



**SATIVA TRAVEL AND ENVIRONMENTAL
CONSULTANTS (PTY) LTD**

**PHASE 1:
HERITAGE IMPACT ASSESSMENT**

**A HERITAGE IMPACT ASSESSMENT REPORT FOR THE PROPOSED
CONSTRUCTION OF RESEVOIRS AND WATER RETICULATION PIPELINES IN
KWAXOLO AREA IN UGU DISTRICT MUNICIPALITY OF KWAZULU NATAL
PROVINCE.**

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DOCUMENT INFORMATION

Item	Description
Proposed development and location	The construction of reservoirs and water reticulation pipelines in KwaXolo area in Ugu District Municipality in Kwa-Zulu Natal Province.
Title	Proposed construction of reservoir and water reticulation pipelines in KwaXolo area in Ugu District Municipality in KwaZulu Natal Province: Archaeological and Heritage Impact Assessment Report
Purpose of the study	The purpose of this document is an Archaeological and Heritage Impact Assessment report that describes the cultural values and heritage factors that may be impacted on by the proposed construction of reservoirs and water reticulation pipelines in KwaXolo area in Ugu District Municipality of Kwa-Zulu Natal Province.
1:50 000 Topographic Map	3030CB
Coordinates	See Figures 1-6
Municipalities	Ugu District Municipality.
Predominant land use of surrounding area	Vacant, agricultural, industrial, residential, road and transport (See land use map)
Developer	Ugu District Municipality
Heritage Consultant	Sativa Travel and Environmental Consultants (Pty) Ltd
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Authorship: This A/HIA Report has been prepared by Mr Trust Mlilo (Professional Archaeologist). The report is for the review of the Heritage Resources Agency (Amafa).

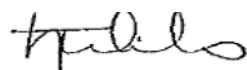
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Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the National Topographic Survey Map and Google Earth Pro.

Disclaimer: The Author is not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared. The Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the SAHRA Regulations and Guidelines regarding authorisation of the proposed pipeline and reservoir development project being proposed by Ugu District Municipality.

Signed by



March 2017

ACKNOWLEDGEMENTS

The authors acknowledge Keyenviro (Pty) Ltd and Mzansi Africa Civils for their assistance with project information, and the associated project BID as well as responding to technical queries related to the project.

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EXECUTIVE SUMMARY

This Archaeological and Heritage Impact Assessment (AIA/HIA) Report has been prepared to address requirements of Section 38 of the National Heritage Resources Act, Act 25 of 1999 and Kwa-Zulu Natal Heritage Act 4 of 2008. Sativa Travel and Environmental Consultants (STEC) was appointed by Keyenviro (Pty) Ltd to conduct this Archaeological and Heritage Impact Assessment (AIA/HIA) Study for the proposed construction of reservoirs and water reticulation pipelines in KwaXolo area in Ugu District Municipality. The proposed water reticulation project is situated within the Ugu District Municipality areas of Kwa-Zulu Natal Province. This report includes an impact study on potential archaeological and cultural heritage resources that may be associated with the proposed pipeline and reservoir sites development project area. This study was conducted as part of the specialist input for the Basic Assessment process. The proposed development consists of construction of 3 reservoirs and water reticulation pipelines. The reservoir sites and pipeline routes have been determined by the developer, Ugu District Municipality and project information has been passed to STEC research team by the project EAP. Analysis of the archaeological, cultural heritage, environmental and historic contexts of the study area predicted that archaeological sites, cultural heritage sites, burial grounds or isolated artefacts were likely to be present on the affected landscape. The field survey was conducted to test this hypothesis and verify this prediction within the proposed pipeline servitudes and reservoir sites. The proposed development sites are located to the north west of Port Shepstone.

The report makes the following observations:

- The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed project.
- Most sections of the project area are very accessible and the field survey was effective enough to cover most sections of the project receiving environs. However, some portions of the proposed pipeline routes had limited access because of the thick vegetation cover.
- The project area is predominantly agricultural and residential area.
- Most of the proposed pipeline routes are severely degraded from existing developments such as agriculture, bulk water pipelines, powerlines lines, residential infrastructure, and access roads.
- Although the possibility of archaeological or historical sites associated with the general project area is high, however, from a contextual studies perspective, no medium to high significance archaeological, heritage landmark or monument was recorded on the direct path of the proposed pipeline routes

The report sets out the potential impacts of the proposed development on heritage resources and recommends appropriate safeguard and mitigation measures that are designed to minimize the impacts where appropriate. The Report makes the following recommendations:

- The proposed development may be approved by Amafa to proceed as planned subject to heritage monitoring measures being incorporated into the project construction EMP.
- Should construction work commence for this project:
- The proposed pipeline construction teams should be inducted on the significance of the possible archaeological resources that may be encountered during subsurface construction work before they work on the area in order to ensure appropriate treatment and course of action is afforded to any chance finds.
- If archaeological materials are uncovered, work should cease immediately and the Amafa/ SAHRA be notified and activity should not resume until appropriate management provisions are in place.
- The findings of this report, with approval of the Amafa/ SAHRA, may be classified as accessible to any interested and affected parties within the limits of the relevant legislation.

The conclusion of the HIA is that the impacts of the proposed development of the cultural environmental values are not likely to be significant if the EMP includes recommended safeguard and mitigation measures identified in this report.

ABBREVIATIONS

AIA	Archaeological Impact Assessment
BID	Background Information document
CRM	Cultural Resource Management
ECO	Environmental Control Officer
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EM	Environmental Manager
EMP	Environmental Management Plan
ESA	Early Stone Age
HIA	Heritage Impact Assessment
KM	Kilometres
KV	Kilo Volts
KZN	KwaZulu Natal
LIA	Late Iron Age
M	Metres
MSA	Middle Stone Age
NHRA	Nation Heritage Resources Act, Act 25 of 1999
PM	Project Manager
SM	Site Manager
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Agency Data Base

KEY CONCEPTS AND TERMS

Periodization Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below;

Early Stone Age (~ 2.6 million to 250 000 years ago,)

Middle Stone Age (~ 250 000 to 40-25 000 years ago,)

Later Stone Age (~ 40-25 000, to recently, 100 years ago,)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

Definitions Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best-practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture or archaeology of human development.

Cultural significance is determined by means of aesthetic, historic, scientific, social or spiritual values for past, present or future generations.

Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

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

Archaeological site/materials are remains or traces of human activity that 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. According to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), no archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority.

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

Chance finds means archaeological artefacts, features, structures or historical remains accidentally found during development.

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

A site is a distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

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

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

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the prehistorical, historical or the relatively recent past.

Study area or 'project area' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data and limited field walking in order to establish the presence of all possible types of heritage resources in any given area.

1. INTRODUCTION

1.1 Background

This Archaeological and Heritage Impact Assessment (AIA/HIA) Report has been prepared by Sativa Travel and Environmental Consultants (Heritage Division) for the purpose of Environmental Impact Assessment being conducted by Keyenviro (Pty) Ltd on behalf of Ugu District Municipality. Ugu District Municipality is proposing to construct new reservoirs and water reticulation pipelines in KwaXolo area of Kwa-Zulu Natal Province. This report details the field study, results of the study as well as discussion on the anticipated impacts of the proposed development as is required by Section 38 of the National Heritage Resources Act, Act 25 of 1999 and Kwa-Zulu Natal Heritage Act 4 of 2008. It focuses on identifying and assessing potential impacts on archaeological resources as well as on other physical cultural properties including historical heritage resources in relation to the proposed Water reticulation development. STEC heritage specialists undertook the assessments, research and consultations required for the preparation of the report comprising archaeological and heritage impacts for the purpose of ensuring that the cultural environmental values are taken into consideration and reported into the Basic Assessment Process.

The study was designed to ensure that any significant archaeological or cultural physical property or sites are located and recorded, and site significance is evaluated to assess the nature and extent of anticipated impacts from the proposed development. The assessment includes recommendations to manage the expected impact of the pipeline development route. The report includes recommendations to guide heritage authorities in making appropriate decision with regards to approval process for the proposed development. The report concludes with detailed recommendations on heritage management associated with the proposed pipeline development work. STEC, an independent consulting firm, conducted the assessment; research and consultations required for the preparation of the HIA report in accordance with obligations set out in the NHRA as well as the environmental management legislations.

In line with SAHRA guidelines, this report, not necessarily in that order, provides:

- 1) Executive summary
- 2) Methodology
- 3) Information with reference to the desktop study
- 4) Map and relevant images and data
- 5) GPS co-ordinates
- 6) Nature of proposed development and its location
- 7) Directions to the site
- 8) Site description and interpretation of the cultural area where the project will take place

- 9) Management details, description of affected cultural environment, photographic records of the project area
- 10) Recommendations regarding the significance of the site and recommendations regarding further monitoring of the site
- 10) Conclusion.

1.2 Location of the proposed pipeline development

The project area is located in KwaXolo within the jurisdiction of Ugu District Municipality. The project is accessible via N2 southbound then onto R620 in Southbroom which is approximately 30km from Port Shepstone. Please note the pipeline area of focus is highlighted in black on the Google images and coordinates [30°55'31S, 30°15'34E] (see Figures 1-6)

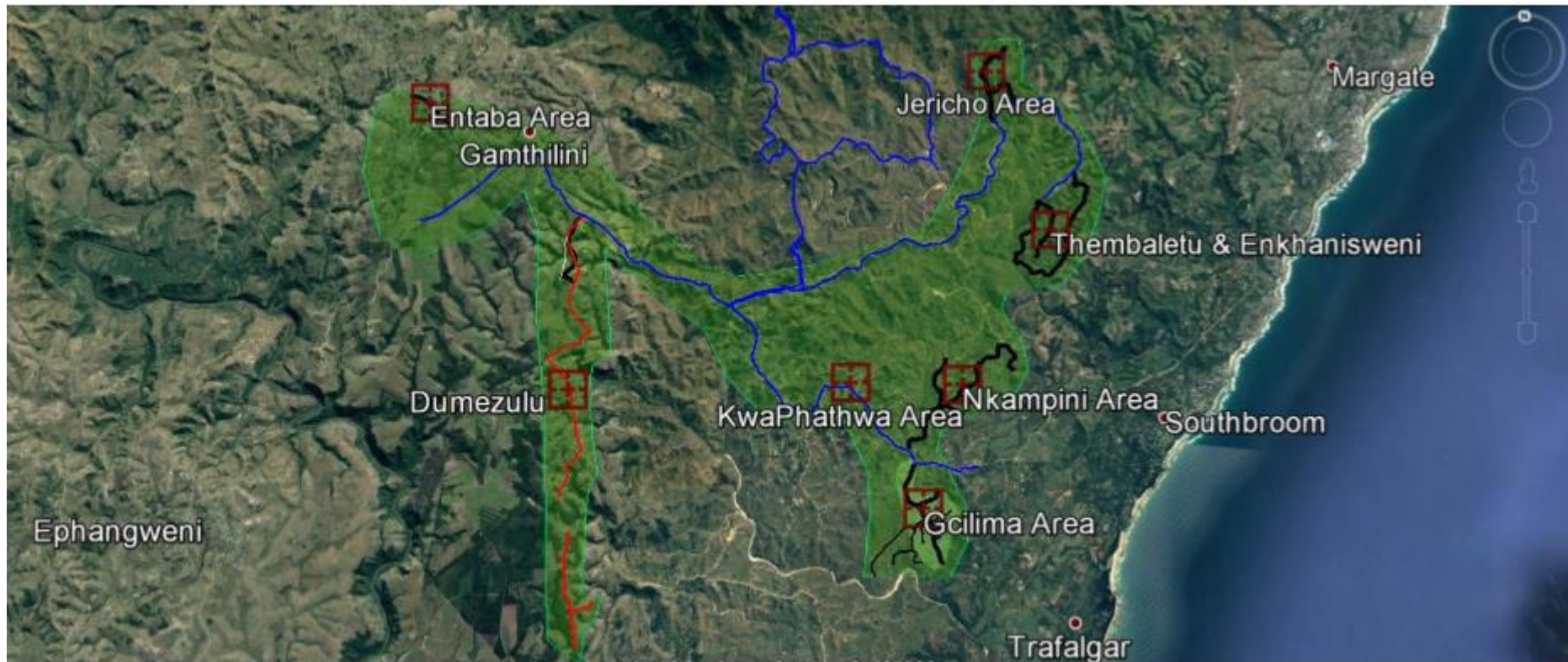


Figure 1: proposed KwaXolo Existing & Proposed Bulk and Reticulation Water Supply



Fig 3.- Proposed Reservoirs

Key


-  - Proposed Reservoirs



Figure 2: - Jericho Area Site and directions to access to the proposed Pipeline servitude and reservoir sites (Keyenviro 2017)

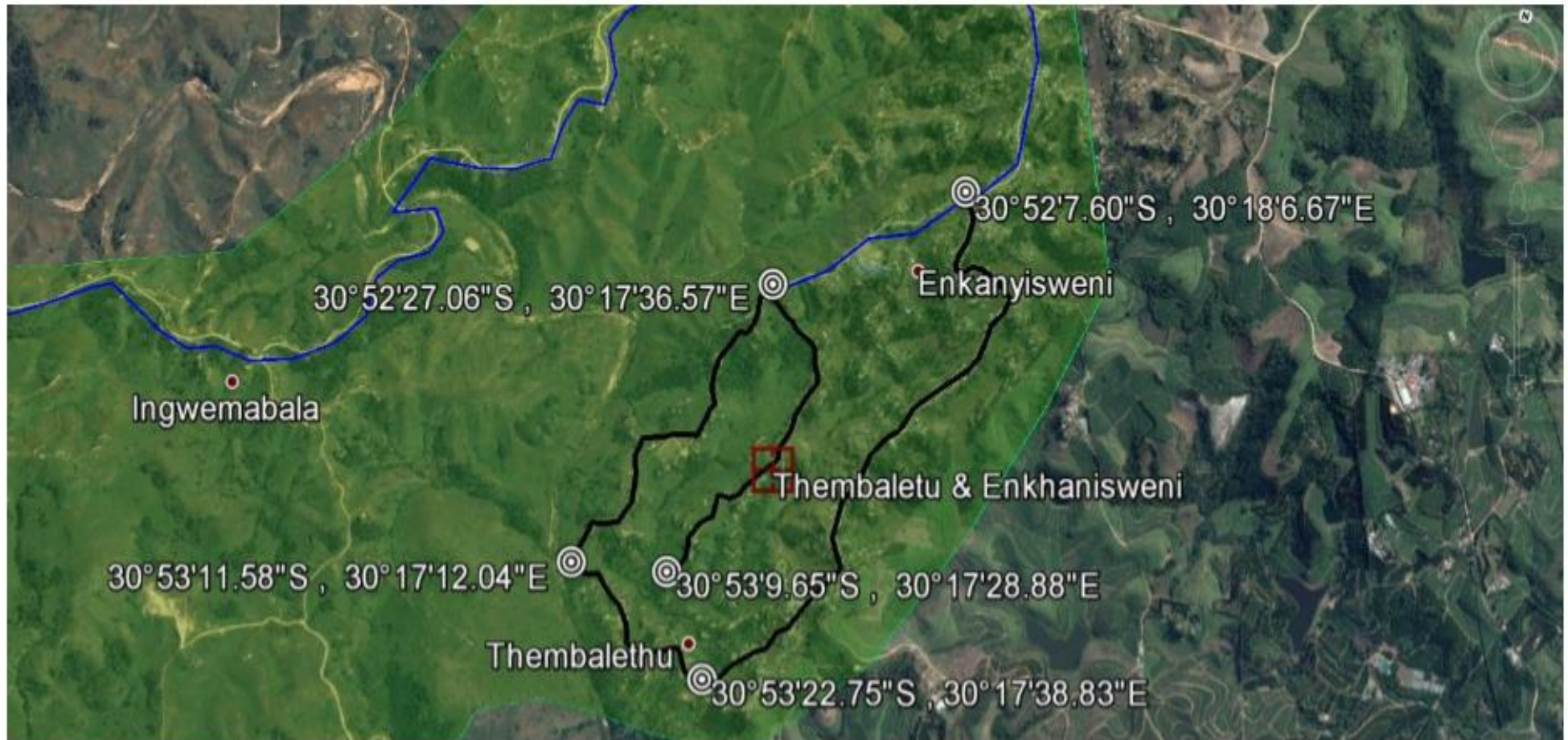


Figure 3: Proposed pipeline marked in blue and reservoir sites at Enkanyisweni & Thembalethu Areas (Keyenviro 2017)

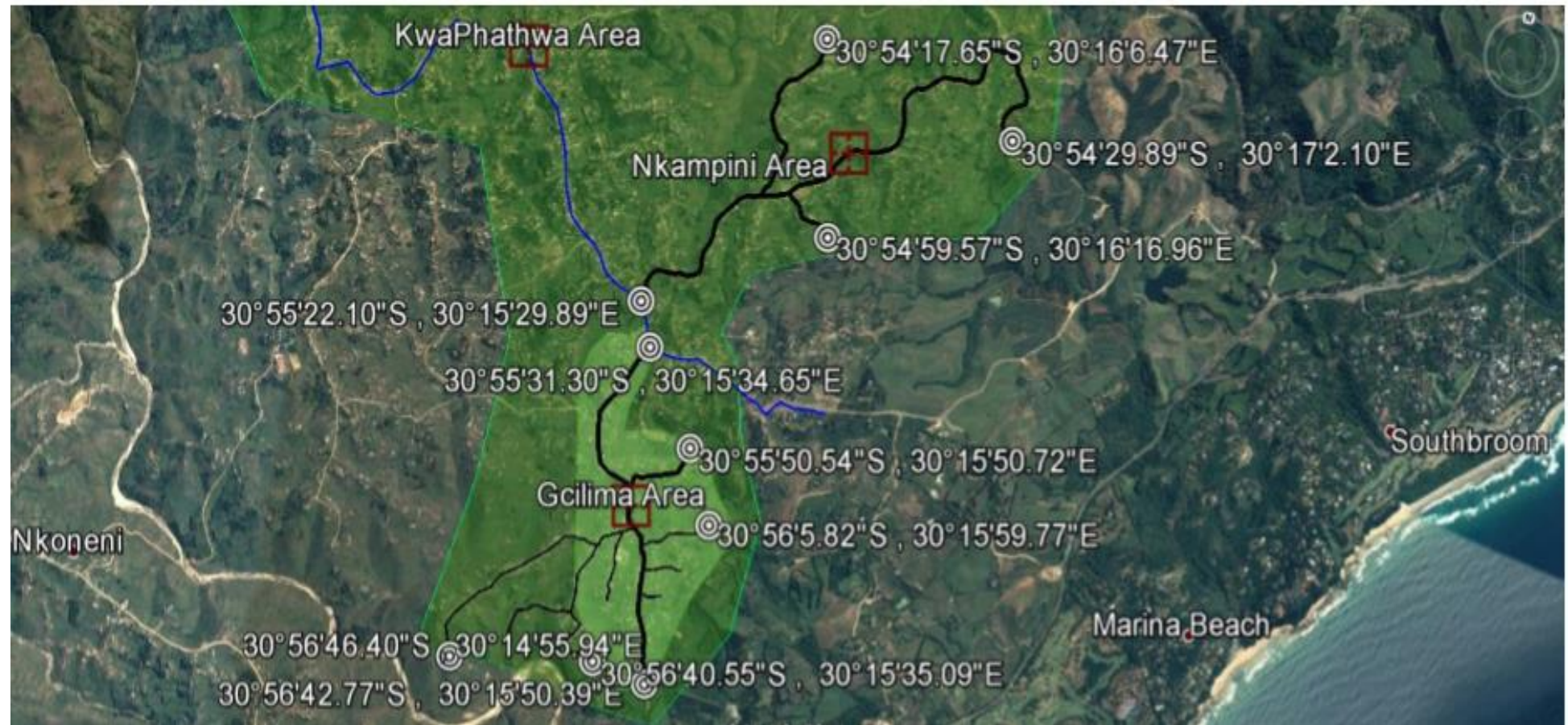


Figure 4: Proposed pipeline marked in blue and associated infrastructure at KwaPhathwa, Nkampini & Gcilima Areas (Keyenviro 2017)

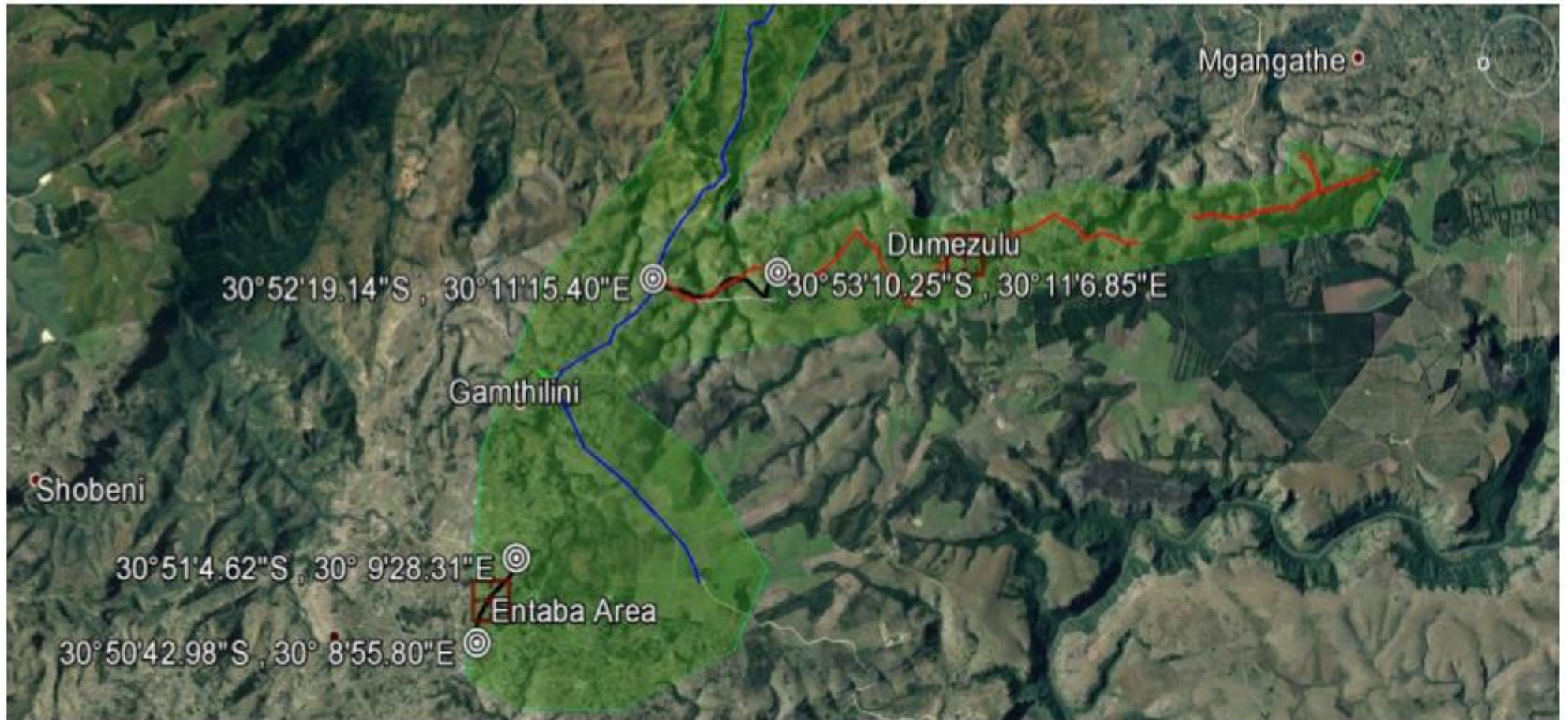


Figure 5: Proposed pipeline marked in blue and associated infrastructure at Dumezulu & Entaba Areas (Keyenviro 2017)

1.3 Description of the proposed project

The proposed project entails construction of reservoirs and pipelines in KwaXolo area as follows:

- Construction of 75-110mm reticulation pipelines 7.2km
- Construction of 90-110mm Reticulation pipelines 7km
- Construction of 90-110mm Reticulation pipelines
- Construction of 1ML concrete reservoir
- Construction of rising main
- Construction of 750kl concrete reservoir
- Construction of gravity main 5.2km
- Entaba Construction of reticulation pipelines
- Dumezulu Construction of 110mm reticulation pipelines □ Construction of 1ML Reservoir 2.1

2. LEGAL REQUIREMENTS

This HIA report addresses the requirements as is stipulated in the KwaZulu Natal Heritage Act 4 of 2008 and the NHRA Act 25 of 1999 Section 38 as well as EIA Terms of Reference in relation to the assessment of impacts of the proposed pipeline development on the cultural and heritage resources associated with the receiving environment. The statutory mandate of heritage impact assessment studies is to encourage and facilitate the protection and conservation of archaeological and cultural heritage sites, in accordance with the provisions of the KwaZulu Natal Heritage Act 4 of 2008, National Heritage Resources Act, Act 25 of 1999 and auxiliary regulations. Therefore, in pre-development context, heritage impact assessment study is conducted to fulfil the requirements of Section 38 (1) of the National Heritage Resources Act (No 25 of 1999).

The legislations require that when constructing a linear development exceeding 300m in length or developing an area exceeding 5000 m² in extent, the developer must notify the responsible heritage authority of the proposed development and they in turn must indicate within 14 days whether an impact assessment is required. The NHR Act notes that “any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent”, the heritage authority here being KZN Provincial Authority (Amafa KwaZulu Natal).

Both the national legislations and provincial provisions provide protection for the following categories of heritage resources:

Landscapes, cultural or natural;

- Buildings or structures older than 60 years;
- Archaeological Sites, palaeontological material and meteorites;

- Burial grounds and graves;
- Public monuments and memorials;
- Living heritage (defined as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships).

Furthermore, the proposed development is guided and governed by legislative acts and regulations including environmental, spatial planning, land use and heritage management laws and regulations. The following acts have relevance to the management of heritage sites (archaeological, cultural and historical sites) wherever they are found in the Republic:

- Environmental Conservation Act, No.73 of 1989
- National Environment Management Act (NEMA), No.107 of 1998

3. TERMS OF REFERENCE

The author was requested to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of each of the pipeline routes including any known data on affected areas;
- Provide details on methods of study; potential and recommendations to guide the Amafa to make an informed decision with regards to authorization of the proposed development.

Photographic Presentation of the project area



Plate 1: Photo 1: View of site for new reservoir near existing reservoir at Gcilima (Photograph © by Author 2017)



Plate 2: Photo 2: View of the proposed site for new reservoir at Gcilima (Photograph © by Author 2017)



Plate 3: Photo 3: View of existing pipeline and water reticulation infrastructure which are earmarked for upgrading (Photograph © by Author 2017)



Plate 4: Photo 4: View of proposed pipeline route (Photograph © by Author 2017) Note that the new pipeline is intended to replace the existing pipeline along the same servitude



Plate 5: Photo 5: View of existing pipeline earmarked for upgrading running through homesteads (Photograph © by Author 2017)



Plate 6: Photo 6: View of graves within homesteads located near pipeline route (Photograph © by Author 2017)



Plate 7: Photo 7 shows proposed pipeline route running along road servitude (Photograph © by Author 2017). Note that the proposed pipeline will run along existing corridor.



Plate 8: Photo 8 shows proposed reservoir site (Photograph © by Author 2017)



Plate 9: Photo 9 view of proposed reservoir site (Photograph © by Author 2017)



Plate 10: Photo 10 shows proposed pipeline route (Photograph © by Author 2017)



Plate 11: Photo 11: View of T-off position of proposed pipeline (Photograph © by Author 2017)



Plate 12: Photo 12: View of pipeline route along road servitude (Photograph © by Author 2017)



Plate 13: Photo 13: View of pipeline route along road servitude (Photograph © by Author 2017)



Plate 14: Photo 14: View of pipeline running along road servitude and homesteads (Photograph © by Author 2017)



Plate 15: Photo 15: View of pipeline route along road servitude (Photograph © by Author 2017)



Plate 16: Photo 16: View of pipeline route along road servitude (Photograph © by Author 2017)



Plate 17: Photo 17: View of pipeline route along road servitude (Photograph © by Author 2017)



Plate 18: Photo 18: View of proposed reservoir site (Photograph © by Author 2017)



Plate 19: Photo 19: View of proposed reservoir site (Photograph © by Author 2017)



Plate 20: Photo 20: View of proposed reservoir site (Photograph © by Author 2017)



Plate 21: Photo 21: View of proposed reservoir site (Photograph © by Author 2017)



Plate 22: Photo 22: View of proposed reservoir site (Photograph © by Author 2017)



Plate 23: Photo 23: View of a grave located within the development area (Photograph © by Author 2017. Note that the site will not be affected as there is adequate buffer zone of more than 80m from the pipeline route.



Plate 24: Photo 24: View of proposed pipeline route (Photograph © by Author 2017)

4. METHODOLOGY

The proposed water reticulation development requires clearance and authorisation from government compliance agencies (DEA) including the heritage authority of Amafa. Key A/HIA objectives for this project are to:

- Fulfil the statutory requirements of Section 38 of the National Heritage Resources Act, Act 25 of 1999 and KwaZulu Natal Heritage Act 4 of 2008.
- Identify and describe, (in terms of their conservation and / or preservation importance) sites of cultural and archaeological importance that may be affected by the proposed pipeline development. This study identified sites and features of historical, social, scientific, cultural, and aesthetic significance within the broad study area.
- Assess the significance of the resources where they are identified.
- Evaluate the impact thereon with respect to the socio-economic opportunities and benefits that would be derived from the proposed development.
- Provide guidelines for protection and management of identified heritage sites and places (including associated intangible heritage resources management that may apply).
- Consult with the affected and other interested parties, where applicable, regarding the impact on the heritage resources in the project's receiving environment.
- Make recommendations on mitigation measures with the view to reduce specific adverse impacts and enhance specific positive impacts on the heritage resources.
- Take responsibility for communicating with the Amafa/ SAHRA and other authorities in order to obtain the relevant permits and authorization with reference to heritage aspects.

In order to meet the objectives of the A/HIA Phase 1 study, the following tasks were conducted: 1) site file search (SAHRIS), 2) limited literature review, 3) consultations with the affected communities, 4) completion of a field survey and assessment and 5) analysis of the acquired data and report production. The following tasks were undertaken:

- Preparation of a predictive model for archaeological heritage resources in the study area.
- A review and gap analysis of archaeological, historical, and cultural background information, including possible previous heritage consultant reports specific to the affected project area, the context of the study area and previous land use history as well as a site search;
- Field survey of sampled sections of the pipeline routes within the study area, in order to test the predictive model regarding that heritage sites in the area;
- Physical cultural property recording of any identified sites or cultural heritage places;
- Identification of heritage significance; and
- Preparation of A/HIA report with recommendation, planning constraints and opportunities associated with the proposed development.

Walking surveys were conducted in order to identify and document archaeological and cultural sites in the areas affected by the proposed pipeline development. Formal and informal settlements, cornfields and vegetable fields, grazing lands, vegetated river valleys; access and main road infrastructures, bulk water pipelines, existing transmission and distribution, residential areas and other auxiliary infrastructures dominate the affected project area. The entire project area was accessible through a network of main roads, district roads and farm tracks used to access the settlements. Although limited sections of ground surface were covered with grass and thick bushes, this did not impede identification of possible archaeological sites in surveyed areas particularly those earmarked for the pipeline development. Geographic coordinates were obtained with a handheld Garmin GPS global positioning unit. Photographs were taken as part of the documentation process during field study.

4.1 Assumptions and Limitations

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground level. Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted immediately, and a competent heritage practitioner, Amafa or SAHRA must be notified in order for an investigation and evaluation of the find(s) to take place (see KwaZulu Natal Heritage Act 4 of 2008 or NHRA (Act No. 25 of 1999), Section 36 (6). Recommendations contained in this document do not exempt the developer from complying with any national, provincial, and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. The author assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report

The field survey did not include any form of subsurface inspection beyond the inspection of burrows, road cut sections, and the sections exposed by erosion or field ploughing. Some assumptions were made as part of the study and therefore some limitations, uncertainties and gaps in information would apply. It should however, be noted that these do not invalidate the findings of this study in any significant way:

- The proposed pipeline development will be limited to specific right of corridors as detailed in the development layout (Figure 1).
- The construction team to provide link and access to the pipeline servitude and service sites will use the existing access roads and there will be no construction without any major deviations.
- Given the heavily degraded nature on most affected project area and the level of high existing developments within the affected landscape, most sections of the project area have low potential to yield significant in situ archaeological or physical cultural properties.

- No excavations or sampling were undertaken, since a permit from heritage authorities is required to disturb a heritage resource. As such the results herein discussed are based on indicators observed on the surface. However, these surface observations concentrated on exposed sections such as road cuts and clear farmland.
- This study did not include any ethnographic and oral historical studies nor did it investigate the settlement history of the area.

4.2 Consultation

Some residents of the KwaXolo area were consulted regarding the existence of burial sites in the project area. The EIA Public Participation Process invited comments from affected municipalities and other interested parties on any archaeological heritage matter related to the proposed development.

5. CULTURE HISTORY BACKGROUND OF THE PROJECT AREA

The project area is located in the KwaXolo area in the Ugu District Municipality of KwaZulu Natal Province of South Africa that boasts a rich traditional history of contemporary Zulu (Huffman 2007, Coetzee 2010). Archaeological and heritages studies in the KwaZulu Natal region indicate that the area is of high pre-historic and heritage significance. It is in fact a cultural landscape where Stone Age, Iron Age and Historical period sites contribute the bulk of the cultural heritage of the region (also Bryant 1965, Maggs 1989, Huffman, 2007). However, the study area has never been systematically surveyed for archaeological sites in the past (Prins 2013, 2016).

Stone Age sites are general identifiable by stone artefacts found scattered on the ground surface, as deposits in caves and rock shelters as well as in eroded gully or river sections. Archaeological sites recorded in the project region confirms the existence of Stone Age sites that conform to the generic SA periodization split into the Early Stone Age (ESA) (2.5 million years ago to 250 000 years ago), the Middle Stone Age (MSA) (250 000 years ago to 22 000 years ago) and the Late Stone Age (LSA) (22 000 years ago to 300 years ago). Stone Age sites in the region are also associated with rock painting sites. Cave sites also exist on the landscape south west of the project area.

From an archaeological perspective, the Ugu area, like most of KwaZulu Natal region has potential to yield Stone Age period sites (also see Deacon and Deacon, 1997). The greater Port Shepstone area has been surveyed by archaeologists from the then Natal Museum and Natal Parks Board in the 1970's and 1980's (Prins 2013). Further inland the Paddock and greater Oribi Gorge areas have been more systematically surveyed by archaeologists such as J. H. Cable in the early 1980's (Cable 1984) and later by various archaeologists attached to the Natal Museum (Mazel 1989; Mitchell 2005). Literature in the KwaZulu-Natal Museum, indicates that the greater Paddock and Port Shepstone areas are rich in archaeological sites covering diverse time-periods and cultural traditions. These include Early, Middle and later Stone Age sites, Early Iron Age sites, Later Iron Age sites, and some historical sites (Prins 2013). Various buildings and farmsteads belonging to the Victorian and Edwardian periods occur in the area

especially in the close environs of Paddock (Prins 2016). However, the specific affected project-receiving environment has low potential for Stone Age sites (Prins 2016).

Stone Age sites of all the main periods and cultural traditions occur along the coastal cordon in the immediate vicinity of Port Shepstone closer towards the coast. Most of these occur in open air contexts as exposed by excessive erosion. The occurrence of Early Stone Age tools in the near vicinity of permanent water resources is typical of this tradition. These tools can be attributed to early hominins such as *Homo erectus*. Based on typological criteria they most probably date back to between 300 000 and 1.7 million years ago. A few MSA blades and flakes which date back to between 40 000 and 200 000 years ago are on record in the project area. The later Stone Age flakes and various rock painting sites associated with San are also on record in the general project area (Prins 2013a, 2013b, 2015). These most probably dates back to between 200 and 20 000 years ago.

Archaeological sites in the vicinity of the project area include two Middle Stone Age sites and eleven Later Stone Age rock art sites situated within the greater Oribi Gorge and adjacent areas to the immediate east of the study area. The rock art sites form part of the eastern seaboard coastal rock art zone. Most of these occur in sandstone shelters and depict red monochrome paintings.

The Iron Age of the KwaZulu Natal region dates back to the 5th Century AD when the Early Iron Age (EIA) proto-Bantu-speaking farming communities began arriving in this region, which was then occupied by hunter-gatherers. These EIA communities are archaeologically referred to as the Kwale branch of the Urewe EIA Tradition (Huffman, 2007: 127-9). The Iron Age communities occupied the foot-hills and valley lands introducing settled life, domesticated livestock, crop production and the use of iron (also see Maggs 1984a; 1984b; Huffman 2007). Alongside the Urewe Tradition was the Kalundu Tradition whose EIA archaeological sites have been recorded along the KwaZulu Natal region. From about 15 00 AD the region was occupied by new coming groups of Late Iron Age farmers of the Kalundu Tradition (ibid). The region was the centre of immigration and migration of different African groups some of which are ancestors of the contemporary Zulu predominant in the region. Early Iron Age sites of Mzuluzi (AD500-700), Ndongondwane (AD 700-800) and Ntshekane (AD 800 -900) were recorded in the Ugu District Municipality (Maggs 1989:31, Huffman 2007:325-462. According to oral tradition the Ugu area was occupied by the Cele Clan (Bryant 1965). It is believed that the Cele Clan arrived in the area around 1828 (Bryant 1965).

Throughout the middle of the 1800s the region witnessed the Mfecane migrations and displacements linked to Tshaka's expansionist policy. The Voortrekkers arrived in Natal regions in the shadow of the weakened African kingdoms and chiefdoms in the aftermath of the Mfecane. This effectively ushered in new era of colonial occupation by succeeding Afrikaans and British colonial administration authorities through the last half of the 1800s and into the last 1900s. By 1850s the region witnessed the influx of more settler communities which triggered settler wars between the African chiefdoms and the incoming Afrikaner settlers. Some of these colonial wars and battles lasted

into Anglo-Boer wars of 1899-1902. The later effectively led to complete subjugation of African communities to settler administration starting as part of the ZAR of Transvaal. There after the region was subsequently annexed by the British and effectively placed the majority of African communities under the Union of South Africa in 1910, which eventually ended with the establishment of the new South Africa in 1994.

Later Iron Age sites also occur in the greater Port Shepstone area. These were Bantu speaking agropastoralists who arrived in southern Africa after 1000 year ago via East Africa. Later Iron Age communities in KwaZulu-Natal were the direct ancestors of the Zulu-speaking people (Huffman 2007). Many African groups moved through the study area due to the period of tribal turmoil as caused by the expansionistic policies of king Shaka Zulu in the 1820's and subsequent civil wars in Zululand to the north. It is known from oral history that the greater project area was inhabited by Zulu refugees in the 19th century (Bryant 1965) especially by members of the abakwaCele and Lushaba clans. These clans arrived in the project area around 1828 soon after the murder of King Shaka when they were being pursued by supporters of King Dingane (ibid). However, it appears that the lower densely wooded valley areas were only occupied later. According to oral history most of the historical settlement of the area took place on the higher altitude grassland areas.

5.1 Intangible Heritage

As defined in terms of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) intangible heritage includes oral traditions, knowledge and practices concerning nature, traditional craftsmanship and rituals and festive events, as well as the instruments, objects, artefacts, and cultural spaces associated with group(s) of people. Thus, intangible heritage is better defined and understood by the particular group of people that uphold it. In the present study area, very little intangible heritage remains because no historically known groups occupied the study area and most of the original settler descendants moved away from the area.

5.2 SAHRIS DATABASE AND IMPACT ASSESSMENT REPORTS IN THE PROJECT AREA

Several Phase 1 Heritage Impact Studies were conducted in the general vicinity of the study area. The studies include powerline project completed by Prins (2013). No sites were recorded, but the report mentions that structures older than 60 years occur in the area, Prins (2013a, 2013b, 2013c, 2015, 2016) for a township development survey also recorded no sites. Murimbika and Mlilo (2014) noted graves located within homesteads. Prins (2013a, 2013b, 2013c, 2015) recorded no sites in a project area.

6. RESULTS OF THE ARCHAEOLOGICAL/HERITAGE ASSESSMENT STUDY

The proposed pipeline routes are located on vacant land in KwaXolo area. The proposed pipeline routes and reservoir sites have been established through consideration of biophysical, social, technical, and cultural aspects. The process will aim to provide a final site selection of the proposed pipe line route based on biophysical, social,

cultural, and technical considerations. The following section presents results of the archaeological and Heritage survey conducted along the proposed reservoir sites and pipeline routes.

6.1 GCILIMA SECTION

Archaeological and Heritage Site

The pipeline route did not yield any verifiable archaeological sites or material. The affected landscape is heavily degraded from previous and current agricultural land use, and from residential property developments (see Figure 1). This limited the chances of encountering significant *in situ* archaeological sites to be preserved *in situ*.

The proposed Gcilima pipeline route traverse through heavily disturbed landscape (see Figure 4). There are residential, commercial agricultural fields, grazing land; railway lines, bulk water pipelines and pipelines, roads and other associated infrastructures across the entire project area. As such the proposed pipeline installations, will be an additional development on the project area (Figure 1, also see Plates 1 to 13). The area affected by the proposed development is broad and the pipeline will traverse through 7km servitude and it was assumed that there was always a very high chance of finding archaeological sites. However, the chances of recovering significant archaeological materials were seriously compromised and limited due to infrastructural developments and other destructive land use patterns such as deep ploughing, bulk water pipeline, road works and residential areas that already exist on the project area.

Based on the field study results and field observations, the author concluded that the receiving environment for the proposed pipeline development has low to medium potential to yield previously unidentified archaeological sites during subsurface excavations and construction work associated with the proposed distribution pipeline development.

Historical Buildings and Structures

The Port Shepstone area has a number of historical sites, which are mostly building and structures (Prins 2013). Although the affected general landscape is associated with broader historical events such as white settler migration, colonial wars and the recent African peopling of the region, no listed specific historical sites are on the direct path of the proposed pipeline route. Abandoned remains of recent homesteads are on record in the project area but none were recorded along the pipeline servitude.

Burial grounds and graves

The field survey recorded one traditional burial site at GPS Coordinates 26° 06' 17.67" S 27° 41' 08.59" E within a home stead near the pipeline route. The burial site is located approximately 25m from the existing pipeline servitude. Although the grave is within safe buffer zone of 20m from the proposed development, it is important to mark all

significant heritage resources near any development proposal to avoid accidental damage especially by heavy construction equipment. The burial site has 4 graves located within a fenced homestead. It is comprised of traditional graves marked by oval shaped stone piles and headstones as well as graves marked by cement plaster or tombstones with inscribed headstones. The proposed pipeline route will not affect the burial site.

Burial grounds and gravesites are accorded the highest social significance threshold (see Appendix 3). They have both historical and social significance and are considered sacred. Wherever they exist or not, they may not be tampered with or interfered with during any development. It is important to note that the possibility of encountering human remains during subsurface earth moving works anywhere on the landscape is ever present. Although the possibility of encountering previously unidentified burial sites is low on the distribution pipeline project route, should such sites be identified during subsurface construction work, they are still protected by applicable legislations and they should be protected (also see Appendixes for more details).

Historical Monuments and Memorials

There are several Historical Monuments, which are on record in the project area, but none of them is on the direct path of the proposed pipeline route.

Mitigation Measures

The recorded burial site must be clearly demarcated during construction and the affected family must be duly informed about the proposed development and potential impacts on graves.

6.2 ENTABENI (SIGODADENI)

Archaeological and Heritage Site

The Entabeni pipeline route was accessed alongside the Gcilima pipeline route. The proposed pipeline route did not yield any confirmable archaeological sites or material. Similarly, the affected landscape is heavily degraded from previous and current agricultural land use and from infrastructure developments (see Figure 1-6). Given the situation, the chances of encountering significant *in situ* archaeological sites are limited.

The proposed pipeline corridor traverses through heavily disturbed landscape (see Figure 1-6). There are residential commercial agricultural fields, grazing land, bulk water pipelines and pipelines, roads and other associated infrastructures across the entire project area. As such the proposed pipeline installations, will be an additional development on the project area (Figure 1, also see Plates 8-13). It is assumed that the chances of recovering significant archaeological materials were seriously compromised and limited due to infrastructural developments and other destructive land use patterns such as deep ploughing, road works and residential areas

that already exist on the project area. The study concluded that the proposed pipeline route would cause minimum damage to archaeological remains.

Historical Buildings and Structures

None were recorded along the pipeline route.

Burial grounds and graves

None was recorded along the proposed pipeline route.

Historical Monuments and Memorials

There are no sites within the pipeline servitude that are on the National Heritage List. However, it should be noted that there are several historical monuments listed on SAHRIS Data base in the general project area. The proposed pipeline route will not impact on any of the listed heritage sites.

Mitigation Measures

No mitigation required for this pipeline route

6.3 NKAMBINI

Archaeological and Heritage Site

The pipeline route was assessed alongside the Gcilima and Ntabeni pipeline routes. The Nkambini pipeline route did not yield any verifiable archaeological sites or material either. The affected landscape is similarly degraded from previous and current agricultural land use, and infrastructure developments (see Figure 1). There exist, subsistence and commercial agricultural fields, grazing land and rail and pipelines, roads, and other associated infrastructures across the entire project area. The proposed pipeline installations will be additional to *in situ* developments already on project area (Figure 4; also, see Plates 13 to 17). As such the chances of recovering significant archaeological materials *in situ*, particularly significant open settlement sites were seriously compromised and limited.

Historical Buildings and Structures

The Nkambini pipeline route is associated with historical events such as colonial era white settler migration, colonial wars, and the recent African peopling of the region, however, no listed specific historical sites are on the proposed pipeline route

Burial grounds and graves

The field survey did not record any burial site near the Nkambini pipeline route. Although the possibility of encountering previously unidentified burial sites is low on the pipeline route, should such sites be identified during

subsurface construction work, they are still protected by applicable legislations and they should be protected (also see Appendixes for more details).

Historical Monuments and Memorials

There are no listed monuments on record on the direct path of the proposed pipeline route.

Mitigation Measures

No mitigation required for this pipeline route

6.4 JERICO

Archaeological and Heritage Site

The Jerico pipeline route was assessed alongside the Gcilima and Nkambini pipeline routes. The Jerico pipeline route did not yield any verifiable archaeological sites or material either. The affected landscape is similarly degraded from previous and current agricultural land use, and infrastructure developments (see Figure 1). There exist, commercial agricultural fields, grazing land and rail and pipelines, roads, and other associated infrastructures across the entire project area. The proposed pipeline installations will be additional to in situ developments already on project area (Figure 2; also, see Plates 17 to 21). As such the chances of recovering significant archaeological materials *in situ*, particularly significant open settlement sites were seriously compromised and limited.

Historical Buildings and Structures

No listed specific historical sites were recorded along the Jerico Pipeline route

Burial grounds and graves

The field survey did not record any burial site near the Jerico pipeline route.

Historical Monuments and Memorials

There are no listed monuments on record on the direct path of the proposed Jerico pipeline route.

Mitigation Measures

No mitigation required for this pipeline route

6.5 THEMBALETHU AND NKANYISWENI

Archaeological and Heritage Site

The Thembaletu and Nkanyisweni pipeline route was also assessed alongside the Jerico, Gcilima, Nkambini and Thembaletu pipeline routes. The pipeline route did not yield any verifiable archaeological sites or material either.

The affected landscape is similarly degraded from previous and current agricultural land use, and infrastructure developments (see Figure 1). There exist, subsistence and commercial agricultural fields, grazing land and pipelines, roads, and other associated infrastructures across the entire project area. The proposed pipeline installations will be additional to *in situ* developments already on project area (Figure 1; also, see Plates 8 to 11). As such the chances of recovering significant archaeological materials *in situ*, particularly significant open settlement sites were seriously compromised and limited.

Historical Buildings and Structures

None were recorded along the proposed pipeline route.

Burial grounds and graves

The field survey did not record any burial site near the proposed pipeline route.

Historical Monuments and Memorials

There are no listed monuments on record on the direct path of the proposed pipeline route.

Mitigation Measures

No mitigation required for this pipeline route

CUMULATIVE IMPACTS

Although the project area is heavily degraded by agriculture, mining and other infrastructure developments, the proposed development will add to the cumulative impacts of the existing developments.

7. DISCUSSIONS

Several Heritage specialist studies were conducted in the study area since 2007. The studies were conducted for various infrastructure developments such as powerlines and substations, pipelines, and residential developments. These studies did not record any sites of significance for example, Anderson (2005), Prins (2013a, 13b, 13c, 2015, 2016& 2016) Murimbika and Mlilo (2014), Nemai (2013), Tomose (2015) and Van Schcalwyk and Wahl (2014). Therefore, the current study should be read in conjunction with previous Phase 1 Impact Studies conducted in the proposed project area.

No archaeological sites were recorded on all proposed pipeline routes and reservoir sites. The lack of confirmable archaeological sites recorded during the current survey is thought to be a result of three primary interrelated factors:

1. That proposed pipeline routes are situated within a heavily degraded area, and have reduced sensitivity for the presence of high significance physical cultural site remains, be they archaeological, historical, or burial sites, due to previous earth moving disturbances resulting from developments and other land uses in the project area.
2. That the survey focused on sample sections that had high potential to yield possible archaeological sites. Due to the length of the pipeline route, it was impractical to cover every inch of the project area. As such, there is a possibility that low to medium archaeological sites exist in the project area whereas the sampled sections fell outside sections with potential distinct archaeological sites.
3. Limited ground surface visibility on sections of all the proposed pipeline project area that were not cleared at the time of the study may have impeded the detection of other physical cultural heritage site remains or archaeological signatures immediately associated with the proposed pipeline route. This factor is exacerbated by the fact that the study was limited to general survey without necessarily conducting any detailed inspection of specific locations that will be affected by the proposed pipeline development.

The absence of confirmable and significant archaeological cultural heritage site is not evidence in itself that such sites did not exist in the project area. It may be that, given the dense development in most sections of the pipeline routes, if such sites existed before, changing earth-moving activities may have destroyed their evidence on the surface. Furthermore, some sections were not accessible due to thick vegetation cover and mine restrictions. Significance of the Sites of Interest is not limited to presence or absence of physical archaeological sites. Abandoned contemporary homestead remains were recorded in the vicinity of all the pipeline routes. This confirms the fact that the project area has several generations of human settlements. These discoveries testify to the significance of the project area as a cultural landscape of note, which has discernible links to local oral history and folk stories, environmental and ethnobotanical aesthetics, popular memories etc. associated with significance emanating from intangible heritage of the region.

Chance finds procedures

It has already been highlighted that sub-surface materials may still be lying hidden from surface surveys. Therefore, absence (during surface survey) is not evidence of absence all together. The following monitoring and reporting procedures must be followed in the event of a chance find, in order to ensure compliance with heritage laws and policies for best-practice. This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. Accordingly, all construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds.

- If during the construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- The senior site manager must then make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area before informing STEC.
- The client will then contact a professional archaeologist for an assessment of the finds who will in turn inform SAHRA/Amafa

8. CULTURAL HERITAGE SITE ASSESSMENT OF SIGNIFICANCE

The appropriate management of cultural heritage resources is usually determined on the basis of their assessed significance as well as the likely impacts of any proposed developments. Cultural significance is defined in the Burra Charter as meaning aesthetic, historic, scientific, or social value for past, present, or future generations (Article 1.2). Social, religious, cultural, and public significance are currently identified as baseline elements of this assessment, and it is through the combination of these elements that the overall cultural heritage values of the site of interest, associated place or area are resolved.

Not all sites are equally significant and not all are worthy of equal consideration and management. The significance of a place is not fixed for all time, and what is considered of significance at the time of assessment may change as similar items are located, more research is undertaken and community values change. This does not lessen the value of the heritage approach, but enriches both the process and the long-term outcomes for future generations as the nature of what is conserved and why, also changes over time (Pearson and Sullivan 1995:7). This assessment of the Indigenous cultural heritage significance of the Site of Interest as its environments of the study area is based on the views expressed by the Claimant and his community representatives consulted documentary review and physical integrity.

African indigenous cultural heritage significance is not limited to items, places or landscapes associated with pre-European contact. Indigenous cultural heritage significance is understood to encompass more than ancient archaeological sites and deposits, broad landscapes, and environments. It also refers to sacred places and story sites, as well as historic sites, including mission sites, memorials, and contact sites. This can also refer to modern sites with resonance to the indigenous community. The site of interest considered in this project falls within this realm of broad significance.

9. ASSESSMENT CRITERIA

The Guidelines to the SAHRA Guidelines and the Burra Charter define the following criterion for the assessment of cultural significance:

Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture, and material of the fabric; sense of place, the smells and sounds associated with the place and its use.

Historic Value

Historic value encompasses the history of aesthetics, science, and society, and therefore to a large extent underlies all of the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase, or activity. It may also have historic value as the site of an important event. For any given place, the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

Scientific value

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality, or representativeness, and on the degree to which the place may contribute further substantial information. Scientific value is also enshrined in natural resources that have significant social value. For example, pockets of forests and bushvelds have high ethnobotany value.

Social Value

Social value embraces the qualities for which a place has become a focus of spiritual, religious, political, local, national, or other cultural sentiment to a majority or minority group. Social value also extends to natural resources such as bushes, trees and herbs that are collected and harvested from nature for herbal and medicinal purposes.

10. STATEMENT OF SIGNIFICANCE

Aesthetic Value

The aesthetic values of the proposed pipeline routes, the and the overall project area are contained in the valley bushveld environment and landscape typical of this part of the KZN Province. The visual and physical relationship between study area and the surrounding historical Cultural Landscape demonstrates the connection of place to the local and oral historical stories of the African communities who populated this region going back into prehistory.

The proposed pipeline development will be situated within an environment and associated cultural landscape, which, although developed by existing settlements, remains representative of the original historical environment and cultural landscape of this part of KZN area. The local communities consider the project area a cultural landscape linked to their ancestors and history. However, the proposed developments will not alter this aesthetic value in any radical way since it will add to the constantly changing and developing settlements.

Historic Value

The Indigenous historic values of the Sites of Interest and overall study area are contained in the claim of possible historic homesteads being located on the affected area. The history of generations of the Sotho-Tswana and Ndebele clans is tied to this geographical region. Such history goes back to the pre-colonial period, through the colonial era, the colonial wars and subsequent colonial rule up to modern day KZN Province.

Scientific value

Past settlements and associated roads, mines and other auxiliary infrastructure developments and disturbance within the HIA Study Area associated with the proposed pipeline has resulted in limited intact landscape with the potential to retain intact large scale or highly significant open archaeological site deposits.

Social Value

The project sites fall within a larger and an extensive KZN cultural landscape that is integrated with the wider inland south west KZN. The overall area has social value for the local community, as is the case with any populated landscape. Literature review suggests that social value of the overall project area is also demonstrated through local history which associates the area with the rise of Shaka's Zulu Kingdom in the early 1800s from the east coast, the subsequent Mfecane, the African struggle against settler colonialism in the second half of the 1800s and at the end of the 1800s, the colonial wars of resistance, the century long struggle for democracy that followed colonial subjugation. Several generations of communities originate from the project area and continue to call it home. As such, they have ancestral ties to the area. The land also provides the canvas upon which daily socio-cultural activities are painted. The remains of historic homesteads recorded in the project area testify to the fact of generational homes and settlements. All these factors put together confirms the social significance of the project area. However, this social significance is unlikely to be negatively impacted by the proposed pipeline development

especially given the fact that the development will add value to the human settlements and activities already taking place.

Sections of the proposed pipeline route covered in thick bushes and vegetation retain social value as sources of important herbs and traditional medicines. As such, they must be considered as significant social value sites.

11. RECOMMENDATIONS

One burial site was recorded in the Study Area associated with the proposed Gcilima pipeline route. The recorded burial site is a formal burial site managed by the local municipality. It is located far from the project 20m impact zone. No mitigation is required since none of the proposed pipe routes will affect any significant cultural heritage resources. The study, did not find any permanent barrier to the proposed pipeline development. The following recommendations are based on the results of the A/HIA research, cultural heritage background review, site inspection and assessment of significance. Based on the findings of this study, the proposed pipeline routes are feasible from an archaeological perspective. The project may be approved subject to the following recommendations:

- From a heritage point of view all the proposed pipeline routes and reservoir sites are viable. The foot print impact of the proposed pipeline development should be kept to minimal to limit the possibility of encountering chance finds within servitude.
- The construction team must ensure that they maintain a 20m buffer zone from graves located within homesteads.
- Public participation process must request homeowners to declare any graves located along the pipeline routes especially considering that access to homesteads was limited during the survey.
- Location of proposed pipeline infrastructure should be restricted to minimum footprint impact especially where such infrastructure fall within bushy area. Such bushy sections have local ethno-botany significance as sources of traditional herbs and medicines. As such disruption and vegetation clearance should be minimal.
- The project area has considerable existing built-up areas and as such no impacts are anticipated on the cultural built environment given the existence of contemporary built-infrastructure or structures already in the project area.
- Overall, impacts to heritage resources are not considered to be significant for the project receiving environment. It is thus concluded that the project may be cleared to proceed as planned subject to the Heritage Authority ensuring that a detailed heritage monitoring procedures are included in the project EMP for the construction phase, include chance archaeological finds mitigation procedure in the project EMP.
- The chance finds process will be implemented when necessary especially when archaeological materials and burials are encountered during subsurface construction activities.
- If archaeological materials are uncovered, work should cease immediately and the Amafa be notified and activity should not resume until appropriate management provisions are in place.

- If during the construction or operations phases of this project, any person employed by the developer (Ugu District Municipality), one of its subsidiaries, contractors and subcontractors, or service provider, finds any artifacts of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- The senior-site manager must then make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area before informing SAHRA/Amafa
- If a human grave/burial is encountered, the remains must be left as undisturbed as possible before the local police and SAHRA or Amafa are informed. If the burial is deemed to be over 60 years old and no foul play is suspected, an emergency rescue permit may be issued by SAHRA/Amafa for an archaeologist to exhume the remains.
- The Project Public Participation Process should ensure that any cultural heritage related matters for this project are given due attention whenever they arise and are communicated Amafa throughout the proposed project development. This form of extended community involvement would pre-empt any potential disruptions that may arise from previously unknown cultural heritage matter that may have escaped the attention of this study.
- The findings of this report, with approval of the Amafa/SAHRA, may be classified as accessible to any interested and affected parties within the limits of the laws.

12. CONCLUDING REMARKS

The literature review and field research confirmed that the project area is situated within a contemporary cultural landscape dotted with settlements with long local history. Field survey established that the affected project area is degraded by existing infrastructure developments. Although the area is degraded, there is a possibility that the Study Area is part of a wider archaeological and historical site and significant cultural landscape. In terms of the archaeology and heritage with respect to the proposed pipeline routes and reservoir sites, there are no obvious 'Fatal Flaws' or 'No-Go' areas. No archaeological sites were recorded along the proposed pipeline routes. The field survey established that the affected project area is degraded by agriculture activities and associated infrastructure. Although the area is degraded, there is a possibility of encountering archaeological remains especially during excavation along the pipeline route. This report concludes that the proposed pipeline development may be approved by Amafa to proceed as planned subject to recommendations herein made.

13. BIBLIOGRAPHY

- Anderson, G and Anderson, L. 2005. The Archaeological Surveys for Shelly Beach Villas, Old Macdonals farm and Horseshoe Farm.
- Australia ICOMOS (1999) The Burra Charter: The Australia ICOMOS charter for places of cultural significance. Burwood.
- Brousse-James & Associates, 2006. Environmental Scoping Report for District Road D168. Unpublished Report
- Bryant, A. T. 1965. Olden times in Zululand and Natal. Cape Town: C. Struik.
- Bergh, J.S., (ed.) Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies. Pretoria: J. L. van Schaik Uitgewers. 1999.
- Bickford, A. and Sullivan, S. 1977. "Assessing the research significance of historic sites" in S Sullivan and S Bowdler (eds) Site Surveys and Significance assessment in Australian Archaeology. Canberra: ANU.
- Burke, H. and Smith, C. 2004. The archaeologist's field handbook. Australia. Allen and Unwin.
- Cable, J. H. C. 1984. Economy and technology in the Late Stone Age of southern Natal. Cambridge monographs in African archaeology, 9 BAR international series, 201. Oxford: British Archaeological Reports.
- Cooper, M. A; Firth, A. Carman, J. & Wheatley, D. (eds.) 1995: Managing Archaeology. London: Routledge.
- Deacon, H. J. and Deacon J. 1999. Human beginnings in South Africa. Cape Town: David Philips Publishers.
- Derwent, S 2008. KwaZulu-Natal Heritage Sites: A Guide to Some Great Places. David Philip: Pietermaritzburg
- Glazewski, J., 2000: Environmental Law in South Africa. Durban: Butterworths.
- Hammond-Tooke, D. 1993. The roots of Black South African. Johannesburg: WUP.
- Huffman, T.N. 2007. Handbook for the Iron Age. Pietermaritzburg: UKZN Press.
- Hamilton, C. (ed.). 1995. The Mfecane Aftermath: Reconstructive debates in Southern African History. Johannesburg: WUP.
- Maggs, T. 1989. The Iron Age of Natal. In Duminy, A. and Guest, B. 1989. Natal and Zululand: from Earliest Times to 1910. A New History. University of Natal Press. Pietermaritzburg
- Maggs, T. 1984a. Ndongondwane: a preliminary report on an Early Iron Age site on the lower Tugela River. Annals of the Natal Museum 26: 71-93.
- Maggs, T.M., Ward, V. 1984b. Early Iron Age sites in the Muden area of Natal. Annals of the Natal Museum 26: 105-140.

- Mamoluoane, S. 2013. Redevelopment and upgrade of the Port Edward Resort, Port Edward, KwaZulu Natal, Phase 1 Cultural Heritage Impact Assessment.
- Mazel, A., 1989. The Stone Age peoples of Natal. In Duminy, A. and Guest, B. 1989. Natal and Zululand: from Earliest Times to 1910. A New History. Pg. 28-46. University of Natal Press. Pietermaritzburg.
- Murimbika, M. and Mlilo, T. 2014. Archaeological and Heritage Impact Assessment Report for proposed construction of Umzumbe Municipal offices within Umzumbe Local Municipality in KZN Province.
- Nemai, 2013. Phase 1 Heritage Impact Assessment for the proposed new train Repeater High site within the Green Point Lighthouse site in Port Shepstone, KZN Province.
- Prins, F. 2013a. Heritage Impact Assessment of the proposed Nqabeni/Eros/Oribi 132kv loop in Loop out powerlines, Ugu District Municipality.
- Prins, F. 2013b. Heritage Impact Assessment of the proposed Mqangqala access Road, Umzumbe Local Municipality.
- Prins, F. 2013. Heritage Impact Assessment of the Harding Landfill site, Umuziwabantu Municipality, KZN Province
- Prins, F. 2015. Phase one Heritage Impact Assessment of the proposed upgrade of the P57 Road from Eziqoleni to the Mtamvuma River Bridge within the Enqoleni Local Municipality, Ugu District Municipality.
- Prins, F. 2016. First Phase Heritage Impact Assessment of the proposed upgrade of District Road D168 near Highflats, KwaZulu Natal.
- Rasmussen, R.K. 1978 Migrant kingdom: Mzilikazi's Ndebele in South Africa. London: Rex Collings
- Ross, R. 1999 A concise history of South Africa. Cambridge University Press. Cambridge.
- South Africa, 1983. Human Tissue Act. Government Gazette.
- South Africa 1999. National Heritage Resources Act (No 25 of 1999), Government Gazette. Cape Town.
- SAHRA APMHOB. 2004. Policy for the management of Archaeology, Palaeontology, Meteorites and Heritage Object. SAHRA: Cape Town.
- SAHRA APM. 2006. Guidelines: Minimum standards for the archaeological and palaeontological Component of Impact Assessment Reports. . SAHRA: Cape Town.
- SAHRA APMHOB 2002. General Introduction to surveys, impact assessments and management plans. SAHRA: CT.
- SAHRA. 2002. General guidelines to Archaeological Permitting Policy. SAHRA: Cape Town.
- SAHRA. 2002. General Introduction to surveys, impact assessments and management plans.

SAHRA. What to do when Graves are uncovered accidentally.

SAHRA Report Mapping Project Version 1.0, 2009

SAHRIS (Cited 16 February 2016)

Tomose, N.G. 2015. Proposed Ariadne-Eros 400/132kv multicircuit Transmission powerline

Van Schalkwyk and Wahl, E. 2014. Phase 1 Heritage Impact Assessment Report: proposed St Faith 400/132kv Substation and associated powerlines, Port Shepstone, Umzumbe, Hibiscus Coast and Ezingoleni Local Municipality, Ugu District Municipality, KZN Province.

Whitelaw, G. 1991. Pre-colonial iron production around Durban and in southern Natal. *Natal Museum Journal of Humanities* 3: 29–39.

Whitelaw, G. 1993. Customs and settlement patterns in the first millennium AD: evidence from Nanda, an Early Iron Age site in the Mngeni Valley, Natal. *Natal Museum Journal of Humanities* 5: 47–81.

Wilson, M. 1969. Changes in social structure in southern Africa: the relevance of kinship studies to the historian. In: L. Thompson, ed., *African societies in southern Africa*. London: Heinemann, pp. 71–85.

Wright, J. 2009. The Thuli and Cele paramountancies in the coastlands of Natal, c. 1770–c. 1820. *Southern African Humanities* 21: 177–94.

14. APPENDIX 1: HERITAGE MANAGEMENT PLAN INPUT INTO THE PIPELINE PROJECT EMP

Objective	<ul style="list-style-type: none"> Protection of archaeological sites and land considered to be of cultural value; Protection of known physical cultural property sites against vandalism, destruction, and theft; and The preservation and appropriate management of new archaeological finds should these be discovered during construction. 								
	No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
Pre-Construction Phase									
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan, and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM	
Construction Phase									
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM	
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or PHRA-G official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM	
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;		Throughout	C CECO	SM	ECO	EA EM PM	
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform PHRA-G.		When necessary	C CECO	SM	ECO	EA EM PM	

		Should any remains be found on site that is potentially human remains, the PHRA-G and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
		Same as construction phase.						
Operational Phase								
		Same as construction phase.						

1. APPENDIX 2: LEGAL BACK GROUND AND PRINCIPLES OF HERITAGE RESOURCES MANAGEMENT IN SOUTH AFRICA

Extracts relevant to this report from the National Heritage Resources Act No. 25 of 1999, (Sections 5, 36 and 47):

General principles for heritage resources management

5. (1) All authorities, bodies and persons performing functions and exercising powers in terms of this Act for the management of heritage resources must recognise the following principles:

(a) Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and as they are valuable, finite, non-renewable and irreplaceable they must be carefully managed to ensure their survival;

(b) every generation has a moral responsibility to act as trustee of the national heritage for succeeding generations and the State has an obligation to manage heritage resources in the interests of all South Africans;

(c) Heritage resources have the capacity to promote reconciliation, understanding and respect, and contribute to the development of a unifying South African identity; and

(d) Heritage resources management must guard against the use of heritage for sectarian purposes or political gain.

(2) To ensure that heritage resources are effectively managed—

(a) The skills and capacities of persons and communities involved in heritage resources management must be developed; and

(b) Provision must be made for the ongoing education and training of existing and new heritage resources management workers.

(3) Laws, procedures and administrative practices must—

(a) Be clear and generally available to those affected thereby;

(b) In addition to serving as regulatory measures, also provide guidance and information to those affected thereby; and

(c) Give further content to the fundamental rights set out in the Constitution.

(4) Heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

(5) Heritage resources contribute significantly to research, education and tourism and they must be developed and presented for these purposes in a way that ensures dignity and respect for cultural values.

(6) Policy, administrative practice and legislation must promote the integration of heritage resources conservation in urban and rural planning and social and economic development.

(7) The identification, assessment and management of the heritage resources of South Africa must—

(a) Take account of all relevant cultural values and indigenous knowledge systems;

- (b) Take account of material or cultural heritage value and involve the least possible alteration or loss of it;
- (c) Promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs;
- (d) Contribute to social and economic development;
- (e) Safeguard the options of present and future generations; and
- (f) Be fully researched, documented and recorded.

Burial grounds and graves

36. (1) where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

(5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—

(a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

(b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such

activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority—

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

General policy

47. (1) SAHRA and a provincial heritage resources authority—

(a) must, within three years after the commencement of this Act, adopt statements of general policy for the management of all heritage resources owned or controlled by it or vested in it; and

(b) may from time to time amend such statements so that they are adapted to changing circumstances or in accordance with increased knowledge; and

(c) must review any such statement within 10 years after its adoption.

(2) Each heritage resources authority must adopt for any place which is protected in terms of this Act and is owned or controlled by it or vested in it, a plan for the management of such place in accordance with the best environmental, heritage conservation, scientific and educational principles that can reasonably be applied taking into account the location, size and nature of the place and the resources of the authority concerned, and may from time to time review any such plan.

(3) A conservation management plan may at the discretion of the heritage resources authority concerned and for a period not exceeding 10 years, be operated either solely by the heritage resources authority or in conjunction with an environmental or tourism authority or under contractual arrangements, on such terms and conditions as the

heritage resources authority may determine.

(4) Regulations by the heritage resources authority concerned must provide for a process whereby, prior to the adoption or amendment of any statement of general policy or any conservation management plan, the public and interested organisations are notified of the availability of a draft statement or plan for inspection, and comment is invited and considered by the heritage resources authority concerned.

(5) A heritage resources authority may not act in any manner inconsistent with any statement of general policy or conservation management plan.

(6) All current statements of general policy and conservation management plans adopted by a heritage resources authority must be available for public inspection on request.