

**FIRST PHASE HERITAGE IMPACT ASSESSMENT OF
THE PROPOSED CONSTRUCTION OF MPHEPHETENI
WATER PIPELINE, ETHEKWENI DISTRICT
MUNICIPALITY.**



For: Nema Environmental Consultants

Prepared by:

Frans Prins

Cell: 834739657

Email: activeheritage@gmail.com

Fax: 0867636380

Sian Hall

Cell: 0835300273

Email: active.heritage.africa@gmail.com

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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 (2010).
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999) and associated regulations (2000)
SAHRA	South African Heritage Resources Agency
SIA	Social Impact Assessment
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

This is a First Phase Cultural Heritage survey of the proposed construction of the Maphepheteni Water Pipeline, Ethekeweni District Municipality. During the course of the survey numerous potential cultural and heritage features were identified. These include existing homesteads, domestic areas, structures, fields and graves that will be disrupted during the laying of the pipeline. It also includes many historic and abandoned homesteads, domestic areas, fields and hidden graves which will be impacted upon when the pipeline is to be laid. For these reasons we suggest that a Heritage Walk-through be implemented during the time of the laying-down the pipes in those areas identified as sensitive from a heritage perspective. Given the density of contemporary homesteads in some areas we also suggest that a Social Impact Assessment (SIA) be undertaken. We draw attention 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 require that operations exposing archaeological or historical remains, including graves, should cease immediately, pending evaluation by the provincial heritage agency.

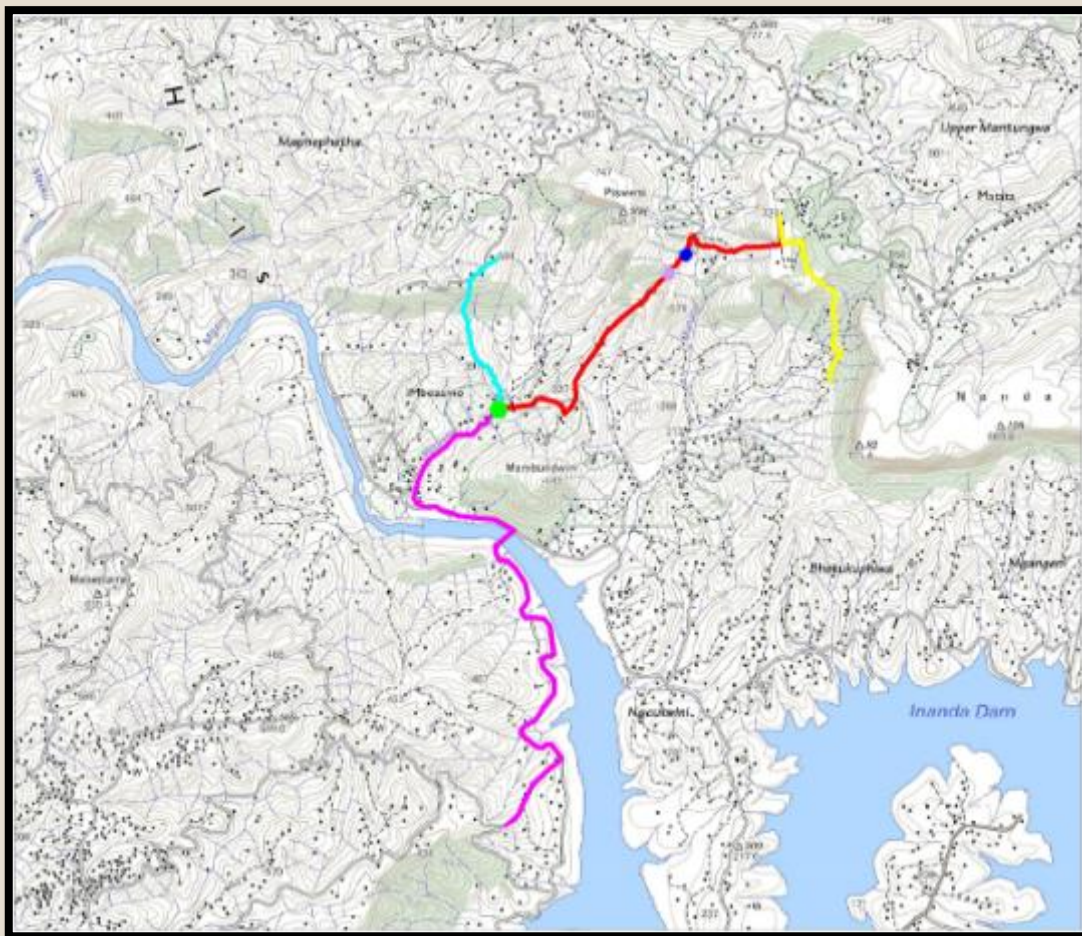
1 BACKGROUND INFORMATION ON THE PROJECT

1.1 General Background Information

Consultant:	Frans Prins and Sian Hall (Active Heritage cc) for Nema Environmental Consultants.
Type of development:	The client proposes to lay down approximately 36 km of water pipeline and the construction of 2 Pump Stations approximately 12 km from, Inanda Ethekeweni District Municipality. EThekwini Water and Sanitation is proposing to augment the water supply to the lower Maphepheteni and Mgangeni areas.
Rezoning or subdivision:	n/a
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)

Table 1. Background information

This project entails the laying-down of the water pipeline, approximately 36 km in length, together with the construction of 2 Pump Stations, approximately 12 km from Inanda. Ethekeweni Water and Sanitation proposes to augment the water supply to the lower Maphepheteni and Mgangeni areas, which are currently supplied water via water tankers. To enable this, Umgeni water is in the process of upgrading Maphepheteni Water Treatment (located at Kwa-Ngcolosi area) from 2.5 Ml/d to 5Ml/d. This upgrade will assist Ethekeweni Water and Sanitation with an additional supply which can be made available to supply Maphepheteni and Mgangeni areas.



Map 1. Showing Start and End of the Proposed Pipeline Trajectory.

1.2 Details of the area surveyed:

The **Start** (29°40'36.99"S, 30°48'7.12"E) of the water pipeline is located on a plateau of a small forested mountain south of the proposed trajectory of the pipeline. It branches at End A (29°38'23.14"S, 30°48'4.18"E) into two branches, one of which runs in a northerly direction, and another which runs in a north-easterly direction. The northerly branch concludes at End B (29°37'35.26"S, 30°48'3.52"E), which the north-easterly

branch concludes at End C (29°37'21.79"S, 30°49'46.63"E), before running in a southerly direction and concluding at End D (29°38'14.00"S, 30°50'5.27"E) ((Map 2).

The entire pipeline trajectory runs through rather densely inhabited rural dwelling-scape of traditional and transitional individual homesteads, with associated fields and domestic activity areas, and associated structures and buildings, which are themselves littered across an undulating and mountainous landscape of grassland, patches of woodland and extensive plantations (Map 2).



Map 2: Google Map of the course of the Pipeline Trajectory, and the different sections of the Trajectory.



Plate 1. View of Landscape and Homestead.

2 CULTURAL HERITAGE LEGISLATION

According to Section 3 (2) of the NHRA, the heritage resources of South Africa include:

- 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 palaeontological 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 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. movable objects, including objects recovered from the soil or waters of South Africa, including
 - archaeological and palaeontological 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(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).”

In terms of section 3 (3) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of:

- “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 a 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.”

3 BACKGROUND TO ARCHAEOLOGICAL HISTORY OF AREA

3.1 General Archaeological Background

The greater Durban, including the portion covered by the study area, has been relatively well surveyed for archaeological heritage sites by the KwaZulu-Natal Museum and subsequently by private heritage consultants in the last few years. Prior to 1950, the archaeological site distribution of the area was poorly known.

The available evidence, as captured in the Amafa and KwaZulu-Natal Museum heritage site inventories, indicates that the greater Durban area contains a wide spectrum of archaeological sites covering different time-periods and cultural traditions. These range from Early Stone Age, Middle Stone Age, and Later Stone Age to Early Iron Age, Middle Iron Age, and Later Iron Age sites. Two notable Middle Stone Age sites, i.e. Umlatuzana near Marianhill and Segubudu near Stanger have been excavated in the last two decades and yielded impressive archaeological stratigraphies relating to the period associated with the origins of anatomically modern people. Also notable is the Shongweni Later Stone Age shelter which was excavated in the 1970's. This shelter yielded some of the earliest remains of domesticated cereals in South Africa (Mazel 1989). A large percentage of more recently recorded sites occur along the dune cordon and slightly inland in the form of shell middens which were mostly created by Iron Age shellfish gatherers although some of the stratigraphic layers may extend back to Later Stone Age periods (Anderson pers.com). Perhaps the most notable Later Iron Age shell midden occurs at the mouth of the Umhlanga lagoon.

3.2 Iron Age

Around 1,700 years ago an initial wave of Early Iron Age People settled along the inland foot of the sand dunes on sandy but humus-rich soils which would have ensured good crops for the first year or two after they had been cleared. These early agro-pastoralists produced a characteristic pottery style known as Matola. The Matola people also exploited the wild plant and animal resources of the forest and adjacent sea-shore. These communities seem to have been small groups of perhaps a few dozen slash-and-burn cultivators, moving into a landscape sparsely inhabited by Later Stone Age San hunter-gatherers.

By 1,500 years ago another wave of Iron Age migrants entered the area. Their distinct ceramic pottery is classified to styles known as "Msuluzi" (AD 500-700), Ndongondwane (AD 700-800) and Ntshekane (AD 800-900). Although a handful of archaeological sites in the greater Richards Bay area may belong to these periods the majority of these sites occur further inland along the major river valleys of KwaZulu-Natal below the 1000m contour (Maggs 1989:31; Huffman 2007:325-462). Archaeologists of the Natal Museum (with particular reference to Gavin Whitelaw) recorded eight Early Iron Age sites in the

Umgeni Valley in the proximity of Inanda Dam. The Kwa-Gandaganda Site has subsequently been excavated. At present all these sites have been flooded by the Inanda Dam. They are, however situated within a 2km distance from the project area

Some of the shell middens recorded along the coastline of KwaZulu-Natal belongs to the very first Nguni-speaking agro-pastoralists who settled in the province. These sites have been dated to approximately 1,200 years ago. In addition, sites belonging to the immediate ancestors of the present Zulu-speaking communities in the area have been located in various locations in the greater Durban area.

3.3 Colonial Period

The colonial history of the area starts around 1820 when early English ivory traders established themselves at Port Natal (Durban). Dutch descendants (i.e. Voortrekkers) moved into the area soon after 1834 and established a short lived Boer republic called Natalia. However, by 1845 Natal became a British colony. Colonial buildings dating from the later 19th century as well as subsequent periods abound in the greater Durban area. These, like the archaeological resources of the province, are also protected by heritage legislation (Derwent 2006).

3.4 Historic Structures and Features in the Study Area

It does appear that the present homesteads are scattered among, built closely to, and even built upon older and abandoned homesteads. These areas may contain “hidden graves” not visible on the surface. Figure 1. presents a very contained section of this proposed pipeline trajectory as an example of the domestic dwellings and activities areas associated with habitation areas. The entire route within the residential areas presents a very similar picture of current and past domestic sites and features littering the landscape.



Figure 1. Example of Section of Pipeline Trajectory in relation to numerous current, old and historic Remains and Structures.

3.5 Sites Round Up

Although there are a number of EIA sites located to the south-east of the trajectory, the closest archaeological site is 0.45 km from the proposed pipeline trajectory (29°39'25.98"S, 30°48'31.70"E). This is situated below the 1000m altitude mark and will not be affected by the pipeline construction. It is also flooded by Inanda Dam.

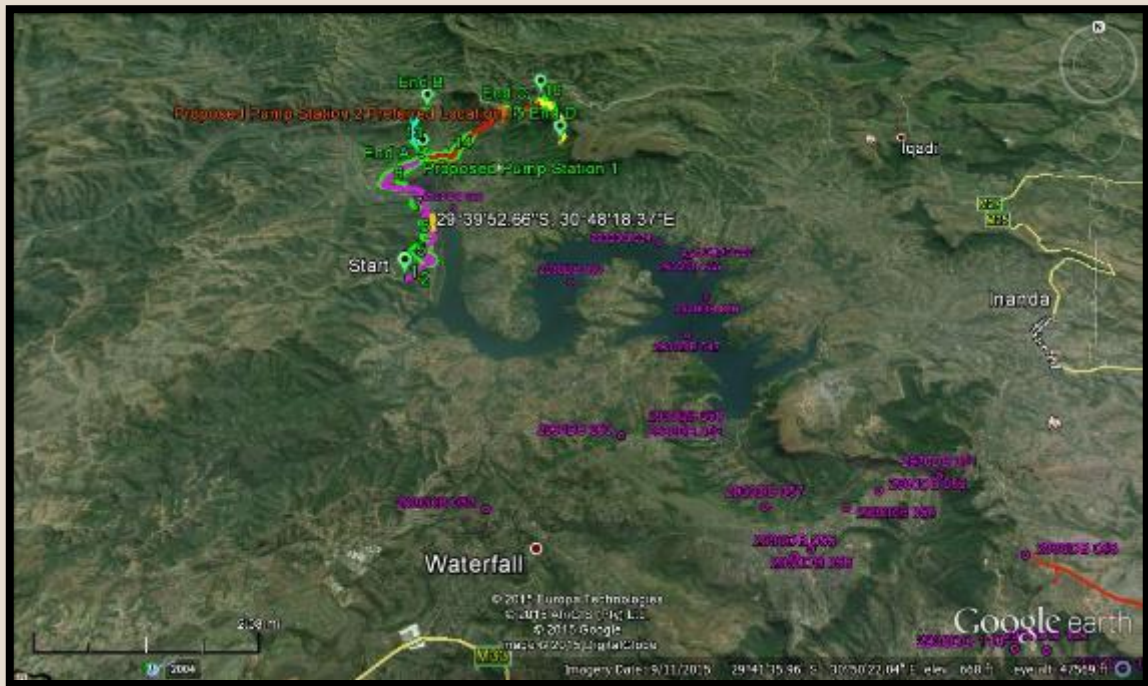


Figure 2. Distribution of Closest iron Age Sites to the South-East of the Pipeline Trajectory.



Figure 3. The closest EIA Site to the Pipeline Trajectory of less than 1 km away.



Plate 2. Faunal Remains from KwaGandaganda EIA Site, Inanda Dam Area (Kwa-Zulu Natal Museum Archival Records).

4 BACKGROUND INFORMATION OF THE SURVEY

4.1 Methodology

A desktop study was conducted of the archaeological databases housed in the KwaZulu-Natal Museum and the SAHRA inventory of heritage sites. Aerial photographs of the area were surveyed. The SAHRIS website was researched to evaluate past surveys in the area. In addition, the available archaeological and historical literature covering KwaZulu-Natal was also consulted.

A site visit was made to the project area on 30th October 2015. A ground survey, following standard and accepted archaeological procedures, was conducted. The consultant walked the area on foot and surveyed the area for potential heritage sites. Both sides of the proposed pipeline trajectory was surveyed.

4.2 Restrictions encountered during the survey

4.2.1 Visibility

Visibility was good for the most part, although dense inhibited clear views in in some extended areas. It is also evident that some structures have been burnt down in the past as a result of the violence that the area experienced. Some grave sites may be hidden as a result.

4.2.2 Disturbance

Much disturbance of past sites and features was noted since homesteads have been built successively close to, and even among, and on top of pre-existing homesteads and features.

4.3 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.

5 DESCRIPTION OF SITES AND MATERIAL OBSERVED

5.1 Locational data

Province: KwaZulu-Natal

Towns: Inanda..

Municipality: Ethekeweni District Municipality

5.2 Description of the general area surveyed

Numerous heritage sites and features, and potential heritage sites and features, were observed on top of, next to, and close to the proposed pipeline trajectory. These include, and potentially include, homesteads, domestic activity areas, associated structures, fields, and graves. Generation upon generation of residents have inhabited this area within the project footprint, and they have built close to, among, and even on top of pre-existing dwellings, activity areas, and fields. These areas are visible in the depicted polygons on Map 2.

The consultants advise that a Heritage Walk-through be implemented at the time of the laying-down of the pipeline and the construction of associated reservoirs. We strongly advise that, during construction great care be taken not to intrude upon cultural and living spaces along the pipeline trajectory as cultural and heritage material is often associated with homesteads and domestic activity areas, but not always visible above surface. Where the pipeline trajectory imposes upon existing homesteads, and cannot be altered, we further suggest that a Social Impact Assessment be undertaken at these sites.

6 HERITAGE SITES AND THEIR SIGNIFICANCE (HERITAGE VALUE)

Sixteen areas have been identified which may harbour potential heritage sites. These areas are indicated with polygons on Map 2.

6.1 Field Rating

All the Early Iron Age sites that are presently flooded by the Inanda Dam and identified in previous surveys (Whitelaw 1992) are rated as locally significant (Table 2). However, none of these will be impacted-upon by the proposed pipeline construction. Potential grave sites that occur in the various sensitive areas (marked as polygons on Map 2) will have a rating of high to medium significance (Table 2).

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

6.2 Description of Cultural and Heritage Sites, Features and Activity Areas

- **Polygon 1: 29°40'28.20"S, 30°48'13.55"E.** Homestead and grave-sensitive area. Homestead with domestic activity areas, and possible graves. The consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA.
- **Polygon 2: 29°40'23.29"S, 30°48'17.04"E.** Homestead and grave-sensitive area. Homestead with domestic activity areas, and possible graves. Abandoned huts. The consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA.
- **Polygon 3: 29°40'14.16"S, 30°48'16.81"E.** Homesteads with domestic activity areas, and possible graves. Abandoned huts. Old fields and kraals. The area within the polygon is littered with current homesteads, historic and abandoned, homesteads, current and old fields, current and old domestic areas, and visible and hidden graves. In similar social settings, graves are generally associated with homesteads. Many of these graves are not visible on the surface. Given the density of settlement features within this polygon, the consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA.
- **Polygon 5: 29°39'39.99"S, 30°48'15.85"E.** Homesteads with domestic activity areas, and graves. Abandoned huts. Old fields and kraals. The area within the polygon is littered with current homesteads, historic and abandoned, homesteads, current and old fields, current and old domestic areas, and visible and hidden graves. In similar social settings, graves are generally associated with homesteads. Many of these graves are not visible on the surface. Given the density of settlement features within this polygon, the consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA.

- **Polygon 6: 29°39'39.99"S, 30°48'15.85"E.** Homesteads with domestic activity areas, and possible graves. Abandoned huts. Old fields and kraals. The area within the polygon is littered with current homesteads, historic and abandoned, homesteads, current and old fields, current and old domestic areas, and possible graves. In similar social settings, graves are generally associated with homesteads. Many of these graves are not visible on the surface. Given the density of settlement features within this polygon, the consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA.
- **Polygon 7: 29°39'14.20"S, 30°48'6.75"E.** Homesteads with domestic activity areas, and possible graves. Abandoned huts. Old fields and kraals. The area within the polygon is littered with current homesteads, historic and abandoned, homesteads, current and old fields, current and old domestic areas, and possible graves. In similar social settings, graves are generally associated with homesteads. Many of these graves are not visible on the surface. Given the density of settlement features within this polygon, the consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA.
- **Polygon 8: 29°38'38.72"S, 30°47'44.87"E.** Homesteads with domestic activity areas, and possible graves. Abandoned huts. Old fields and kraals. The area within the polygon is littered with current homesteads, historic and abandoned, homesteads, current and old fields, current and old domestic areas, and visible and hidden graves. In similar social settings, graves are generally associated with homesteads. Many of these graves are not visible on the surface. Given the density of settlement features within this polygon, the consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA. In fact, this polygon is dense in various forms of human activity and we have selected a section from this polygon to act as an example of the various features that the client can expect to find on this project footprint (Fig 1).
- **Polygon 9: 29°38'16.62"S, 30°48'2.71"E.** Homesteads with domestic activity areas, and visible graves. There are also quite possibly hidden graves. Abandoned huts. Old fields and kraals. The area within the polygon is littered

with current homesteads, historic and abandoned homesteads, burnt homesteads, current and old fields, current and old kraals, current and old domestic areas, and visible and hidden graves. In similar social settings, graves are generally associated with homesteads. Many of these graves are not visible on the surface. Given the density of settlement features within this polygon, the consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA.

- **Polygon 10: 29°37'43.49"S, 30°47'53.16"E.** Homesteads with domestic activity areas, and possible graves. Abandoned and burnt huts. Old fields and kraals. The consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA.
- **Polygon 11: 29°37'35.39"S, 30°48'0.90"E.** Homesteads with domestic activity areas, and possible graves. Abandoned and burnt huts, and structures. Old fields and kraals. The consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA.
- **Polygon 13: 29°37'56.87"S, 30°47'53.42"E.** Structure adjacent to pipe trajectory. Although no heritage features are associated with this polygon it is possible that hidden graves may occur in the area
- **Polygon 14: 29°38'18.40"S, 30°48'31.43"E.** Homesteads with domestic activity areas, structures, and possible graves. Abandoned and burnt huts and structures. Old fields and kraals. Successive generations of habitation and buildings, possibly extending back to the Late Iron Age and Historic Period. The area within the polygon is littered with current homesteads, historic and abandoned homesteads, burnt homesteads, current and old fields, current and old kraals, current and old domestic areas, and visible and hidden graves. In similar social settings, graves are generally associated with homesteads. Many of these graves are not visible on the surface. Given the density of settlement features within this polygon, the consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density area require a Heritage Walk-Through and an SIA.

- **Polygon 15: 29°37'34.82"S, 30°49'24.21"E.** Homesteads with domestic activity areas, structures, and possible graves. Abandoned and burnt huts and structures. Old fields and kraals. The consultants suggest that the developers avoid all homesteads, including abandoned homesteads, with a distance of 10 metres. Developers should plot the pipeline trajectory with this in mind, and arrange for a Heritage Walk-through at the time that the pipeline is laid-down. All high-density areas require a Heritage Walk-Through and an SIA.

The two proposed locations for Site 2 Pump Station are located within this polygon. The Preferred Site indicated by the client is located at Proposed Pump Station 2 Preferred Location: 29°37'34.41"S, 30°49'12.22"E, while the Alternative Location is located at 29°37'40.79"S, 30°49'5.61"E. We would suggest the Alternative Location as the better option since there are homesteads and domestic features associated with the client's Preferred Location. The Alternative Location does not have any domestic structures associated in the close vicinity and it therefore presents a less complicated location for construction to take place.



Plate 3. Location of the Preferred Location for Pump Station 2.

- **Polygon 16: 29°37'25.73"S, 30°49'49.61"E.** Homesteads with domestic activity areas, structures, and possible graves. Abandoned and burnt huts and structures. Old fields and kraals. Successive generations of habitation and buildings, possibly extending back to the Historic Period. Consultants suggest a Phase 2 heritage Walk-through, and possible SIA.

- **Polygon 17: 29°37'32.09"S, 30°49'58.15"E.** Homesteads with domestic activity areas, rectangular structures, and possible graves. Abandoned huts. Old fields. Consultants suggest a Heritage Walk-through when the pipeline trajectory has been established, and a possible SIA.
- **Polygon 18: 29°38'21.86"S, 30°48'4.38"E.** Cuts through Polygons 8, 9 and 14. Homesteads with domestic activity areas, structures, and possible graves. Abandoned and burnt huts and structures. Old fields and kraals. Successive generations of habitation and buildings, possibly extending back to the Historic Period. Site of proposed Pump Station 1(Proposed Pump Station 1: 29°38'23.53"S, 30°48'4.93"E).



Plate 4. Preferred Site of Pump Station 1.



Plate 5. Alternative View of the Preferred Site for Pump Station 1.

7 RECOMMENDATIONS

The homestead and domestic activity areas within the project footprint contain much cultural material with potential of heritage value. These include current homesteads and associated activity areas and features, and homesteads and associated features older than 60 years of age. Graves are a concern in this area as they tend to be associated with individual homesteads in the absence of formal burial grounds, or cemeteries. Graves may also not be visible above the surface, and these tend to be at most risk during construction.

This area experienced intense political conflict and faction fighting during the 1970's – 1990's and this social disruption is reflected in the spatial patterning and layout of homesteads and domestic areas. Faction fighting led to many inhabitants of the area leaving their homes for fear of their lives, only to return years later when the conflict eased off. Burnt hut remains and other structures are apparent throughout the residential area of the footprint.

This dispersal and return of inhabitants has also led to a rather unusual, and atypical Nguni settlement pattern. When returning to their old homestead locations, inhabitants would inhabit their old buildings, or build new ones among, and close to the older ones. They would rework old, and new fields. As a result the typical Centralised Nguni Cattle pattern is not very evident, and is replaced with a more haphazard, but tightly constructed domestic arrangement within the homestead. These many years of conflict and Faction Fighting has also resulted in clusters of densely, and tightly structured homesteads across the landscape.

This Disseminated Nguni Settlement Pattern presents itself as having borrowed spatial elements and domestic features from the Sotho Pattern with some evidence of bilobial structures being present. The spatial patterning appears to provide the residents with some form of defence and seclusion. Denser settlement patterns tend to develop where the emergence of centralised leadership.

In view of the built content within the project footprint, and the presence of burnt structures which can be hard to see, the consultants suggest that a Heritage Walk-through be implemented during the laying-down of the pipeline, and the construction of the associated Pump Stations to ensure that cultural and heritage material remain undisturbed. Where the pipeline trajectory intrudes upon existing homesteads, and cannot be deviated, the consultants suggest that a Second Phase Heritage Assessment with a view to investigate grave exhumation and reburial (Appendix 1) be undertaken in the relevant areas.

Taking into consideration the historical conflict associated with the Struggle Era, and the possibility of Historical features being present, a buffer of 10m should be maintained around all structures, features and domestic activity areas in the footprint. If this is not possible then a Second Phase Heritage Impact Assessment and a possible SIA should be undertaken at the time of laying-down the proposed pipeline, and the construction of the Pump Stations.

The development may proceed on the remainder of the project area, as planned. Note should be taken however, of the South African Heritage Resources Act, 1999 (Act No. 25 of 1999,) and the KwaZulu-Natal Heritage Act (Act no 4 of 2008) which require that operations exposing archaeological or historical remains should cease immediately, pending evaluation by the provincial heritage agency. All graves must be avoided, including those younger than 60 years of age as all graves are protected by Provincial

Maphepheteni Water Pipeline. Ethekeweni District Municipality. Nema Consulting.

Heritage Legislation. Should it not be possible to avoid certain graves then a Second Phase Heritage Impact Assessment which includes both grave exhumation and reburial must be called for.

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APPENDIX 1 RELOCATION OF GRAVES

Burial grounds and graves older than 60 years are dealt with in Article 36 of the NHR Act, no 25 of 1999. The Human Tissues Act (65 of 1983) protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and reburial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

Below follows a broad summary of how to deal with grave in the event of proposed development.

- If the graves are younger than 60 years, an undertaker can be contracted to deal with the exhumation and reburial. This will include public participation, organising cemeteries, coffins, etc. They need permits and have their own requirements that must be adhered to.
- If the graves are older than 60 years old or of undetermined age, an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. This is a requirement by law.

Once it has been decided to relocate particular graves, the following steps should be taken:

- Notices of the intention to relocate the graves need to be put up at the burial site for a period of 60 days. This should contain information where communities and family members can contact the developer/archaeologist/public-relations officer/undertaker. All information pertaining to the identification of the graves needs to be documented for the application of a SAHRA permit. The notices need to be in at least 3 languages, English, and two other languages. This is a requirement by law.
- Notices of the intention needs to be placed in at least two local newspapers and have the same information as the above point. This is a requirement by law.
- Local radio stations can also be used to try contact family members. This is not required by law, but is helpful in trying to contact family members.
- During this time (60 days) a suitable cemetery need to be identified close to the development area or otherwise one specified by the family of the deceased.
- An open day for family members should be arranged after the period of 60 days so that they can gather to discuss the way forward, and to sort out any problems. The developer needs to take the families requirements into account. This is a requirement by law.

- Once the 60 days has passed and all the information from the family members have been received, a permit can be requested from SAHRA. This is a requirement by law.
- Once the permit has been received, the graves may be exhumed and relocated.
- All headstones must be relocated with the graves as well as any items found in the grave