

# **HERITAGE IMPACT ASSESSMENT: PROPOSED AMAHLEKE WATER SUPPLY SCHEME, DIMBAZA, KING WILLIAMS TOWN, EASTERN CAPE**

(Assessment conducted under Section 38 (8) of the  
National Heritage Resources Act No 25 of 1999)

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## EXECUTIVE SUMMARY

ACO Associates cc was appointed by Terreco Environmental to undertake the Heritage Impact Assessment (excluding palaeontology) for the proposed expansion of the Amahleke Water Supply Scheme located near Dimbaza, outside of King William's Town in the Eastern Cape.

### **The Project**

The proposed works involves the upgrading of the existing water pipelines and rising main from a 110/140mm to a 250mm diameter pipeline as well as an expansion of two of the reservoirs in the area. The larger reservoir is being upgraded from a 500KL to a 3,5ML and the smaller one from 150kl to 1,5ML. The upgrade of the pipeline includes the construction of a pipeline bridge over the Mngqesha River.

Fieldwork was conducted by J Almond, L Webley and M Tusenius on the 3 and 4 December 2015.

The Palaeontological Specialist Report will be submitted separately by J Almond.

### **Heritage Resources Identified**

- Small numbers of MSA artefacts on dolerite were recorded in a donga below the Pirie Mission, in a gravel exposure on the banks of the Mngqesha River, and in the alluvial deposits at the base of the Mngqesha River;
- Historic sites such as the Bryce Ross Memorial Church and the Ntsikana Memorial Church in Pirie, the Bailie's Grave Memorial, Debe Nek and the battlefield of Amalinde are located in the general vicinity of the pipeline upgrade;
- Two graves were recorded near a village at the intersection of the R63 and the road to Pirie Mission;
- A summer initiation site was recorded on the banks of the Mngqesha River some 200 m from the pipeline.

### **Anticipated Impacts on Heritage Resources**

- The significance of the MSA artefacts is low because they are not in primary context. They appear to be widely distributed but they are located at a depth of at least 1.5 m below the soil surface. Anticipated impacts appear to be low;
- The pipeline and reservoir will not impact directly or indirectly on any historic site or buildings that are older than 60 years. Impacts to the built environment will be low;
- No graves were recorded along the route of the pipeline or at the reservoirs. The two identified graves are at least 470 m from the pipeline. Impacts to unmarked graves are more difficult to predict. However, the probability of encountering graves along the pipeline route is low;
- The summer initiation site on the Mngqesha River will in all probability no longer exist when the pipeline is constructed. The pipeline will not impact on future initiation sites along the river as it is below ground. Impacts to Living Heritage are expected to be low.

### **Recommendations**

The following recommendations should be enforced:

- If any human remains are uncovered during construction, the ECO should fence off the immediate area and contact ECPHRA(Tel: 043 745 0888) immediately;
- If there are any significant changes to the layout of the pipeline, the new design should be assessed by a heritage practitioner.

## GLOSSARY

**Archaeology:** Remains resulting from human activity which is 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.

**Early Stone Age:** The archaeology of the Stone Age between 700 000 and 2500 000 years ago.

**Heritage:** That which is inherited and forms part of the National Estate (Historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

**Eastern Cape Provincial Heritage Resources Agency:** The compliance authority which protects national heritage in the Western Cape.

**Late Stone Age:** The archaeology of the last 20 000 years associated with fully modern people.

**Middle Stone Age:** The archaeology of the Stone Age between 20-300 000 years ago associated with early modern humans.

**National Estate:** The collective heritage assets of the Nation

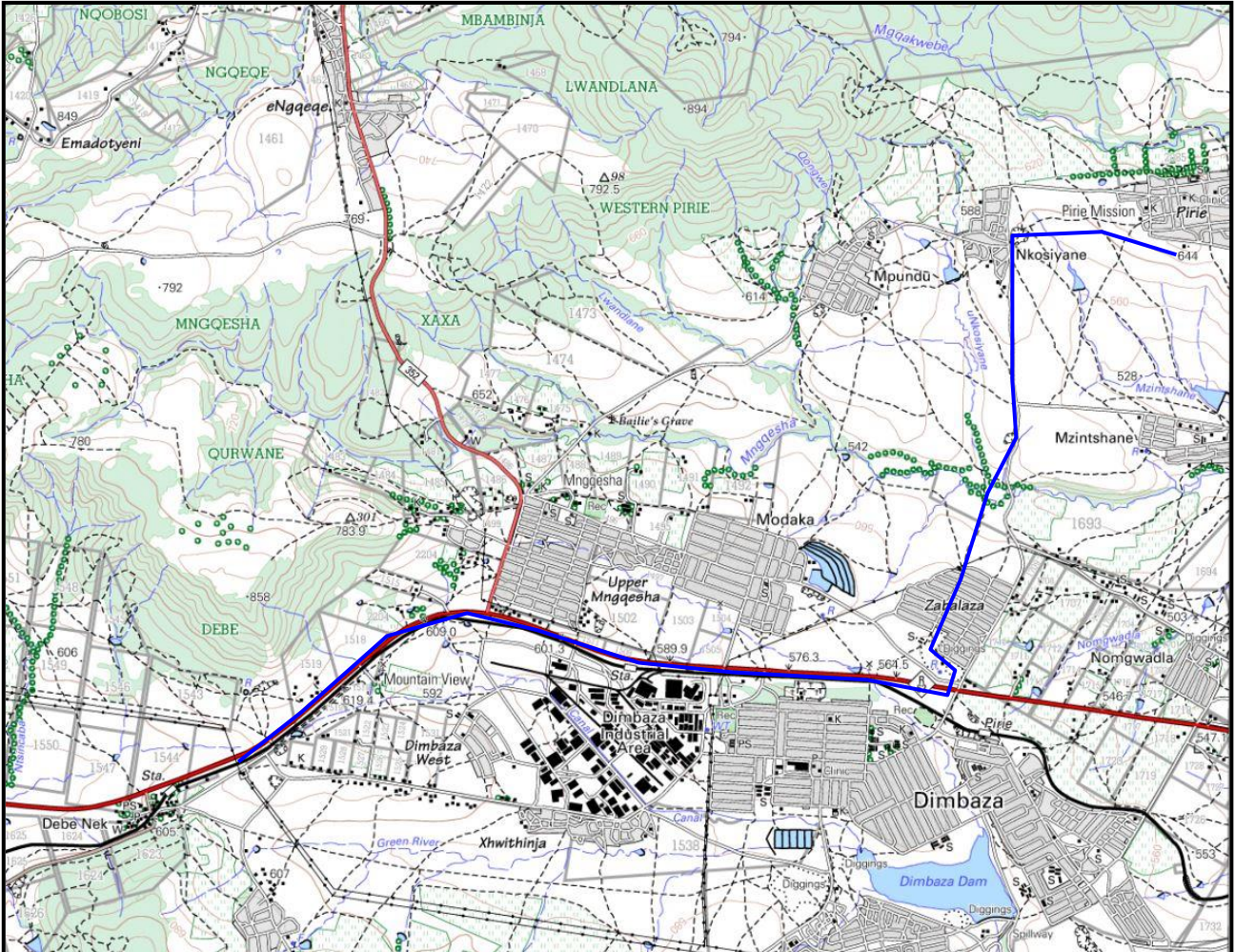
**Structure (historic:)** Any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith. Protected structures are those which are over 60 years old.

## Acronyms

CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
ECPHRA	Eastern Cape Provincial Heritage Resources Agency
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency

## 1. INTRODUCTION

ACO Associates cc was appointed by Terreco Environmental to undertake the Heritage Impact Assessment (excluding palaeontology) for the proposed expansion of the Amahleke Water Supply Scheme located near Dimbaza, outside of King Williams Town in the Eastern Cape Province (Figure 1).

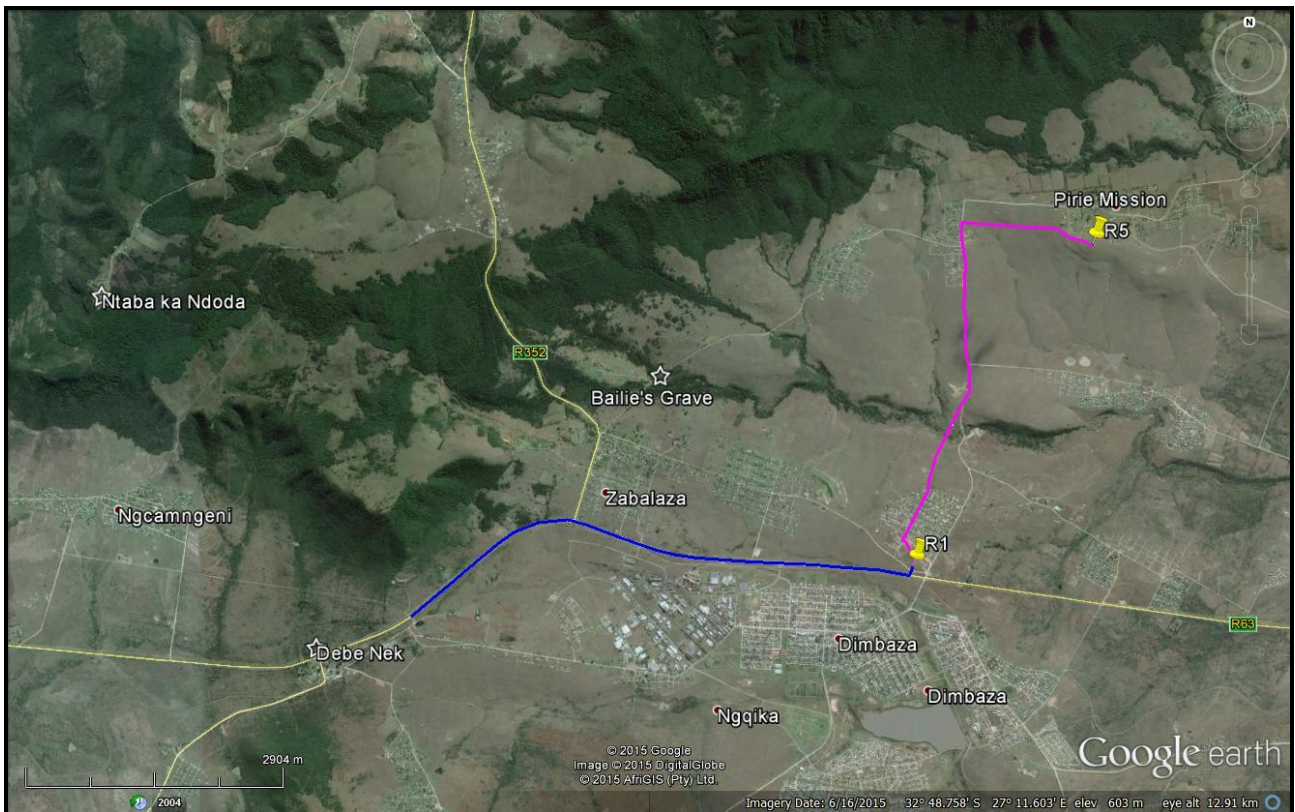


**Figure 1:** Map 3227CC (1:50 000) showing the location of the proposed upgrade of an existing rising water main (pipeline) from the Pirie Mission in the north, through the village of Zabalaza, and along the R63 in a westerly direction, stopping just before Debe Nek (dark blue line above). Dimbaza is located to the north-west of King William's Town.

## 2. DEVELOPMENT PROPOSALS

Buffalo City Metropolitan Municipality are proposing the expansion of the Amahleke Water Supply Scheme located near Dimbaza outside of King Williams Town in the Eastern Cape. The proposed works involves the upgrading of the existing water pipelines and rising main from a 110/140mm to a 250mm diameter pipeline as well as an expansion of two of the reservoirs in the area. The larger reservoir is being upgraded from a 500KL to a 3,5ML and the smaller one from 150kl to 1,5ML. The upgrade of the pipeline includes the construction of a pipeline bridge over the Mngqesha River.





**Figure 2:** An aerial image of the proposed route, indicating the proposed location of the two reservoirs (R1 and R5) which will be upgraded. The route of the rising main runs from the Pirie Mission to the R63 (pink line) and the gravity main along the R63 (blue line) will be located inside the road reserve. The positions of the heritage sites of Bailie's Grave, Debe Nek and Ntaba ka Ndoda are indicated with stars.

### 3. HERITAGE LEGISLATION

This report is conducted in terms of Section 38 (8) of the National Heritage Resources Act, No 25 of 1999.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological Sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37);
- Living Heritage (Section 2 (d) (xxi)).

#### 3.1 Structures (Section 34(1)) or Built Environment

No person may alter or demolish any structure part of a structure which is older than 60 years without a permit issued by Heritage Western Cape (HWC), the responsible provincial heritage resources authority.

#### 3.2 Archaeology & Palaeontology (Section 35(4))

No person may, without a permit issued by HWC, destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite.

Archaeological is defined as: “material remains resulting from human activity which is in a state of disuse and is in or on land and which is older than 100 years, including artefacts, human and hominid remains and artificial features and structures”.

### 3.3 Burial grounds and graves (Section 36(3))

No person may, without a permit issued by the South African Heritage Resources Authority (SAHRA), destroy, damage, alter, exhume or 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.

### 3.4 Living Heritage (Section 2 (d) (xxi))

In terms of the definitions, Living Heritage is defined as meaning “the intangible aspects of inherited culture, and may include-

- (a) cultural tradition;
- (b) oral history;
- (c) performance;
- (d) ritual;
- (e) popular memory;
- (f) skills and techniques;
- (g) indigenous knowledge systems, and
- (h) the holistic approach to nature, society and social relationships; (xxi).

Section 3 (2) of the NHRA specifically indicates that the National Estate may include places to which oral traditions are attached or which are associated with living heritage.

### 3.5 Grading

The South African heritage resources management system is based on grading, which provides for assigning the appropriate level of management responsibility to a heritage resource.

**Table 1:** Grading of Heritage Resources

Grade	Level of significance	Description
I	National	Of high intrinsic, associational and contextual heritage value within a national context, i.e. formally declared or potential Grade 1 heritage resources.
II	Provincial	Of high intrinsic, associational and contextual heritage value within a provincial context, i.e. formally declared or potential Grade 2 heritage resources.
IIIA	Local	Of high intrinsic, associational and contextual heritage value within a local context, i.e. formally declared or potential Grade 3a heritage resources.
IIIB	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3b heritage resources.
IIIC	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3c heritage resources.

The grading of heritage sites, as prescribed in the NHRA, is only concerned with categories I, II and III. The subdivision of Grade III sites has been introduced in the Western Cape to facilitate significance grading at the local level.

## **4. METHODOLOGY**

### **4.1 Background Literature study**

The SAHRIS database was consulted but there are very few CRM reports available for this area. Background research included Derricourt's (1977) book on *the Archaeology of the Ciskei and Transkei*, which despite its age, remains the most comprehensive overview of the archaeology of the area. Feely's thesis, summarised in Feely & Bell-Cross (2011), concentrates on the northern part of the Eastern Cape (previously Transkei), and is of limited value.

The 1:50 000 maps of the area, as well as Google Earth aerial images, are useful in providing the locations for historic sites which are not always geo-referenced in historic documents.

There are a number of historical reviews of the 19<sup>th</sup> century history of the area (Mostert 1992, Peires 1981 & 1989), but these too contain little locational information to be of value.

A separate specialist palaeontological assessment will be submitted to ECPHRA by Dr John Almond of Natura Viva cc.

### **4.2 Field Survey**

The polygon of the proposed development was provided to ACO Associates. The area was surveyed by Lita Webley, John Almond and Madelon Tusenius on the 3 & 4<sup>th</sup> December 2015.

Our tracks were recorded by means of Garmin GPS devices and all sites were digitally recorded.

We accessed the area by the local roads and drove along sections of the pipeline where it followed the road reserve. We walked all sections of the pipeline where it crossed open veld.

### **4.3 Assumptions and Limitations**

Visibility was good because of the sparse vegetation of the study area. We were able to cover most of the study area satisfactorily. There were no significant limitations.

## **5. RECEIVING ENVIRONMENT**

The topography is undulating, with the pipeline commencing at a height of 644 m at the Pirie Mission, dropping down to 542 m at the Mngqesha River, and rising up to 610 m at the R63.





Plate 1: View from the Pirie Mission northwards to the Pirie Forest. The vegetation around the mission and along the route of the pipeline consists of short grasses and the visibility is good.



Plate 2: View of the reservoir (R5) which will be replaced with a larger reservoir, on the hill overlooking the Pirie Mission.





Plate 3: View from the Pirie Mission southwards, towards the village of Dimbaza. Notice the many indentations in the vegetation. These are the “kommetjies” or “amalindi” which are referred to by Dold & McKenzie (2010) and are ascribed to the activity of the giant earthworms (*Microcheatis* sp). The pipeline will run approximately along the line of the electricity lines in the photo.



Plate 4: The pipeline will follow the route of the existing pipeline (red line), across the Mngqesha River which is indicated by the trees. The summer initiation site for the circumcision (*Ulwaluko*) ritual is circled in yellow. They are located about 250 m to the west of the pipeline.



Plate 5: View in a westerly direction along the R63, towards Debe Nek. The reservoir (R1) marked with a red arrow will be replaced with a larger reservoir. The pipeline will follow the R63 and will be placed in the road reserve.

## 5.1 Archaeological Background

The information on the archaeology of the study area discussed below is derived from a number of sources.

### *Early and Middle Stone Age*

Early and Middle Stone Age artefacts have been reported by early amateur archaeologists from the general vicinity of Middledrift. With respect to the MSA, Derricourt (1977) described a mixed assemblage of ESA/MSA from Peninsula Farm on the Kubusi River, near King William's Town and ESA artefacts in the alluvial deposits of the Keiskamma River on the Middledrift Commonage.

### *Late Stone Age*

Derricourt (1977) identified a distinct stone industry in the "Ciskei" region between the coast and the Amathole Mountains which he names the "Middledrift Tradition". This industry, "dating to the 10<sup>th</sup> century B.C. is cruder than the Smithfield, and characterised by cores and flakes with a battered rather than pressure-retouched working edges, especially steep battered scrapers and core hammers". The material from the sites suggested the presence of cattle and sheep/goat rearing groups with a significant part of their diet derived from hunted animals. The sites also contained fragments of marine shell suggesting some type of seasonal utilisation of the coast. The Middledrift pottery is finely made with good burnish, it has the same characteristics and traits (e.g. lugs) as Cape Coastal Ware, suggesting that the pastoralist groups living at Middledrift, had links with historical Khoekhoen pastoralists. Derricourt was convinced that the pottery was unconnected with Later Iron Age groups. He excavated a number of low mounds of fine soil of ashy appearance in the Ann Shaw Location, one mound was found to contain the deliberate burial of a dismembered cow. Another contained a flexed burial Khoisan individual. He concluded that the area was the "core of the Gonaqua Hottentot pastoralists".

Apart from the sites at Ann Shaw/Middledrift, the only other LSA archaeological site recorded in the vicinity of the Pirie Mission is that of Citrusglen which is located some 8km to the north-east, just below the Maden Dam (Derricourt 1977). This LSA site occurs on both sides of a small stream, and consists of cores, flakes, backed flakes, scrapers and chips made on hornfels/lydianite.



## Farming Communities

In their review article of Early Iron Age settlement in the Eastern Cape, Feely & Bell-Cross (2011), report on the distribution of 18 EIA sites which they recorded during the 1980s. They explain that they occur at the bottom of deeply incised river valleys but at decreasing distances from the sea and declining altitudes in a south-westerly direction across the Eastern Cape. One explanation offered for this distribution relates to the possible presence of Khoekhoen herders, perhaps with seasonal camps along the river, westward from 29°E. Further, they observe that the geographic limit of the EIA south of East London still needs to be determined. Only two sites have been described by archaeologists south of the Kei River:

**Canasta Place:** Early Iron Age pottery has been reported from Canasta Place, some 12 km west of East London, on the western bank of the Buffalo. This is the presently the most south-westerly EIA settlement known (Nogwaza 1994). The pottery from Canasta Place is found on the surface over an area of several kilometres and archaeological investigations by Nogwaza (1994) failed to identify any grain pits or hut floors.

**Kulubele:** is located some 50km from the coast, in the Kei River Valley. It is the first Early Iron Age site with *in situ* features excavated south-west of the Great Kei River Valley (Binneman 1996). The site represents an early farming settlement near Komga with radiocarbon dates between 8<sup>th</sup> and 9<sup>th</sup> centuries AD. In contrast to Canasta Place, Kulubele included evidence of a settlement in the form of reed impressed daga, portions of a hut floor, storage pits, midden material and an abundance of cultural remains.

The evidence from Kulubele and Canasta Place suggests a fairly rapid spread of Early Iron Age communities westwards along the coast of Southern Africa.

In addition to the EIA sites, Feely & Bell-Cross (2011) also recorded at least 138 Late Mixed Farming Communities (LIA), but these are not assessed in their review. The riverside location of EIA site contrasts with the locations of LIA sites in the former Transkei. These are largely confined to the slopes and crests of hills.

## 5.2 Historical Background

The land to the south of the Kei River, in the vicinity of the Amathole Mountains, was heavily contested territory during the 18<sup>th</sup> and 19<sup>th</sup> centuries. There are a number of places of historic interest in the general vicinity of the proposed development, although they are all some distance away and none will be impacted (Figure 2 and Table 2).

The now defunct, Ciskei Historical Monuments Act, No 10 of 1989, lists the following sites in the vicinity of the proposed pipeline as of heritage significance:

**Table 2:** Historic Sites in the vicinity of the study area

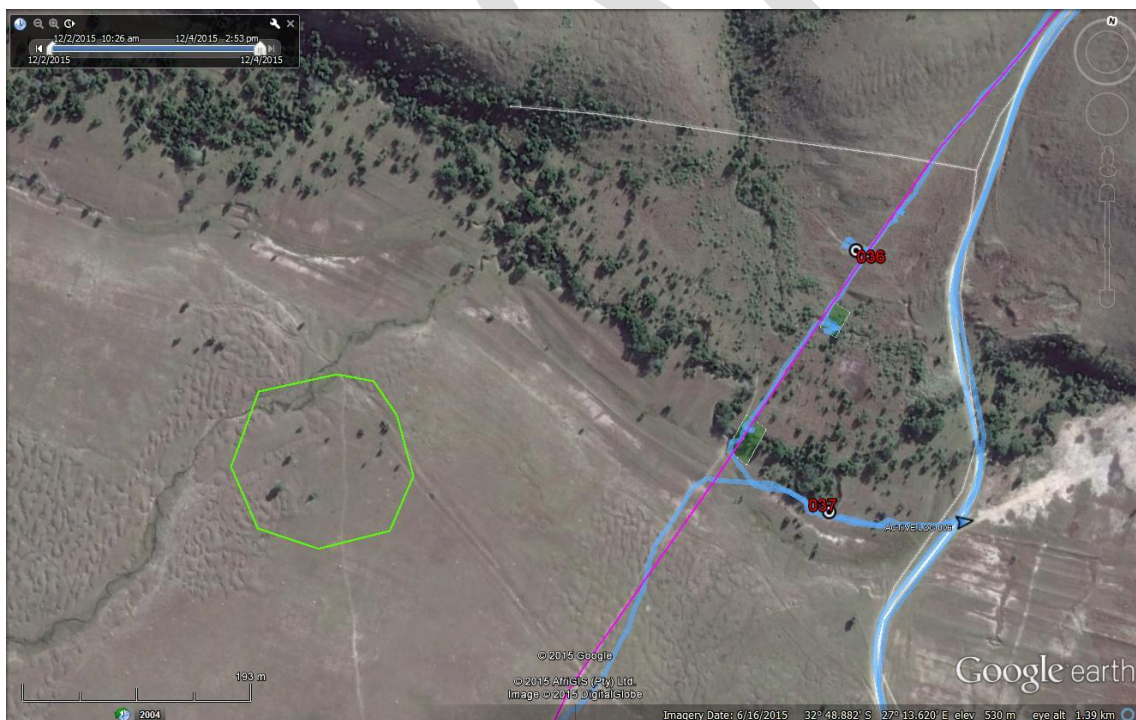
Name	General Background	Distance from the pipeline
The Bryce Ross Memorial Church at Pirie, in the Zwelitsha District	Established in 1874 on the jubilee of the Rev John Ross of the Glasgow Missionary Society.	400 m from the reservoir (R5) 90 m from the pipeline
The Ntiskana Memorial Church at Pirie, in the Zwelitsha District	Founded by the Rev Burnett Gaba in 1911, it is an early example of an African Independent Church.	400 m from the reservoir (R5) 400 m from the pipeline
Bailie's Grave, Mngqesha River, Zwelitsha District	Charles Bailie's Grave is located near Mngqesha. He was a Lieutenant the 1 <sup>st</sup> Battalion of the Provisional Colonial Infantry, and together with thirty of his colleagues, died in in	3.4 km west of the pipeline

	action during the Sixth Frontier War while crossing the Mngqesha River 1835.	
Amalinde (Debe Flats) 1818 battle site in the Zwelitsha District	The exact location of the battle is unknown. The battle took place between Ngqika and his uncle, Ndlambe in 1818 and Ngqika was defeated.	The exact location of the battle is not known but it is at least 10 km to the west

The Battle of Amalinde: various accounts of the battle are provided by Herbst & Kopke (2006), Mostert (1992) and Couzens (2004). Of interest in terms of this project, are the many references to the term “amalindi” which refers to the many mounds, up to a metre in height, with hollows between them which cover the veld. These “kommetjies” or basins on the flats east of Debe Nek occur at their best about 17km west of King William’s Town (Dold & McKenzie 2010). According to the authors, the “amalindi” mounds are formed by the activity of the giant earthworms (*Microcheatis* sp). Evidence seems to suggest that Ndlambe’s strategy, during the Battle of Amalinde, was to use these mounds or “kommetjies” as part of his battle tactics. His warriors hid in the “amalindi”, tricking Ngqika into thinking that he could easily overpower the smaller force.

The Mission Station of Pirie: The mission was founded in 1830, by Dr John Ross, and stands on the site where the Rev van der Kemp had built his house some years earlier. It was named after the Rev A Pirie, one of the Glasgow missionaries. There are at least three churches in the village of historic interest. They include the Ntsikana Memorial Church, the Bryce Ross Memorial Church (1874), and the United Free Church. According to [www.sahistoryonline.org.za/mission-stations-n-s](http://www.sahistoryonline.org.za/mission-stations-n-s), there were at least forty (Xhosa) kraals within three miles of the place when Backhouse visited the mission in 1839.

## 6. FINDINGS



**Figure 3:** Map illustrating the position of the pipeline (pink), our tracks during the survey (blue), the location of MSA archaeological scatters (036 and 037) and the location of the seclusion lodges (in the green circle and next to a scatter of trees).



## 6.1 Archaeology

A small number of MSA artefacts were recorded in a donga to the south of the Pirie Mission by Dr J Almond. They are a considerable distance from the study area and they are only discussed here in order to illustrate the widespread distribution of MSA artefacts, many manufactured on dolerite.



Plate 6: A large MSA blade, on dolerite, from a donga to the south of the Pirie Mission.

A further two artefacts, one with retouch, were recovered on a gravel bank on the edge of the Mngqesha River and are listed as Site 036.



Plate 7: The banks of the Mngqesha River, with the red arrow indicating the location of the MSA artefacts, some 1.5 m below the soil surface.

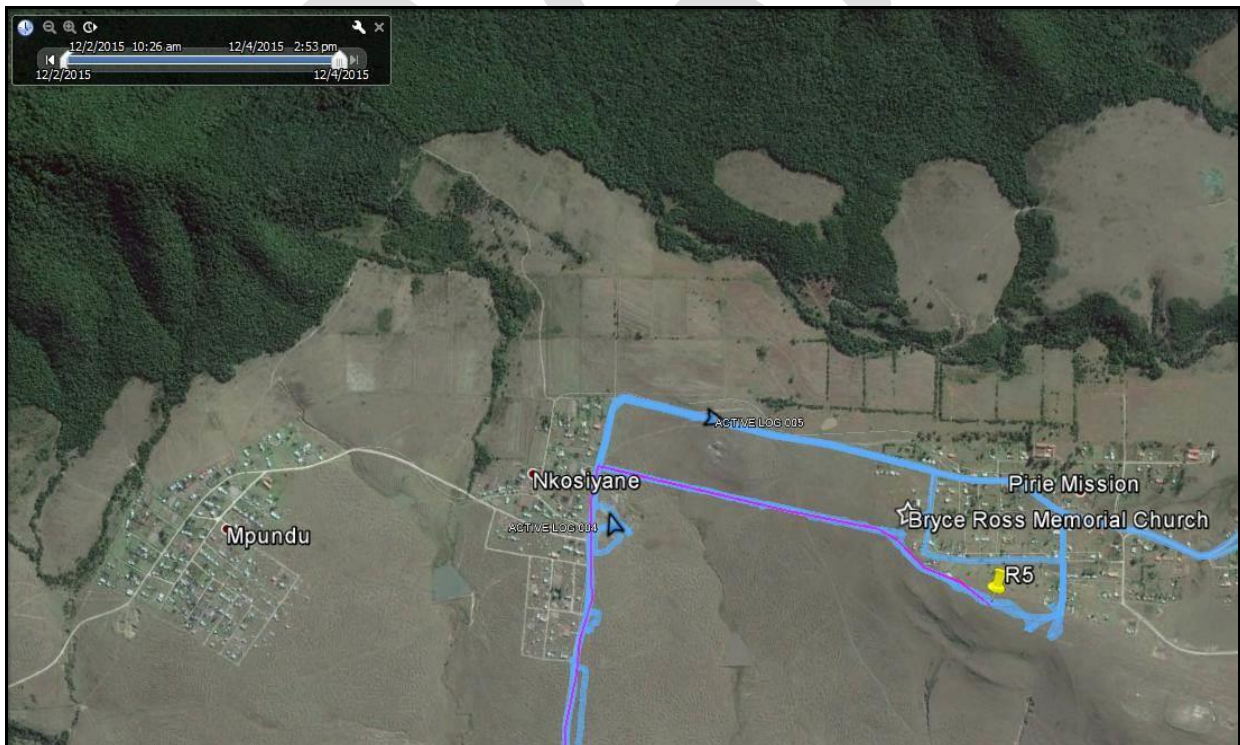
Another accumulation of MSA artefacts was observed at a depth of about 1.5m in the Mngqesha River at Site 037 (Plate 7). The artefacts were also manufactured on dolerite, and their distribution along a single horizon in the river bed, suggests that they are a lag accumulation and not in primary context. None of these artefact scatters can be called an “archaeological site” in primary context.





Plate 8: A selection of MSA artefacts on dolerite, from the Mngqesha River, near Pirie.

## 6.2 Built Environment



**Figure 4:** The rising main starts at Pirie, before flowing down to the R63 (pink line). The blue lines are out field tracks. The pin (R5) indicates the reservoir which will be increased in size.





Plate 9: The reservoir (R5) which will be ungraded in the foreground, and the Bryce Ross Memorial Church in the background (circled in red).

There are no other historical sites in close proximity to the proposed upgrade of the rising main.

### 6.3 Graves

No graves were recorded in close proximity to the line. The only graves recorded in the survey are two graves next to the road (between the R63 and Pirie). However, they are at least 470m from the pipeline which at this position, runs through the town.



**Figure 5:** At this juncture, the rising main (pink) runs through a small village before joining the reservoir (R1). The only graves which were recorded (in red circle) are located some 470m east of the pipeline.

## 6.4 Living Heritage

The field survey was conducted in December, and the landscape between King William's Town and Debe Nek was dotted with the temporary seclusion lodges (*ibhoma*) or initiation schools for the Xhosa rite of circumcision (*ulwaluko*). Traditionally, these temporary lodges were constructed out of branches covered with layers of grass to house the initiates (*abakhwetha*) but today the lodges are covered in plastic sheeting. Lodges should also be placed out of view of the public and in close proximity to natural vegetation and a stream. Access to a source of water is important as the initiates need to wash on the day of circumcision to purify themselves from ritual uncleanness (Dold & Cocks 2012).

However, it is becoming increasingly difficult to find such locations and many of the lodges which we observed are located along the R63, in view of passing motorists.

A collection of about nine (9) seclusion lodges was observed near the banks of the Mngqesha River during the field survey (Figure 3 and Plate 4).

## 7. HERITAGE IMPACT ASSESSMENT

The impacts to Palaeontology are assessed separately in the specialist palaeontological report.

### 7.1 Impacts to Pre-colonial Archaeology

Since archaeological sites, are non-renewable (i.e. negative impacts to archaeology cannot be reversed), it is important that they are identified and their significance assessed prior to development.

There are a number of factors which contribute to the significance of an archaeological site. Significance is highly dependent on the geological and spatial context. It is also dependent on the relative scarcity of the archaeological resource, the amount of information which it can contribute to a specific time period or human activity, its degree of preservation, etc.

The main cause of impacts to archaeological sites is direct, physical disturbance of the material itself and its context. The impacts are likely to be most severe during the construction period although indirect impacts may occur during the operational phase of the project.

With respect the archaeological resources identified during this survey, no archaeological "sites" or collections of archaeological material were recovered in primary context. Artefacts were observed in dongas, in areas of sheet wash and in the bottom of a river bed. The only artefacts which were identified are of the Middle Stone Age time period. They were not found in association with any other archaeological materials, such as bone etc. The archaeological resources are considered on low significance and the potential of impacts to these resources in considered low (Table 3 & 4).

No specific mitigation measures are required with respect the archaeological material recorded during this survey.

### 7.2 Impacts to Built Environment

The background study identified a number of heritage sites in the Pirie area (Figure 2), including the Bryce Ross Memorial Church in Pirie, Bailie's Grave and Debe Nek.

There will be no direct or indirect impacts to buildings of heritage significance or any structures that are older than 60 years. The proposed upgrading of the reservoir (R5) at the Pirie Mission will occur some 400m from the Bryce Ross Memorial Church and no impacts are expected (Figure 4



and Plate 9). Impacts to buildings are expected to be very low and no mitigation measures are recommended (Table 3).

### **7.3 Impacts to Graves**

Human remains are protected by a plethora of legislation including the Human Tissue Act (Act No 65 of 1983), the Exhumation Ordinance of 1980 and the NHRA. The mitigation of recent graves require a specific legal process to be followed in terms of S36 of the NHRA (including public participation) and negotiation of exhumation permits with SAHRA. Pre-colonial graves are also dealt with by SAHRA unless there is an inter-agency agreement with the Provincial Heritage Resources Agency. As there are usually no direct relatives who can be identified, the process is a much simpler one.

While the survey did not identify any graves which might be impacted by the proposed upgrading of the rising main, it must be emphasized that graves may be uncovered beneath the soil surface at any place along the pipeline although it is more likely to encounter graves in the soft soils close to rivers. The probability of recovering graves, however, is low (Table 3).

In the event of human bones being found during construction or operation, the immediate area must immediately be cordoned and ECPHRA and SAHRA must be informed. In all likelihood they will request that the remains are examined and removed by an archaeologist under an emergency permit. Removal of human remains is at the cost of the developer. A time delays may result while application is made to the authorities and an archaeologist is appointed to do the work.

### **7.4 Impacts to Living Heritage**

Initiation schools are generally placed where there is a degree of seclusion and in proximity to a source of water. However, the draft Policy on the Customary Practice of Initiation in South Africa (2015) does not prescribed any specific location for the practice of initiation and acknowledges that initiation schools in crowded urban areas often lack sufficient space for appropriate initiation activities. Many of the summer initiation schools between King William's Town and Dimbaza are placed along the R63 in view of motorists.

The summer initiation school on the Mngqesha River (Figure 3 and Plate 4) is situated 250m from the position of the pipeline. There will be no impacts to the current initiation school, which will have been destroyed by the time the pipeline is constructed. The pipeline will not impact on future initiation sites along the river as it is below ground. Impacts are expected to be low and no mitigation is required.

## **8. CONCLUSIONS AND RECOMMENDATIONS**

The Palaeontological Specialist Report will be submitted separately by J Almond.

### **8.1 Heritage Resources Identified**

- Small numbers of MSA artefacts on dolerite were recorded in a donga below the Pirie Mission, in a gravel exposure on the banks of the Mngqesha River, and in the alluvial deposits at the base of the Mngqesha River;
- Historic sites such as the Bryce Ross Memorial Church and the Ntsikana Memorial Church in Pirie, the Bailie's Grave Memorial, Debe Nek and the battlefield of Amalinde are located in the general vicinity of the pipeline upgrade;
- Two graves were recorded near a village at the intersection of the R63 and the road to Pirie Mission;
- A summer initiation site was recorded on the banks of the Mngqesha River some 200 m from the pipeline.

## 8.2 Anticipated Impacts on Heritage Resources

- The significance of the MSA artefacts is low because they are not in primary context. They appear to be widely distributed but they are located at a depth of at least 1.5 m below the soil surface. Anticipated impacts appear to be low;
- The pipeline and reservoir will not impact directly or indirectly on any historic site or buildings that are older than 60 years. Impacts to the built environment will be low;
- No graves were recorded along the route of the pipeline or at the reservoirs. The two identified graves are at least 470 m from the pipeline. Impacts to graves are more difficult to predict, as they may be unmarked. However, the probability of encountering graves along the pipeline route is low;
- The summer initiation site on the Mngqesha River will in all probability no longer exist when the pipeline is constructed. The pipeline will not impact on future initiation sites along the river as it is below ground. Impacts to Living Heritage are expected to be low.

## 8.3 Mitigation

The following recommendations should be enforced:

- If any human remains are uncovered during construction, the ECO should fence off the immediate area and contact ECPHRA(Tel: 043 745 0888) immediately;
- If there are any significant changes to the layout of the pipeline, the new design should be assessed by a heritage practitioner.

## 9. REFERENCES

Binneman, J. 1996. Preliminary report on the investigations at Kulubele, an Early Iron Age farming settlement in the Great Kei River Valley, Eastern Cape. *Southern African Field Archaeology* 5:28-35

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Table 3: Impacts to Heritage and Archaeology

POTENTIAL IMPACTS	ASPECT	Nature	Type	Extent	Duration	Severity	Reversibility	Irreplaceable Loss	Probability	MITIGATION POTENTIAL	IMPACT SIGNIFICANCE		MITIGATION MEASURES
											Without Mitigation	With Mitigation	
<b>CONSTRUCTION PHASE</b>													
Impacts on Heritage Impacts on Archaeology		Neutral	Secondary	Site		Low		Resource will not be lost	Probable	High	Negligible		If any graves are uncovered during excavations for the pipeline, then work in that area must stop and ECPHRA must be notified immediately  (Tel: 043 745 0888)
<b>OPERATIONS PHASE</b>													
Impacts on Heritage Impacts on Archaeology		Neutral	Secondary	Site		Low		Resource will not be lost	Probable	High	Negligible		No mitigation in Operations Phase is required



Table 4: List of heritage sites (including archaeology)

<b>Name of site</b>	<b>Co-ordinates: S</b>	<b>Co-ordinates: E</b>	<b>Description of site</b>	<b>Significance</b>
JA	32 47 56.9	27 14 52.4	MSA artefacts on dolerite from a deeply incised donga on the slopes to the south of the Pirie Mission. The artefacts were found along the floor of the donga in association with sandstone gravels.	Grade 3C (low local significance)
036	32 48 48.4	27 13 45.8	Two artefacts, one a retouched and snapped MSA flake, on an exposed area of gravel overlooking the Mngqesha River.	Ungradeable
037	32 48 55.7	27 13 46.4	A number of MSA artefacts on dolerite, in alluvial gravels some 1.5 m below the surface, in the Mngqesha River. The artefacts represent a lag accumulation, rather than a "site" and occur some 100m from the proposed pipeline.	Grade 3C (low local significance)
038	32 49 25.5	27 13 48.0	Two graves, about 10m from the gravel road between the R63 and the Pirie Mission. Each grave with granite headstones and enclosed in iron railings with lettering in Xhosa. The one has a date of 1968, the other 1987. Both contain the name Ngoxolo suggesting that they may be related.	Grade 3A (high local significance)