

Early Iron Age sites have also been excavated in the recent past notably by archaeologist Len van Schalkwyk who has been working in this area for many years (ibid). The records of the KwaZulu-Natal Museum indicate the presence of 2 Early Stone Age sites, 3 Middle Stone Age sites, 6 Intermediate Stone Age sites, 8 Early Iron Age sites, 3 Later Iron Age sites, and 2 Historical sites in this area. One rock art site occurs near the project area about 6km to the west of the footprint. Although some rocky outcrops occur in the valley flanks none of them had any shelters that may harbour archaeological deposits (Fig 3). Particular care was taken to identify modern grave sites but none were located within 40m from the identified in situ development proposal. There is a possibility that some "invisible" graves may occur within the various homesteads located in the footprint (Fig 4). These, however, were not evident during the ground survey. The footprint is also not part of any known cultural landscape (Table 2).

Table 2.	Evaluation	and statement	of significance.
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	Significance criteria in terms of Section 3(3) of the NHRA			
	Significance	Rating		
1.	Historic and political significance - The importance of the cultural heritage in the community or pattern of South Africa's history.	None.		
2.	Scientific significance – Possession of uncommon, rare or endangered aspects of South Africa's cultural heritage.	None.		
3.	Research/scientific significance – Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage.	None.		
4.	Scientific significance – Importance in demonstrating the principal characteristics of a particular class of South Africa's cultural places/objects.	None.		
5.	Aesthetic significance – Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.	None.		
6.	Scientific significance – Importance in demonstrating a high degree of creative or technical achievement at a particular period.	None.		
7.	Social significance – Strong or special association with a particular community or cultural group for social, cultu-ral or spiritual reasons.	None.		
8.	Historic significance – Strong or special association with the life and work of a person, group or organization of importance in the history of South Africa.	None.		
9.	The significance of the site relating to the history of slavery in South Africa.	None.		

5 STATEMENT OF SIGNIFICANCE (HERITAGE VALUE)

No heritage sites occur on the actual footprint and the field rating of relevant sites (Table 3) does not apply.

Level	Details	Action
National (Grade I)	The site is considered to be of National Significance	Nominated to be declared by SAHRA
Provincial (Grade II)	This site is considered to be of Provincial significance	Nominated to be declared by Provincial Heritage Authority
Local Grade IIIA	This site is considered to be of HIGH significance locally	The site should be retained as a heritage site
Local Grade IIIB	This site is considered to be of HIGH significance locally	The site should be mitigated, and part retained as a heritage site
Generally Protected A	High to medium significance	Mitigation necessary before destruction
Generally Protected B	Medium significance	The site needs to be recorded before destruction
Generally Protected C	Low significance	No further recording is required before destruction

Table 3. Field rating and recommended grading of sites (SAHRA 2005)

6 RECOMMENDATIONS

The proposed development may proceed from a heritage perspective as no sites occur on the actual footprint. However, the development must be limited to the actual footprint or the in situ proposed development as outlined in the brief. Another heritage impact assessment will be required should the developer decide to construct relevant access roads or other infrastructure as these may threaten graves and other heritage features that is not part of the present footprint. In addition, special care must be taken when linking homesteads specifically with water piping as these may threaten graves situated within the parameters of the actual homestead. In these instances it would be wise to liaise with the homestead occupants before the laying of the pipeline. It should also be pointed out that the KwaZulu-Natal Heritage Act requires that operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.

7 MAPS AND FIGURES

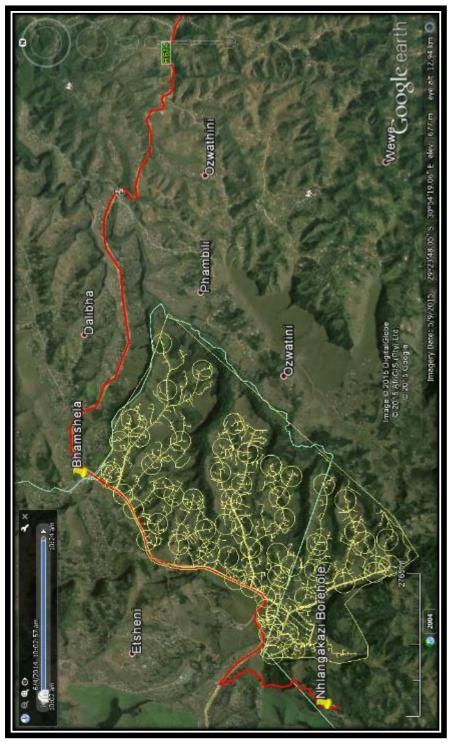


Figure 1. Google aerial photograph showing the location of the proposed Nondabula Water Reticulation Project adjacent to the R614 in the iLembe District Municipality, KZN.



Figure 2. View over the project area. Most of the project area is covered by grassland. Indigenous woody vegetation occurs in the valleys whilst exotic woodlots occur on the higher altitudes. Rural homesteads are scattered in a typical Nguni dispersed settlement pattern.

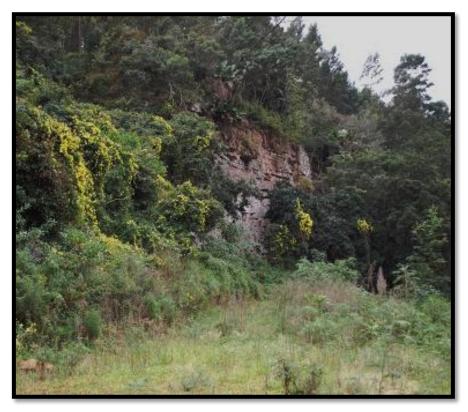


Figure 3. Although rocky outcrops occur in some valleys none harboured caves or shelters with potential archaeological deposit.



Figure 4. Most of the proposed pipelines will follow the existing road network of the project area. These often occur in the close proximity of rural settlements that may harbour "invisible graves" within the homestead.

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