

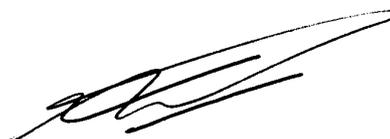
**PROPOSED RAND WATER BULK WATER SUPPLY PIPELINE FROM BRAKFORTEIN  
RESERVOIR IN CENTURION TO BARNARDSVLEI RESERVOIR NEAR RUSTENBURG,  
GAUTENG AND NORTH WEST PROVINCES**

**HERITAGE IMPACT ASSESSMENT**



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**Reference:** Randwater-002

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## **EXECUTIVE SUMMARY**

As we know from legislation, the National Heritage Resources Act 1999 (Act 25 of 1999), the surveying, capturing and management of heritage resources is an integral part of the greater management plan laid down for any major development or historic existing operation. This legislation aims to underpin the existing legislation, which only addresses this issue at a glance, and gives guidance to developers and existing industries to the management of their Heritage Resources.

This document forms part of the Environmental Impact Assessment Report that is being compiled for the development of the proposed Rand Water pipeline between Midrand, Gauteng Province, and Mooiwooi, North West Province.

During the survey, twenty-five sites of importance were found along the proposed development area.

The following section gives an outline of the sites found and the proposed mitigation measures.

### ***Archaeological Sites***

#### *Number of sites found:*

Three sites associated with the Late Iron Age and Stone Age. These are sites **MHC022**; **RW012** and **RW017**.

#### *Recommendation:*

The best option and first price would be the preservation of the sites in situ. If the pipeline is of such a nature that the sites will be impacted on, mitigation measures will have to be taken.

If the sites were to be preserved in situ, it will have to be fenced off. A buffer zone of at least 20 meters will have to be kept around the sites as to facilitate the protection of the sites during construction.

In the instance that the sites need to be destructed, an archaeologist needs to document the sites and afterwards a destruction permit needs to be applied for from the Provincial office of the South African Heritage Resources Agency (SAHRA) before such a time that the sites is destructed.

### **Cemeteries**

#### *Number of sites found:*

Two cemeteries were found that consisted of approximately 31 graves. These are sites **RW006**, **RW007**, **MHC013** and **RW008**.

#### *Recommendation:*

The best option and first price would be the preservation of the cemeteries *in situ*. If the pipeline is of such a nature that the site will be severely impacted on the cemeteries will have to be relocated.

If the cemeteries are to be preserved *in situ*. It will have to be fenced off and provided with access gate for family members. A buffer zone of at least 20 meters will have to be kept around the cemetery as to facilitate the protection of the site during construction.

In the instance that the cemeteries need to be relocated, this must be done with adherence to all legal requirements as well as an extensive social consultation process required within the process. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project.

### **Historical Farmsteads and other structures**

#### *Number of sites found:*

Ten structures were found of which sites **RW003**, **MHC018**, and **MHC031** are ruins of structures. The remaining structures, **RW004**, **RW005**, **RW014**, **RW015**, **RW016**, **MHC029**, and **RW018** are still utilised as housing, bridges, monuments or dam walls.

#### *Recommendation:*

The best option and first price would be the preservation of the structures *in situ*. If the pipeline is of such a nature that the sites will be severely impacted on the sites will have to be documented and a destruction permit applied for before destruction.

If the sites are to be preserved *in situ*, it will have to be fenced off and a buffer zone of at least 20 meters will have to be kept around the sites as to facilitate the protection of the site during construction.

In the instance that the structure needs to be destructed, a conservation architect needs to document the sites and afterwards a destruction permit needs to be applied for from the Provincial

office of the South African Heritage Resources Agency (SAHRA) before such a time that the sites is destructed. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project.

***Labourer Homestead ruins***

*Number of sites found:*

Seven structures or foundations have been found of dwelling that could possibly be older than 60 years. These are sites **MHC019, RW001, RW002, RW010, RW011, MHC022** and **MHC030**.

*Recommendation:*

The best option and first price would be the preservation of the ruins in situ. If the pipeline is of such a nature that the sites will be severely impacted on the sites will have to be documented and a destruction permit applied for before destruction.

If the sites are to be preserved *in situ*, it will have to be fenced off and a buffer zone of at least 20 meters will have to be kept around the sites as to facilitate the protection of the site during construction.

In the instance that the ruins needs to be destructed, the sites needs to be document and afterwards a destruction permit needs to be applied for from the Provincial office of the South African Heritage Resources Agency (SAHRA) before such a time that the sites is destructed. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project.

***Mining Trenches***

*Number of sites found:*

One site, **RW009**, has been found that is mining related. However it is of no significance

Refer to Section 9 of the report for further management guidelines for the project.

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## **1. INTRODUCTION**

Matakoma Heritage Consultants (Pty) Ltd was contracted by Bohlweki Environmental (Pty) Ltd to conduct a Heritage Impact Assessment for inclusion in the Environmental Impact Assessment Report for the proposed Rand Water pipeline between Midrand, Gauteng Province, and Mooinooi, North West Province.

The aim of the study is to identify all heritage sites, document, and assess their importance within Local, Provincial and National context. From this we aim to assist the developer in managing the discovered heritage resource in a responsible manner to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilised before and during the survey, which includes in Phase 1: Archival research, information collection from various sources and public consultations; Phase 2: Physical surveying of the area on foot and vehicle; and Phase 3: Reporting the outcome of the study.

During the survey, several sites of cultural significance were identified. These sites were recorded by means of photos, GPS location, and description. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to SAHRA's provincial office for scrutiny.

## **2. APPROACH AND METHODOLOGY**

The aim of the study is to extensively cover all data available to compile a background history of the area; this was done by means of the following phases.

### **2.1. Archival research**

The first phase comprised of a desktop study with the aim of gathering data to compile a background history of the study area. This desktop study covered the following:

Utilising data stored in the National Archives for information gathering. The aim of this is to gather all the relevant data to compile a list of archaeological sites, historical sites, graves, architecture, oral history, and ethnographical information on the inhabitants of the area.

As heritage surveys deal with the identifying of heritage resource in a prescribed cartographic landscape, the study of archival and historical data, and especially cartographic material, can represent a very valuable supporting tool in finding and identifying such heritage resources.

## **2.2 Physical Surveying**

Due to the nature of cultural remains, the majority that occur below surface, a physical walk through of the study area was conducted. Aerial photographs and 1:50 000 maps of the area were consulted and literature of the area were studied before undertaking the survey. The purpose of this was to identify topographical areas of possible historic and pre-historic activity. The proposed development area was surveyed over five days, by means of vehicle and extensive surveys on foot by an archaeologist. All sites discovered inside the proposed development area were plotted on 1:50 000 maps, and their GPS co-ordinates noted. 35mm photographs on digital film were taken of all the sites found.

## **3. HISTORICAL BACKGROUND OF AREA**

A complete desktop study and aerial photographic investigation formed part of the Scoping Phase of the project.

## **4. WORKING WITH LEGISLATION**

It is very important that cultural resources be evaluated according to the National Heritage Recourse Act. In accordance with the Act, we have found the following:

- These sites are classified as important based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) section 3 (3).
  - a place or object is to be considered part of the national estate if it has cultural significance or other special value because of-
    - o (a) its importance in the community, or pattern of South Africa's history;
    - o (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
    - o (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
    - o (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;

- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
  - (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
  - (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
  - (h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
  - (i) sites of significance relating to the history of slavery in South Africa.
- (Refer to Section 9 of this document for assessment)
  - This site should be managed through using the National Heritage Recourses Act 1999 (Act No 25 of 1999) sections 4,5 and 6 and sections 39-47.
  - Please refer to Section 9 for Management Guidelines.

## 5. ASSESSMENT CRITERIA

This chapter describes the evaluation criteria used for the sites listed below.

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

- **site integrity** (i.e. primary vs. secondary context),
- **amount of deposit, range of features** (e.g., stonewalling, stone tools and enclosures),
- **uniqueness** and
- **potential** to answer present research questions.

The site significance rating scale is as follows:

HIGH: Must be mitigated or not impacted on at all.

LOW – MEDIUM: May require further work before development can commence.

NO SIGNIFICANCE: Do not require mitigation.

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

- A - No further action necessary;
- B - Mapping of the site and controlled sampling required;
- C - Preserve site, or extensive data collection and mapping of the site; and
- D - Preserve site

Impacts on these sites by the development will be evaluated as follows

## **5.1 Impact**

The potential environmental impacts that may result from construction activities.

### **5.1.1 Nature and existing mitigation**

Natural conditions and conditions inherent in the project design that alleviate (control, moderate, curb) impacts. All management actions, which are presently implemented, are considered part of the project design and therefore mitigate against impacts.

## **5.2 Evaluation**

### **5.2.1 Impact Significance**

The impact significance rating scale is as follows:

*HIGH:* Impacts of a substantial order. In the case of negative impacts, mitigation and/or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these.

In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.

*MODERATE:* Impact would be real but not substantial within the bounds of those, which could occur. In the case of negative impacts, mitigation and/or remedial activity would be both feasible and easily possible. In the case of positive impacts, other means of achieving these benefits would be about equal, cost and effort.

*LOW:* Impact would be of low order and with little effect. In the case of negative impacts, mitigation and/or remedial activity would be either easily achieved or little would be required, or

both. In case of positive impacts, alternative means of achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.

*VERY LOW:* Impact would be negligible. In the case of negative impacts, almost no mitigation and/or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple. In the case of positive impacts, alternative means would be almost all likely to be better, in one or a number of ways, than this means of achieving the benefit.

*NO EFFECT:* There would not be any impact at all - not even a very low impact on the system or any of its parts.

**5.2.2 Certainty**

*DEFINITE:* More than 90% sure of a particular fact. Substantial supportive data exist to verify the assessment.

*PROBABLE:* Over 70% sure of a particular fact, or of the likelihood of impact occurring.

*POSSIBLE:* Only over 40% sure of a particular fact or of the likelihood of an impact occurring.

*UNSURE:* Less than 40% sure of a particular fact or likelihood of an impact occurring.

**5.2.3 Duration**

*SHORT TERM:* 0 to 5 years

*MEDIUM:* 6 to 20 years

*LONG TERM:* more than 20 years

*DEMOLISHED:* site will be demolished or is already demolished

Example

*Impact Evaluation*

Impact	Significance	Certainty	Duration	Mitigation
Negative	high negative	> 90% sure	long: > 20 years	A

## 6. SITES OF SIGNIFICANCE

The following section outlines the sites identified in the development area, and evaluates them according to the evaluation criteria of the National Heritage Resources Act.

### 6.1 RW 001

#### *6.1.1 The identification and mapping of all heritage resources in the affected area*

The site consists of the stone foundations of a square structure. The site is highly disturbed and most of the foundations have been removed.



**Figure 1 – Note the rough stone wall foundations.**



**Figure 2 – General site condition**

***6.1.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The site is of no significance.

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999)

- Section 3(3)(c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- Section 3(3)(d) – its importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.
- Section 3(3)(f) - its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.1.3 An assessment of the impact of the development on such heritage resources and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact of the pipeline on this site will be low negative as the site has no research value.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.1.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.1.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

None required.

**6.1.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

No mitigation required.

**6.2 RW 002**

***6.2.1 The identification and mapping of all heritage resources in the affected area***

The site consists of a recent historic square structure. The building was constructed with sun dried clay bricks. The dwelling consists of multiple rooms, and is in a low state of preservation.



**Figure 3 – Structure constructed of mud bricks**

***6.2.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

No indication of age could be deducted from the structures on site. No indication of dwellings in this area could be found from the archival maps consulted. It is therefore unlikely that the site is older than 60 years.

The site is of no significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.2.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact of the pipeline on this site will be low negative as the site has no research value.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.2.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.2.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

No further action needed on this site.

***6.2.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

No further action needed on this site.

### 6.3 RW 003

#### ***6.3.1 The identification and mapping of all heritage resources in the affected area***

The site consists of multiple structures indicated by rubble and cement foundations. Most of these seem to be associated with recent historic agricultural activities. The low rocky ridge to the east of the structures are characterised by multiple prospecting trenches and holes.

Stone foundations of square cattle kraals are also found in between the rubble at the foot of the ridge.



**Figure 4 – Rubble on site**

***6.3.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The archival maps consulted indicate that structures in this area occur that is older than 60 years. Structures older than 60 years are protected by legislation.

The site is of low significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.3.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact of the pipeline on this site will be low negative as the site has no research value.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.3.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.3.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

None required

***6.3.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

No mitigation required.

## 6.4 RW 004

### ***6.4.1 The identification and mapping of all heritage resources in the affected area***

The site consists of a single elongated stone and cement constructed dip for small live stock. The dip is approximately 20 metres long and extends north to south.



**Figure 5 – Dip for small live stock**

### ***6.4.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The site is of low significance

This site is classified as important based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999)

Section 3(3)(a) – its importance in the community, or pattern of South Africa’s history

Section 3(3)(g) – its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

**6.4.3 An assessment of the impact of the development on such heritage resources and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact of the pipeline on this site will be low negative as the site has no research value.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.4.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable

**6.4.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

None required.

**6.4.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

No mitigation required.

## 6.5 RW 005

### ***6.5.1 The identification and mapping of all heritage resources in the affected area***

The site is that of an old rock claded dam wall, extending 100 metres east to west. A spill way was constructed on the eastern side of the wall.



**Figure 6 – Dam wall**

### ***6.5.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The site is of low significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999)

- Section 3(3)(c) - its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;

- Section 3(3)(d) – its importance in demonstrating the principle characteristics of a particular class of South Africa’s natural or cultural places or objects.
- Section 3(3)(f) - its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.5.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact of the pipeline on this site will be low negative as the site has no research value.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.5.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.5.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

The best option and first price would be the preservation of the site *in situ*, therefore diverting the pipeline within the 100 metre buffer.

**6.5.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

No mitigation required.

**6.6 RW 006**

**6.6.1 The identification and mapping of all heritage resources in the affected area**

The site consists of at least three stone packed graves aligned east west. The site is highly over grown and no diagnostic photograph was possible.

**6.6.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25of 1999).**

The site is of high significance

This site is classified as important based on evaluation of the National Heritage Resources Act 1999 (Act No 25of 1999)

Section 3(3)(a) – its importance in the community, or pattern of South Africa’s history

Section 3(3)(g) – its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

**6.6.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

In the event that the final alignment cannot be moved to accommodate these graves, the impact will be highly negative.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	High	Possible	Long Term	C

***6.6.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources***

Most of the farmers and labourers consulted with regards to graves and cemeteries expressed a need for the preservation of the cemeteries. They however also indicated that if in the case of relocation of such a cemetery they would like to be consulted and be part of the process.

***6.6.5 If heritage resources will be affected by the proposed development, the consideration of alternatives***

The best option and first price would be the preservation of the cemetery in situ, by moving the pipeline alignment to exclude these graves.

***6.6.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

If the cemetery were to be preserved in situ, it will have to be fenced of and provided with a gate for access by family members. A buffer zone of at least 20 meters will have to be kept around the cemetery as to facilitate the protection of the site during development.

In the instance that the cemetery needs to be relocated this must be done with adherence to all legal requirements as well as an extensive social consultation process required within the process. It is well advised that a company with a proven track record be used to manage and complete such a project.

**6.7 RW 007**

**6.7.1 The identification and mapping of all heritage resources in the affected area**

The site consists of at least six stone packed graves aligned east west.



**Figure 7 - Stone packed graves**

**6.7.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Resources Act 1999 (Act No 25 of 1999).**

The site is of high significance

This site is classified as important based on evaluation of the National Heritage Resources Act 1999 (Act No 25 of 1999)

Section 3(3)(a) – its importance in the community, or pattern of South Africa’s history

Section 3(3)(g) – its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

**6.7.3 An assessment of the impact of the development on such heritage resources and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

In the event that the final alignment cannot be moved to accommodate these graves, the impact will be highly negative.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	High	Possible	Long Term	C

**6.7.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Most of the farmers and labourers consulted with regards to graves and cemeteries expressed a need for the preservation of the cemeteries. They however also indicated that if in the case of relocation of such a cemetery they would like to be consulted and be part of the process.

**6.7.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

The best option and first price would be the preservation of the cemetery in situ, by moving the pipeline alignment to exclude these graves.

**6.7.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

If the cemetery were to be preserved in situ, it will have to be fenced off and provided with a gate for access by family members. A buffer zone of at least 20 meters will have to be kept around the cemetery as to facilitate the protection of the site during development.

In the instance that the cemetery needs to be relocated this must be done with adherence to all legal requirements as well as an extensive social consultation process required within the process. It is well advised that a company with a proven track record be used to manage and complete such a project.

## 6.8 2528CC-MHC013

### ***6.8.1 The identification and mapping of all heritage resources in the affected area***

The site consists of the Oosthuizen family cemetery, although a few other families like van Aarde and Beyers have been laid to rest here. The earliest visible date is 1936 meaning that the site is protected under section 36 of the relevant legislation. The site consists of at least 15 graves with formal grave dressings. However, 10 meter to the east of the cemetery is two possible stone packed graves.



**Figure 8 – Oosthuizen cemetery**



**Figure 9 – Stone packed grave**

**6.8.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25of 1999).**

The site is of high significance

This site is classified as important based on evaluation of the National Heritage Resources Act 1999 (Act No 25of 1999)

Section 3(3)(a) – its importance in the community, or pattern of South Africa’s history

Section 3(3)(g) – its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

**6.8.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

In the event that the final alignment cannot be moved to accommodate these graves, the impact will be highly negative.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	High	Possible	Long Term	C

**6.8.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Most of the farmers and labourers consulted with regards to graves and cemeteries expressed a need for the preservation of the cemeteries. They however also indicated that if in the case of relocation of such a cemetery they would like to be consulted and be part of the process.

***6.8.5 If heritage resources will be affected by the proposed development, the consideration of alternatives***

The best option and first price would be the preservation of the cemetery in situ, by moving the pipeline alignment to exclude these graves.

***6.8.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

If the cemetery were to be preserved in situ, it will have to be fenced off and provided with a gate for access by family members. A buffer zone of at least 20 meters will have to be kept around the cemetery as to facilitate the protection of the site during development.

In the instance that the cemetery needs to be relocated this must be done with adherence to all legal requirements as well as an extensive social consultation process required within the process. It is well advised that a company with a proven track record be used to manage and complete such a project.

## 6.9 2528CC-MHC018

### ***6.9.1 The identification and mapping of all heritage resources in the affected area***

The site is located on the banks of the Hennops River and consists of square structures constructed with stone foundations. Modern elements like cement and bricks are found scattered over the area.



**Figure 10 – Square stone structures**

### ***6.9.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The archival maps consulted indicate that structures in this area occur that is older than 60 years. Structures older than 60 years are protected by legislation.

The site is of low significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

***6.9.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.***

The project will provide a substantial boost to the financial well being of the area. In the short term the proposed development will provide the area with numerous job opportunities and income to developers and the numerous contractors. The preservation of this site will not contribute to the overall social and economic situation of the area.

***Impact Evaluation***

Impact	Significance	Certainty	Duration	Mitigation
Negative	Moderate	Possible	Long Term	B

***6.9.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources***

Not applicable.

**6.9.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

The best option and first price would be the preservation of the site *in situ*. If the proposed development is of such a nature that the site will be severely impacted upon proper mitigation of the site needs to be done.

**6.9.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

If the site were to be preserved *in situ*, it will have to be fenced off and a buffer zone of at least 10 meters will have to be kept around the site as to facilitate the protection of the site during construction.

In the instance that the site needs to be destructed, an archaeologist needs to mitigate the site. Mitigation could include documentation of the site by means of site sketches and excavation to collect a representative sample for classification, that a watching brief be agreed upon by which an archaeologist is onsite during construction to document and mitigate any features and finds made during construction.

After mitigation, a permit will have to be applied for to destruct the site. This can only be issued by the South African Heritage Resources Agency. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project. Matakoma Heritage Consultants can facilitate this process.

## 6.10 2528CC-MHDC019

### ***6.10.1 The identification and mapping of all heritage resources in the affected area***

This is the location of a square mud brick structure. The site is located close to the *Swart spruit* on a small ridge. The site is associated to recent farm labour housing.



**Figure 11 – Recent mud brick dwelling**

### ***6.10.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

No indication of age could be deducted from the structures on site. No indication of dwellings in this area could be found from the archival maps consulted. It is therefore unlikely that the site is older than 60 years.

The site is of no significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.10.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The project will provide a substantial boost to the financial well being of the area. In the short term the proposed development will provide the area with numerous job opportunities and income to developers and the numerous contractors. The preservation of this site will not contribute to the overall social and economic situation of the area.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.109.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

***6.19.5 If heritage resources will be affected by the proposed development, the consideration of alternatives***

No further action needed on this site.

***6.19.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

No further action needed on this site.

## 6.11 2528CC-MHC020

### 6.11.1 *The identification and mapping of all heritage resources in the affected area*

This is the location of several stone walled enclosures on a low ridge next to the *Swart Spruit*. The site is associated with Late Iron Age groups that can be found in the area. In one of the enclosures undecorated ceramics were found.



Figure 12 – Undecorated ceramic



**Figure 13– Stone walled enclosure**

***6.11.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The site is of low to medium significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999)

- Section 3(3)(c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- Section 3(3)(d) – its importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.
- Section 3(3)(f) - its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.11.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

Because of the nature of the proposed pipeline, a moderate impact is foreseen on the Heritage Resources of the area. However, the possibility does exist for a high negative impact if any development takes place in the proximity of the site.

The project will provide a substantial boost to the financial well being of the area. In the short term the proposed development will provide the area with numerous job opportunities and income to developers and the numerous contractors. The preservation of this site will not contribute to the overall social and economic situation of the area.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Moderate	Possible	Long Term	B

**6.11.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.11.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

The best option and first price would be the preservation of the site *in situ*. If the proposed development is of such a nature that the site will be severely impacted upon proper mitigation of the site needs to be done.

**6.11.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

If the site were to be preserved *in situ*, it will have to be fenced off and a buffer zone of at least 10 meters will have to be kept around the site as to facilitate the protection of the site during construction.

In the instance that the site needs to be destructed, an archaeologist needs to mitigate the site. Mitigation could include documentation of the site by means of site sketches and excavation to collect a representative sample for classification, that a watching brief be agreed upon by which an archaeologist is onsite during construction to document and mitigate any features and finds made during construction.

After mitigation, a permit will have to be applied for to destruct the site. This can only be issued by the South African Heritage Resources Agency. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project. Matakoma Heritage Consultants can facilitate this process.

**6.12 2528CC-MHC022**

***6.12.1 The identification and mapping of all heritage resources in the affected area***

This is the location of a partly destroyed square structure. The foundations are built of stone and the structure has at least one site.



**Figure 14 – Remnants of square structure**

**6.12.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).**

No indication of age could be deducted from the structures on site. No indication of dwellings in this area could be found from the archival maps consulted. It is therefore unlikely that the site is older than 60 years.

The site is of no significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.12.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The project will provide a substantial boost to the financial well being of the area. In the short term the proposed development will provide the area with numerous job opportunities and income to developers and the numerous contractors. The preservation of this site will not contribute to the overall social and economic situation of the area.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

***6.12.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources***

Not applicable.

***6.12.5 If heritage resources will be affected by the proposed development, the consideration of alternatives***

No further action needed on this site.

***6.12.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

No further action needed on this site.

**6.13 2528CC-MHC029**

***6.13.1 The identification and mapping of all heritage resources in the affected area***

This is the location of an old farm house. The house is currently inhabited by the overseer of the Riversong Property.



**Figure 15 – Site viewed from east**

***6.13.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The archival maps consulted indicate that structures in this area occur that is older than 60 years. Structures older than 60 years are protected by legislation.

The site is of low to medium significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.13.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

Because of the nature of the proposed pipeline, a possible moderate impact is foreseen on the Heritage Resources of the area. However, the possibility does exist for a high negative impact if any development takes place in the proximity of the site.

The project will provide a substantial boost to the financial well being of the area. In the short term the proposed development will provide the area with numerous job opportunities and income to developers and the numerous contractors. The preservation of this site will not contribute to the overall social and economic situation of the area.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Moderate	Possible	Long Term	B

**6.13.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.13.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

The best option and first price would be the preservation of the site *in situ*. The structure can be reutilized and can serve for example as clubhouse etc. If the proposed development is of such a nature that the site will be severely impacted upon proper mitigation of the site needs to be done.

**6.13.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

If the site were to be preserved *in situ*, it will have to be fenced off and a buffer zone of at least 10 meters will have to be kept around the site as to facilitate the protection of the site during construction.

In the instance that the site needs to be destructed, a conservation architect needs to mitigate the site. Mitigation could include documentation of the site by means of site sketches.

After mitigation, a permit will have to be applied for to destruct the site. This can only be issued by the South African Heritage Resources Agency. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project. Matakoma Heritage Consultants can facilitate this process.

**6.14 2528CC-MHC030**

***6.14.1 The identification and mapping of all heritage resources in the affected area***

This is the location of square stone wall foundations. The site is highly disturbed by earth works in the area and of low significance. The site is associated with old farm labourer housing.



**Figure 16 – Remnants of square stone structure**

***6.14.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

No indication of age could be deduced from the structures on site. No indication of dwellings in this area could be found from the archival maps consulted. It is therefore unlikely that the site is older than 60 years.

The site is of no significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.14.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The project will provide a substantial boost to the financial well being of the area. In the short term the proposed development will provide the area with numerous job opportunities and income to developers and the numerous contractors. The preservation of this site will not contribute to the overall social and economic situation of the area.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.14.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

***6.14.5 If heritage resources will be affected by the proposed development, the consideration of alternatives***

No further action needed on this site.

***6.14.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

No further action needed on this site.

## 6.15 2528CC-MHC031

### ***6.15.1 The identification and mapping of all heritage resources in the affected area***

This is the location of the remnants of an old farm stead. Only the foundations of the structure are still visible. As indicated on the archival maps consulted a water furrow runs past the house. This furrow is still visible.



**Figure 17 – Historic farmstead ruins**

***6.15.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The archival maps consulted indicate that structures in this area occur that is older than 60 years. Structures older than 60 years are protected by legislation.

The site is of low significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.15.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The project will provide a substantial boost to the financial well being of the area. In the short term the proposed development will provide the area with numerous job opportunities and income to developers and the numerous contractors. The preservation of this site will not contribute to the overall social and economic situation of the area.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Moderate	Possible	Long Term	B

**6.15.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.15.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

The best option and first price would be the preservation of the site *in situ*. If the proposed pipeline is of such a nature that the site will be severely impacted upon proper mitigation of the site needs to be done.

**6.15.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

If the site were to be preserved *in situ*, it will have to be fenced off and a buffer zone of at least 10 meters will have to be kept around the site as to facilitate the protection of the site during construction.

In the instance that the site needs to be destructed, a conservation architect needs to mitigate the site. Mitigation could include documentation of the site by means of site sketches.

After mitigation, a permit will have to be applied for to destruct the site. This can only be issued by the South African Heritage Resources Agency. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project. Matakoma Heritage Consultants can facilitate this process.

**6.16 RW 008**

***6.16.1 The identification and mapping of all heritage resources in the affected area***

The site consists of at least five stone packed graves aligned east west.



**Figure 18 - Stone packed graves**

***6.16.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Resources Act 1999 (Act No 25 of 1999).***

The site is of high significance

This site is classified as important based on evaluation of the National Heritage Resources Act 1999 (Act No 25 of 1999)

Section 3(3)(a) – its importance in the community, or pattern of South Africa’s history

Section 3(3)(g) – its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

**6.16.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

In the event that the final alignment cannot be moved to accommodate these graves, the impact will be highly negative.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	High	Possible	Long Term	C

**6.16.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Most of the farmers and labourers consulted with regards to graves and cemeteries expressed a need for the preservation of the cemeteries. They however also indicated that if in the case of relocation of such a cemetery they would like to be consulted and be part of the process.

**6.16.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

The best option and first price would be the preservation of the cemetery in situ, by moving the pipeline alignment to exclude these graves.

**6.16.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

If the cemetery were to be preserved in situ, it will have to be fenced of and provided with a gate for access by family members. A buffer zone of at least 20 meters will have to be kept around the cemetery as to facilitate the protection of the site during development.

In the instance that the cemetery needs to be relocated this must be done with adherence to all legal requirements as well as an extensive social consultation process required within the process. It is well advised that a company with a proven track record be used to manage and complete such a project.

**6.17 RW 009**

**6.17.1 The identification and mapping of all heritage resources in the affected area**

The site consists of a single prospecting hole 8 x 4 metres in extent.



**Figure 19 – Prospecting hole**

**6.17.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).**

The site is of no significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999)

- Section 3(3)(c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;

- Section 3(3)(d) – its importance in demonstrating the principle characteristics of a particular class of South Africa’s natural or cultural places or objects.
- Section 3(3)(f) - its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.17.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact of the pipeline on this site will be low negative as the site has no research value.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.17.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.17.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

None required.

**6.17.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

No mitigation required.

**6.18 RW 010**

***6.18.1 The identification and mapping of all heritage resources in the affected area***

The site consists of a recent historic square structure. The building was constructed with sun dried clay bricks. The dwelling consists of multiple rooms, and is in a low state of preservation.



**Figure 20 – Structure constructed of mud bricks**

***6.18.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

No indication of age could be deducted from the structures on site. No indication of dwellings in this area could be found from the archival maps consulted. It is therefore unlikely that the site is older than 60 years.

The site is of no significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.18.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact of the pipeline on this site will be low negative as the site has no research value.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.18.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.18.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

No further action needed on this site.

***6.18.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

No further action needed on this site.

## 6.19 RW 011

### **6.19.1 The identification and mapping of all heritage resources in the affected area**

The site is that of square structures constructed of stone and mud. The structures are arranged around a square enclosure. No further evaluation was possible due to security risks in the area.

### **6.19.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).**

The archival maps consulted indicate that structures in this area occur that is older than 60 years. Structures older than 60 years are protected by legislation.

The site is of low significance
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This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

### **6.19.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact of the pipeline on this site will be possibly low negative.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.19.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.19.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

No further action needed on this site.

**6.19.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

No further action needed on this site.

## 6.20 RW012

### ***6.20.1 The identification and mapping of all heritage resources in the affected area***

Low density lithic scatter located over a large area.



**Figure 21 – Stone Age artefacts.**

***6.20.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

Due to the well researched Stone Age site of Xanadu in the area, stone age deposits can be encountered during construction.

The site is of medium significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.20.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact of the pipeline on this site will be low negative.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	B

**6.20.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.20.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

The area needs to be monitored during construction by means of an agreed upon watching brief with an archaeologist.

***6.20.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

The area needs to be monitored during construction by means of an agreed upon watching brief with an archaeologist.

## 6.21 RW 014

### ***6.21.1 The identification and mapping of all heritage resources in the affected area***

The site consists of a historic dwelling associated with the Meerhof train station. The house is currently occupied.



**Figure 22 – Railway housing**

### ***6.12.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The structure is older than 60 years and protected by legislation.

The site is of medium significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.21.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

No impact is foreseen on the site.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.21.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.21.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

No further action needed on this site.

***6.21.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

No further action needed on this site.

## 6.22 RW 015

### ***6.22.1 The identification and mapping of all heritage resources in the affected area***

The site consists of a historic dwelling associated with the Meerhof train station. The house is currently occupied.



**Figure 23 – Railway Housing**

### ***6.22.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The structure is older than 60 years and protected by legislation.

The site is of medium significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.22.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

No impact is foreseen on the site.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	A

**6.22.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.22.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

No further action needed on this site.

***6.22.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

No further action needed on this site.

## 6.23 RW 016

### ***6.23.1 The identification and mapping of all heritage resources in the affected area***

The site is that of the train bridge crossing the Hennops River entering the Hartbeespoort Dam. The bridge and some of the steel railway sleepers on both sides of the crossing bears the date of 1938.



**Figure 24 – Train bridge**

### ***6.23.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).***

The site is older than 60 years and protected by legislation

The site is of low significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.23.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact will be of low negative as the bridge will not be demolished.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	B

**6.23.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.23.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

A permit from the South African Heritage Resources Agency will be necessary for alterations on the bridge as it is older than 60 years and thus protected under legislation.

***6.23.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

No further action needed on this site.

## 6.24 RW 017

### 6.24.1 *The identification and mapping of all heritage resources in the affected area*

This is the approximate location, as derived from the desktop study, of the *isivivane*



**Figure 25 –Possible isivivane**

### 6.24.2 *An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25 of 1999).*

These features are of high significance since their functions and purpose in pre history are not yet fully understood. Some researchers argue that they mark borders and other feels that they are markers for trek routes avoiding deep river mouths and that they mark the route with the least resistance for herds.

The site is of medium to high significance
--

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999)

- Section 3(3)(c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- Section 3(3)(d) – its importance in demonstrating the principle characteristics of a particular class of South Africa’s natural or cultural places or objects.
- Section 3(3)(f) - its importance in demonstrating a high degree of creative or technical achievement at a particular period;

**6.24.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact on the site will be of low negative as the pipeline alignment can be altered to preserve the stone cairn.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Low	Possible	Long Term	B

**6.24.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.24.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

The best option and first price would be the preservation of the site *in situ*, by realigning the pipeline.

***6.24.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development***

The area needs to be monitored during construction by means of an agreed upon watching brief with an archaeologist.

**6.25 RW 018**

**6.25.1 The identification and mapping of all heritage resources in the affected area**

This is the location of a memorial plaque for A.W.J. Pretorius. He was a Commandant-General of the South African Republic and is described as a hero at the battle of Blood River. He died on the farm Grootplaas De rust on the 23<sup>rd</sup> of July 1853. His remains were later re-interred at the Old Cemetery in Pretoria.



**Figure 26 – Memorial Plaque**

**6.25.2 An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Resources Act 1999 (Act No 25 of 1999).**

The site is of medium significance

This site is classified based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) Section 3(3) –

- (a) its importance in the community, or pattern of South Africa's history;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;

**6.25.3 An assessment of the impact of the development on such heritage recourses and an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.**

The impact on the site will be low negative.

**Impact Evaluation**

Impact	Significance	Certainty	Duration	Mitigation
Negative	Moderate	Possible	Long Term	B

**6.25.4 The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources**

Not applicable.

**6.25.5 If heritage resources will be affected by the proposed development, the consideration of alternatives**

The best option and first price would be the preservation of the site *in situ*, be realigning the pipeline.

**6.25.6 Plans for mitigation of any adverse effects during and after the completion of the proposed development**

If the site were to be preserved *in situ*, it will have to be fenced of and a buffer zone of at least 10 meters will have to be kept around the site as to facilitate the protection of the site during construction.

## **7. ASSUMPTIONS AND LIMITATIONS**

Due to the nature of cultural remains that occur, in most cases, below surface, the possibility remains that some cultural remains may not have been discovered during the survey. Although Matakoma Heritage Consultants surveyed the area as thorough as possible, it is incumbent upon the developer to inform the relevant heritage agency should further cultural remains be unearthed or laid open during the process of development.

## **8. LEGAL AND POLICY REQUIREMENTS**

In areas where there has not yet been a systematic survey to identify conservation worthy places, a permit is required to alter or demolish any structure older than 60 years. This will apply until a survey has been done and identified heritage resources are formally protected.

Archaeological and palaeontological sites, materials, and meteorites are the source of our understanding of the evolution of the earth, life on earth and the history of people. In the new legislation, permits are required to damage, destroy, alter, or disturb them. People who already possess material are required to register it.

The management of heritage resources are integrated with environmental resources and this means that before development takes place heritage resources are assessed and, if necessary, rescued.

In addition to the formal protection of culturally significant graves, all graves, which are older than 60 years and are not in a cemetery (such as ancestral graves in rural areas), are protected. The legislation protects the interests of communities that have interest in the graves: they may be consulted before any disturbance takes place.

The graves of victims of conflict and those associated with the liberation struggle will be identified, cared for, protected and memorials erected in their honour.

Anyone who intends to undertake a development must notify the heritage resource authority and if there is reason to believe that heritage resources will be affected, an impact assessment report must be compiled at the developer's cost. Thus developers will be able to proceed without uncertainty about whether work will have to be stopped if a heritage resource is discovered.

According to the National Heritage Act (Act 25 of 1999 section 32) it is stated that:

An object or collection of objects, or a type of object or a list of objects, whether specific or generic, that is part of the national estate and the export of which SAHRA deems it necessary to control, may be declared a heritage object, including –

- objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, meteorites and rare geological specimens;
- visual art objects;
- military objects;
- numismatic objects;
- objects of cultural and historical significance;
- objects to which oral traditions are attached and which are associated with living heritage;
- objects of scientific or technological interest;
- books, records, documents, photographic positives and negatives, graphic material, film or video or sound recordings, excluding those that are public records as defined in section 1 (xiv) of the National Archives of South Africa Act, 1996 ( Act No. 43 of 1996), or in a provincial law pertaining to records or archives; and
- any other prescribed category.

If it is necessary to refer to any of the above-mentioned objects, the National Heritage Act (Act 25 of 1999 Sections 31-38) are included in Appendix 2.

Under the new National Heritage Resources Act (Act No. 25 of 1999), provisions are made that deal with, and offer protection, to all historic and pre-historic cultural remains, including graves and human remains.

- Graves younger than 60 years fall under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the Office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning, or in some cases the MEC for Housing and Welfare. Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. In order to handle and transport human remains the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

- Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the South African Heritage Resource Agency (SAHRA). The procedure for Consultation Regarding Burial Grounds and Graves (Section 36(5) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in the category located inside a formal cemetery administrated by a local authority will also require the same authorisation as set out for graves younger than 60 years over and above SAHRA authorisation. If the grave is not situated inside a formal cemetery but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws set by the cemetery authority must be adhered to.

Refer to **Annexure B** for further information on legislation.

## **9. ASSESSMENT AND RECOMMENDATIONS**

*All the sites identified during the survey are indicated on the map provided in **Annexure C**.*

*A list of coordinates of the sites is provided in **Annexure D**.*

### **9.1 Recommendations**

#### ***Archaeological Sites***

*Number of sites found:*

Three sites associated with the Late Iron Age and Stone Age. These are sites **MHC022; RW012** and **RW017**.

*Recommendation:*

The best option and first price would be the preservation of the sites in situ. If the pipeline is of such a nature that the sites will be impacted on, mitigation measures will have to be taken.

If the sites were to be preserved in situ, it will have to be fenced off. A buffer zone of at least 20 meters will have to be kept around the sites as to facilitate the protection of the sites during construction.

In the instance that the sites need to be destructed, an archaeologist needs to document the sites and afterwards a destruction permit needs to be applied for from the Provincial office of the South African Heritage Resources Agency (SAHRA) before such a time that the sites is destructed.

### **Cemeteries**

#### *Number of sites found:*

Two cemeteries were found that consisted of approximately 31 graves. These are sites **RW006**, **RW007**, **MHC013** and **RW008**.

#### *Recommendation:*

The best option and first price would be the preservation of the cemeteries *in situ*. If the pipeline is of such a nature that the site will be severely impacted on the cemeteries will have to be relocated.

If the cemeteries are to be preserved *in situ*. It will have to be fenced of and provided with access gate for family members. A buffer zone of at least 20 meters will have to be kept around the cemetery as to facilitate the protection of the site during construction.

In the instance that the cemeteries need to be relocated, this must be done with adherence to all legal requirements as well as an extensive social consultation process required within the process. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project.

### **Historical Farmsteads and other structures**

#### *Number of sites found:*

Ten structures were found of which sites **RW003**, **MHC018**, and **MHC031** area ruins of structures. The remaining structures, **RW004**, **RW005**, **RW014**, **RW015**, **RW016**, **MHC029**, and **RW018** are still utilised as housing, bridges, monuments or dam walls.

#### *Recommendation:*

The best option and first price would be the preservation of the structures in situ. If the pipeline is of such a nature that the sites will be severely impacted on the sites will have to be documented and a destruction permit applied for before destruction.

If the sites are to be preserved *in situ*, it will have to be fenced off and a buffer zone of at least 20 meters will have to be kept around the sites as to facilitate the protection of the site during construction.

In the instance that the structure needs to be destructed, a conservation architect needs to document the sites and afterwards a destruction permit needs to be applied for from the Provincial office of the South African Heritage Resources Agency (SAHRA) before such a time that the sites is destructed. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project.

### ***Labourer Homestead ruins***

*Number of sites found:*

Seven structures or foundations have been found of dwelling that could possibly be older than 60 years. These are sites **MHC019, RW001, RW002, RW010, RW011, MHC022** and **MHC030**.

*Recommendation:*

The best option and first price would be the preservation of the ruins in situ. If the pipeline is of such a nature that the sites will be severely impacted on the sites will have to be documented and a destruction permit applied for before destruction.

If the sites are to be preserved *in situ*, it will have to be fenced off and a buffer zone of at least 20 meters will have to be kept around the sites as to facilitate the protection of the site during construction.

In the instance that the ruins needs to be destructed, the sites needs to be document and afterwards a destruction permit needs to be applied for from the Provincial office of the South African Heritage Resources Agency (SAHRA) before such a time that the sites is destructed. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project.

### ***Mining Trenches***

*Number of sites found:*

One site, **RW009**, has been found that is mining related. However it is of no significance

## 9.2 Management Guidelines

1. The National Heritage Resources Act (Act 25 of 1999) states that, '  
*any person who intends to undertake a development categorised as-*
  - (a) *the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
  - (b) *the construction of a bridge or similar structure exceeding 50m in length;*
  - (c) *any development or other activity which will change the character of a site-*
    - (i) *exceeding 5 000m<sup>2</sup> in extent; or*
    - (ii) *involving three or more existing erven or subdivisions thereof; or*
    - (iii) *involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
    - (iv) *the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*
  - (d) *the re-zoning of a site exceeding 10 000m<sup>2</sup> in extent; or*
  - (e) *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,*

*must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

In the event that an area previously not included in an archaeological or cultural resources survey, is to be disturbed. The South African Heritage Resources Agency (SAHRA) needs to be contacted. An enquiry must be lodged with them into the necessity for a Heritage Impact Assessment.

2. In the event that a heritage assessment is required it is advisable to utilise a qualified heritage practitioner preferably registered with the Cultural Resources Management Section (CRM) of the Association of Southern African Professional Archaeologists (ASAPA). *Refer to subsection 8.*

This survey and evaluation must include:

- (a) The identification and mapping of all heritage resources in the area affected;

- (b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6 (2) or prescribed under section 7 of the National Cultural Resources Act;
- (c) an assessment of the impact of the development on such heritage resources;
- (d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- (e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
- (f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- (g) plans for mitigation of any adverse effects during and after the completion of the proposed development.

3. It is advisable that an information section on cultural resources be included in the SHEQ training given to contractors and employees involved in surface earthmoving activities. This sections must include basic information on:
  - a. Heritage
  - b. Graves;
  - c. Archaeological finds; and
  - d. Historical Structures;

This module must be tailor made to include all possible finds that could be expected in that area of construction.

4. In the event that a possible find is discovered during construction, all activities must be halted in the area of the discovery and a qualified archaeologist contacted.
5. The archaeologist needs to evaluate the finds on site and make recommendations towards possible mitigation measures.
6. If mitigation is necessary, an application for a rescue permit must be lodged with SAHRA.
7. After mitigation an application must be lodged with SAHRA for a destruction permit. This application must be supported by the mitigation report generated during the rescue excavation. Only after the permit is issue may such a site be destroyed.
8. In the watching brief, timeframes and agreed upon schedules of actions between the company and the archaeologist must be agreed upon.

9. In the event that human remain are uncovered or previously unknown graves are discovered a qualified archaeologist needs to be contacted and an evaluation of the finds made.
10. If the remains are to be exhumed and relocated, the relocation procedures as accepted by SAHRA needs to followed. This includes an extensive social consultation process.

Matakoma Heritage Consultants can be contacted on the way forward in this regard.

## 10. LIST OF PREPARES

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**ANNEXURE A**

**ARCHIVAL AND HISTORICAL DESKTOP STUDY  
PORTION 7 OF THE FARM VLAKPLAATS 354-JR**

**Report: MAT-VLP-1**

**Compiled by: P.D. Birkholtz**

**Date: 14 December 2005**



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## **1. INTRODUCTION**

*Archaeology Africa* was appointed by *Matakoma Heritage Consultants* to undertake a historical and archival study of Portion 7 of the farm Vlakplaats 354-JR. The study forms part of the overall Heritage Impact Assessment undertaken for the proposed development of the said portion.

## **2. AIMS**

The primary aim of the study was to locate and review available archival and historical records in an attempt to provide supportive information for the Heritage Impact Assessment undertaken on the said portion.

The results of the study can be used to make recommendations and evaluations based on historical truth rather than conjecture.

## **3. METHODOLOGY**

The methodology consisted of the study of published and unpublished literature, archival records, as well as maps to compile the available information needed to address the project aims.

The following institutions were approached for information:

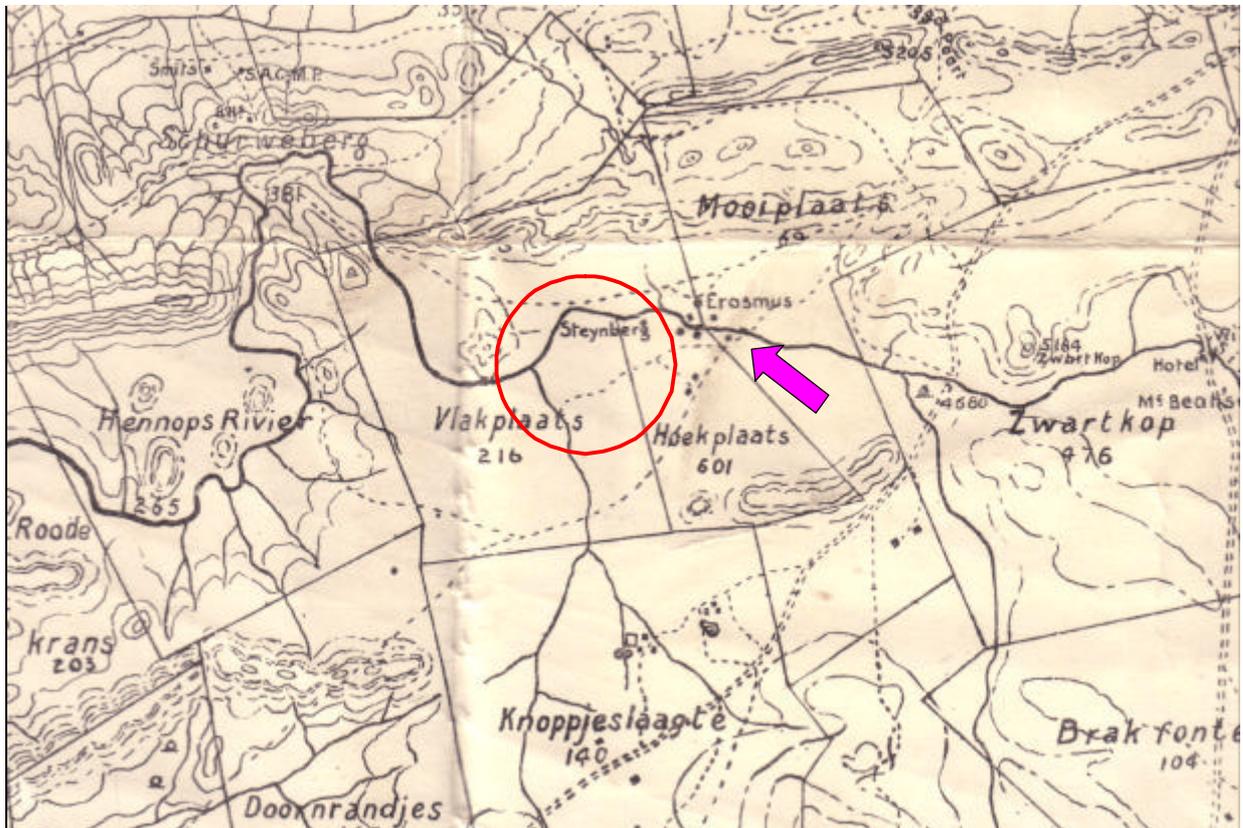
- National Archives, Pretoria
- Directorate: Surveys and Mapping, Cape Town
- UNISA Library, Pretoria

#### 4. CARTOGRAPHIC MATERIAL

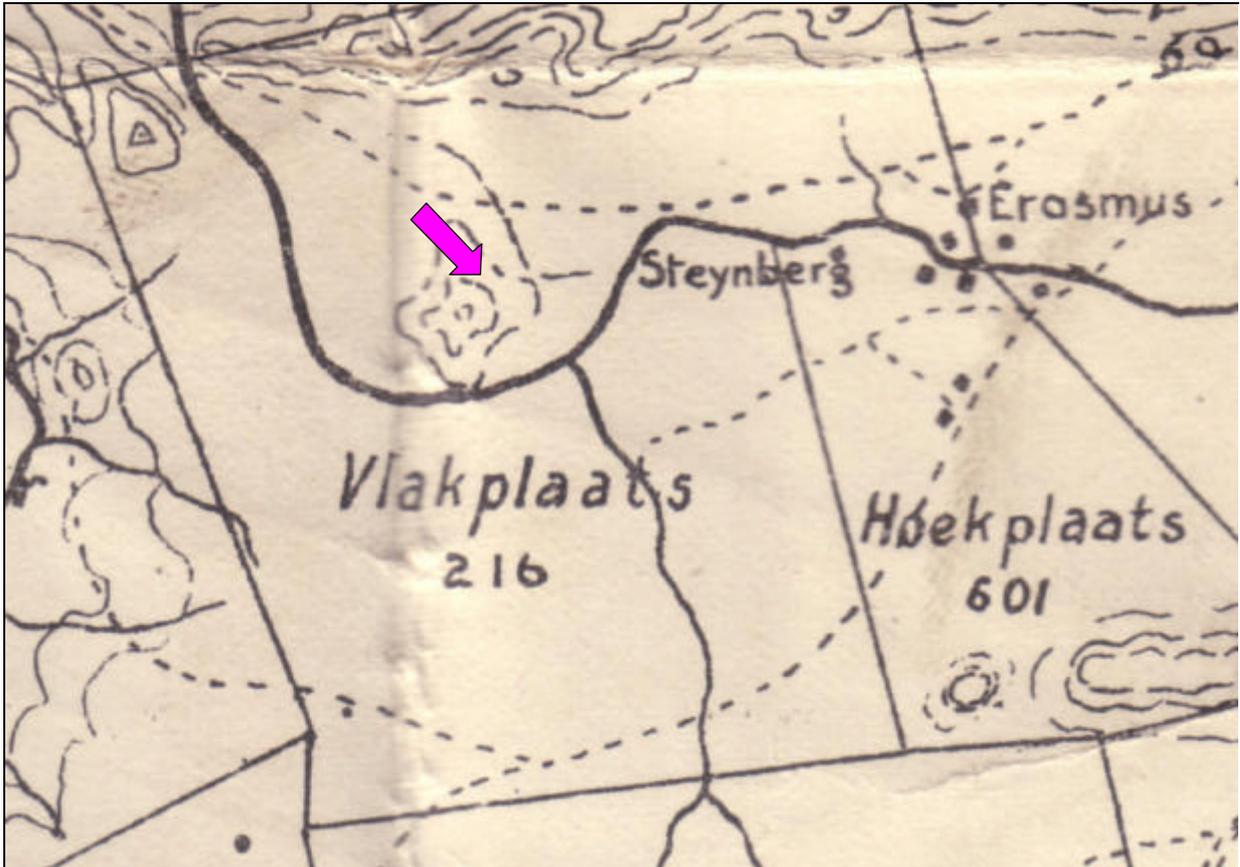
##### 4.1 Major Jackson Series Sheet “Pretoria”, Revised Edition 1902

A section of the “Pretoria” sheet from the Major Jackson Map Series is depicted in **Figure 1**. The map series was compiled, surveyed and produced during the Anglo Boer War of 1899 to 1902 (National Archives, Maps, 3/551).

The “Pretoria” sheet was first printed in August 1900, while the sheet depicted below represents the revised edition dated June 1902.



**Figure 1** Vlakplaats and surrounding areas as depicted on the Major Jackson Series “PRETORIA” Sheet, dated 1902 (revised edition). The red circle indicates the approximate position of the study area, whereas the purple arrow indicates the river crossing where it is believed Ian Hamilton with the Mounted Infantry Division crossed the Hennops River during the Battle of Six Mile Spruit (3-4 June 1900).



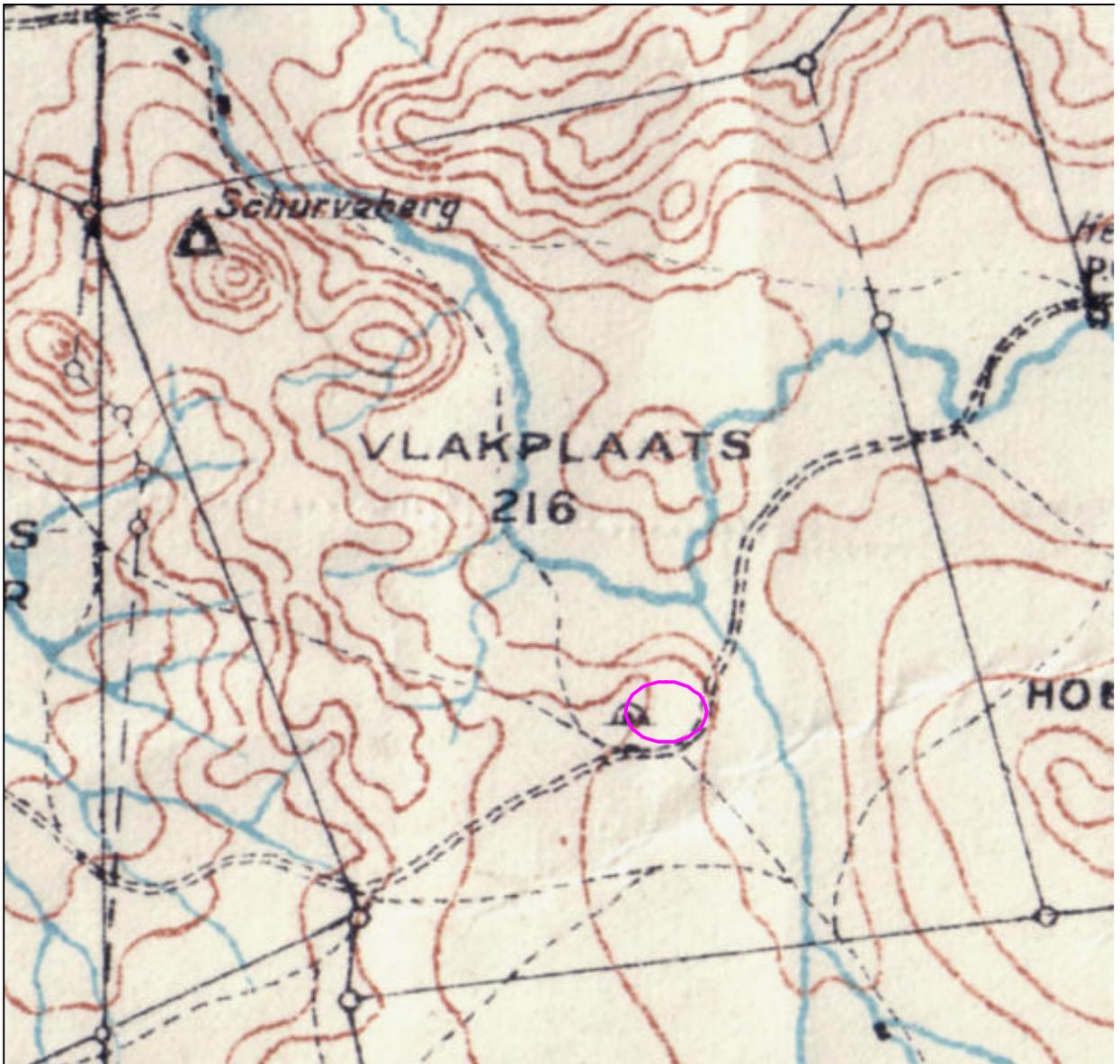
**Figure 2** Closer view of the farm Vlaplaats. The arrow indicates Alwynkoppie.

#### **4.2 "PRETORIA" Sheet, Surveyor-General Map, Revised 1930**

**Figure 3** depicts a section of the No. 19 sheet of an unknown map series. This sheet is titled "PRETORIA".

This map was compiled and drawn in the Office of the Surveyor General, Pretoria. Although its original production date is unknown, the sheet depicted here is a revised edition, dated 1930.

A single "hut" is shown within the boundaries of the proposed development area.



**Figure 3** Surveyor-General Map titled "PRETORIA". The map is a revised sheet which dates from 1930 (National Archives, Maps, 2/932). A heritage feature in the form of a "hut" is shown (see purple marker). Note the road and tracks.

### 4.3 2528CC Topographical Sheet, 1938-1939

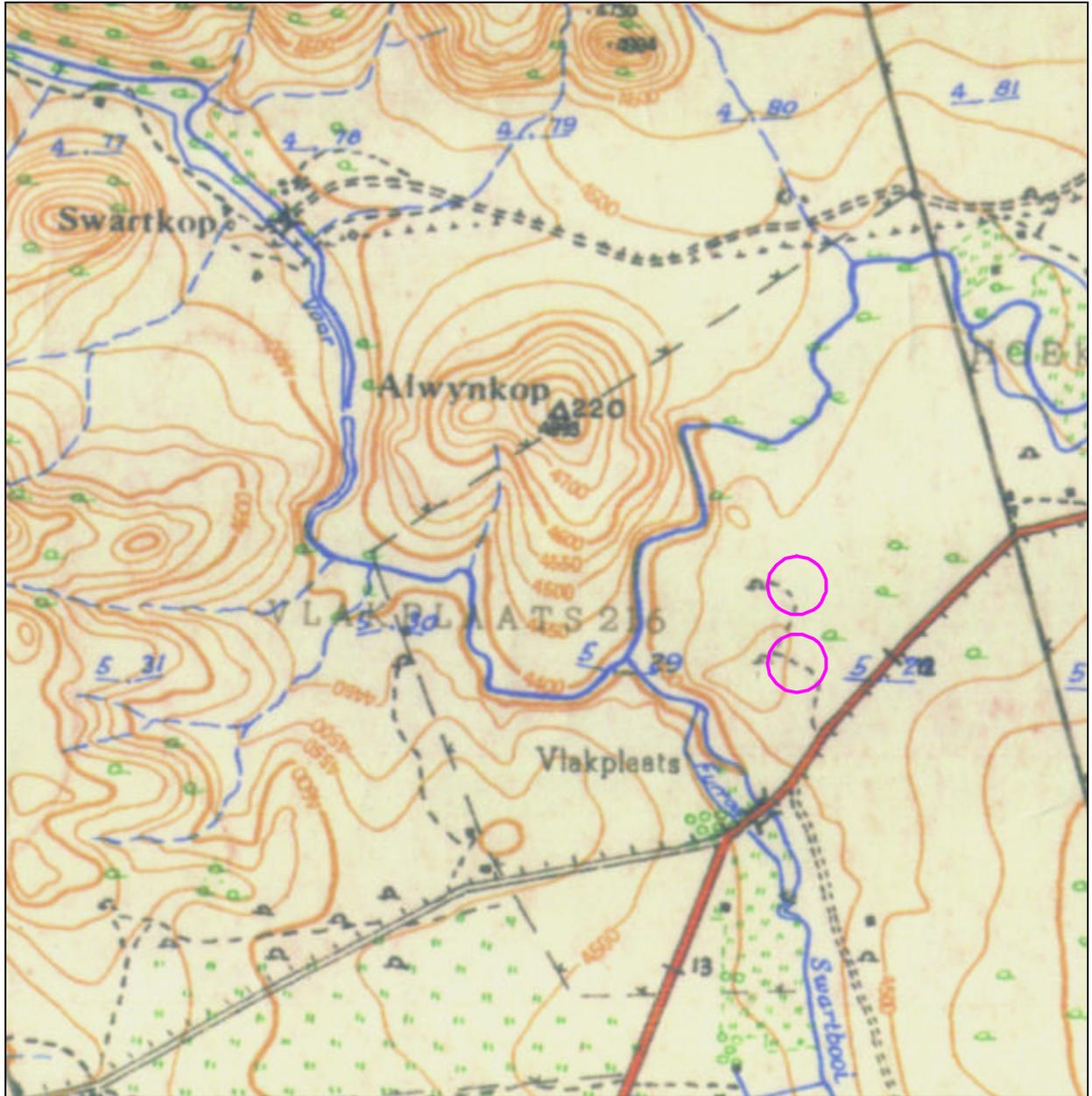
This map is the oldest edition of the 2528CC 1:50 000 topographical sheet. It was surveyed and drawn by the Trigonometrical Survey Office during 1938 and 1939.



**Figure 5** 2528CC Topographical Sheet, 1938-1939. Two huts are shown to the east (see purple markers), whereas three buildings (red markers) are indicated in two different localities on the remainder of the property. A water furrow is shown directly to the east of the southern buildings. Also note the agricultural fields between the furrow and the spruit.

#### 4.4 2528CC Topographical Map, 1943

The sheet depicted here is the second edition of the 2528CC topographical sheet. It was revised and drawn by the Trigonometrical Survey Office in 1943.

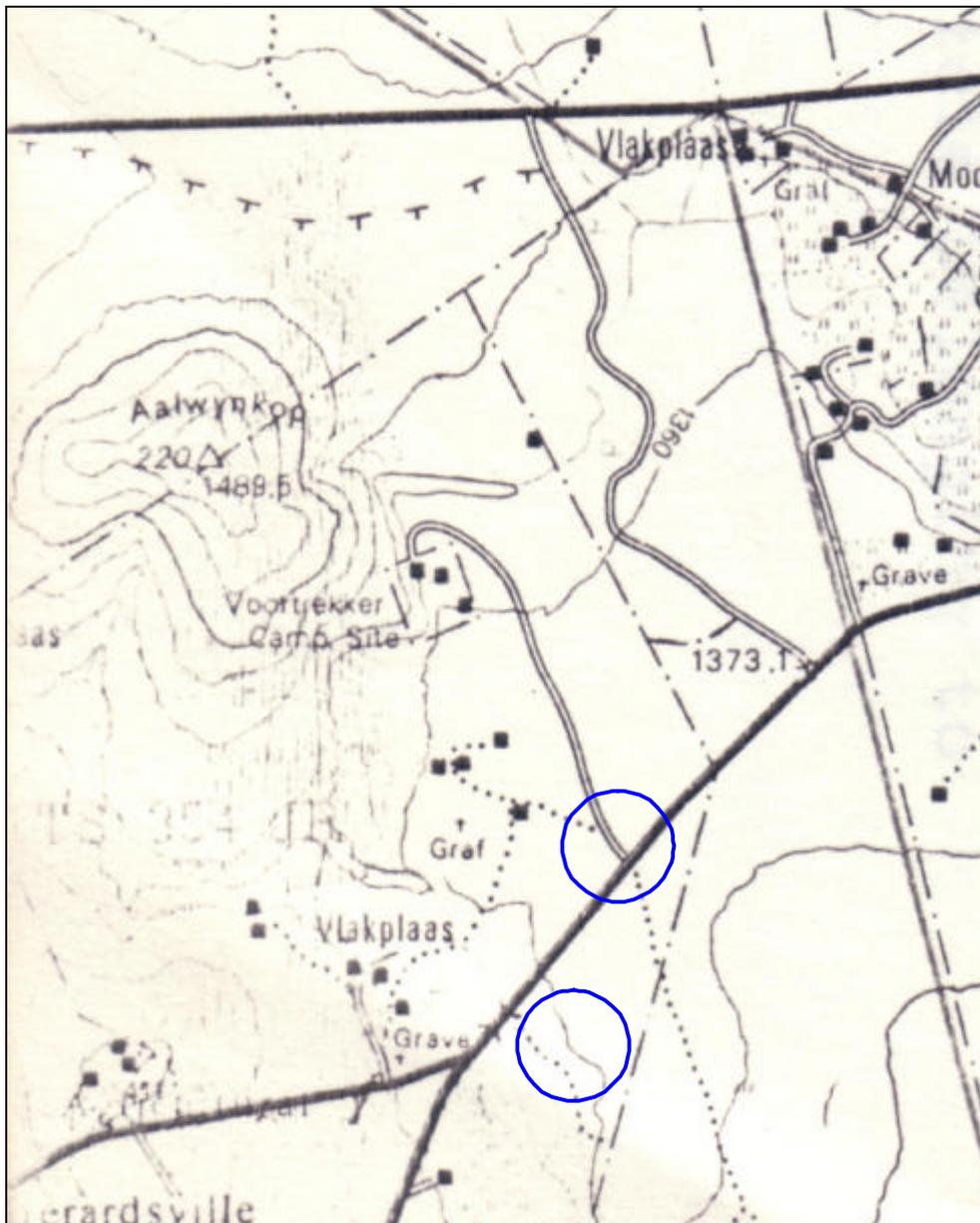


**Figure 6** 2528CC Topographical Sheet, Second Edition dated 1943. Two “huts” (see purple markers) are shown in exactly the same position as the ones indicated on the 1938-

1939 map. Although the southern buildings are not shown, the adjacent furrow is indicated.

#### 4.5 2528CC Topographical Map, 1975

**Figure 7** shows a section of the 2528CC topographical sheet dating from 1975.



**Figure 7** 2528CC Topographical Sheet, 1975. Two graves (blue markers) as well as a "Voortrekker Camp Site" are indicated.

## 5. EARLY FARM OWNERSHIP HISTORY

The first white person to permanently settle in the vicinity of present-day Pretoria was Lucas Cornelis Bronkhorst. During c.1839 he established his farm in the vicinity of present-day Fountains Valley. With time, increasing numbers of Voortrekkers also moved into the area and established themselves in the area. These arrivals increased to such an extent that a need for formal farm inspections to officially delineate farm boundaries was starting to be felt.

In response to this need, the Magistrate of Rustenburg sent a Land Commission to the area in August 1841. The aim of the commission, which consisted of G.J. Kruger (veldkornet of Rustenburg), M.J. Redelinghuis and W.J. Grobler, was to inspect the farm beacons of the area.

The Land Commission inspected many of the farms on which Pretoria was later to be formed and expanded. Pretoria was officially established on 16 November 1855 (Engelbrecht, 1955).

The farm Vlakplaats No. 216 (new number 354-JR) was also visited by the commission and inspected on 10 August 1841. Other farms inspected during the commission's activities include Rhenosterpoort, Rietvalley, Wonderboom, Swartkop, Cameelfontein and Elandsfontein.

The first transfer of Vlakplaats took place on 24 October 1859, when it was transferred by Government Transport to Jan Pringle.

On the same day, the farm was again transferred from J. Pringle to D.J.J. Oosthuizen. D.J.J. Oosthuizen remained the owner of the farm for a number of years. On 12 February 1864 it was transferred from him to Ockert Daniel Oosthuizen.

On 7 September 1870 the eastern portion (titled "A") of the farm was transferred from O.D. Oosthuizen to Coert Erasmus. Of interest is that a section (titled "All") of this eastern portion was joined with a portion of the neighbouring farm Mooiplaats No. 69 to form the farm Hoekplaats No. 601.

The western portion (titled "B") was only transferred after the passing away of O.D. Oosthuizen. Therefore, on 1 January 1884, the western portion was transferred from his estate to Maria Aletta Petronella Geldenhuis and Gerhardus Jacobus Oosthuizen.

## **6. ANGLO BOER WAR**

### ***6.1 Battle of Six Mile Spruit***

On 31 May 1900 Johannesburg was occupied by the British forces under the command of Lord Roberts (Breytenbach, 1963). Although the Boer forces had been on the retreat since the Battle of Doornkop (Klipriviersberg) of 28 and 29 May 1900, their leadership decided to establish a defensive line on the ridges to the south of Pretoria all along the Six Mile Spruit.

On 3 June 1900 the commander of the forces of the *Zuid-Afrikaansche Republiek*, General Louis Botha started positioning his commandoes and burghers in accordance with this plan. Du Toit was ordered to occupy a pass some 20 miles south-west of Pretoria. Important for the present study was the placement of General Koos de la Rey and his men on the hills directly to the south of Pretoria. He was supported by a six gun battery under Von Lossberg. Lemmer, who was supported by the artillery of Pretorius, occupied the hills east and north of Irene Station and Six Mile Spruit (Amery, 1906). The Boer position at this stage consisted of two main defensive lines. One of these lines stretched all along the Hennops River from Irene to a point opposite Quaggaspoort, and was commanded by Lemmer. The second defensive line, under the command of Generals Botha, De La Rey and others, stretched from Schanskop to the opposite side of the Krugersdorp road (Anon, 1955).

Although a number of engagements and skirmishes took place, the actions taking place in the general vicinity of the study area will be discussed.

After driving away a number of Boer positions guarding the bridge and drift, Henry's Mounted Infantry crossed the Six Mile Spruit on 4 June 1900. His force subsequently occupied Zwartkop.

Lord Roberts now ordered the 7<sup>th</sup> and 11<sup>th</sup> Infantry Divisions as well as the 14<sup>th</sup>, 18<sup>th</sup>, 62<sup>nd</sup>, 74<sup>th</sup>, 75<sup>th</sup>, 83<sup>rd</sup> and 84<sup>th</sup> field batteries across the spruit. Although these attacks

were supported by Roberts' Heavy Artillery (who had also positioned themselves on Zwartkop), the attacks came under heavy fire from the artillery of Pretorius and Von Lossberg (Breytenbach, 1983).

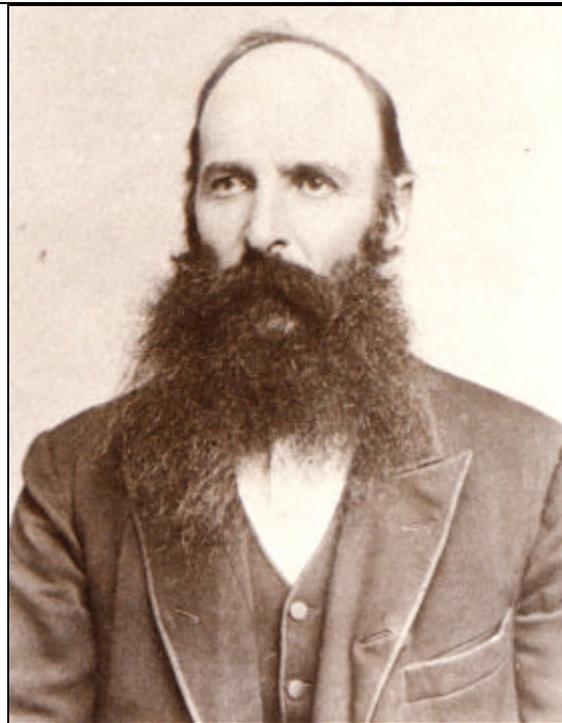
Lord Roberts subsequently also crossed the spruit and by 1 p.m. had positioned himself on Zwartkop.

At 2 p.m. General Ian Hamilton, the commander of the Mounted Infantry Division, crossed the Hennops River at Erasmus Dam. As he was faced with the Boer forces under De La Rey on Quagga poort, he ordered Broadwood with the 2<sup>nd</sup> Cavalry Brigade and De Lisle with the 2<sup>nd</sup> M.I. Corps to move towards the west and attempt to outflank the Boer position. De Lisle's force managed exactly this, and as the Boer positions were now faced by enemy attack from the front and right flank, they retreated back to Pretoria (Amery, 1906).

Later that afternoon the surrender of Pretoria was demanded, and Lord Roberts officially entered the erstwhile capital of the *Zuid-Afrikaansche Republiek* on 5 June 1900.



**Figure 8** General Ian Hamilton



**Figure 9** General J.H. (Koos) de la Rey

## **6.2 The Battle and Vlakplaats**

A single reference which mentions the farm “Vlaakplaats” was found during the present study (Official History, 1908). This reference describes that during the planning of the British attack on Pretoria, the intention was for the main force under Lord Roberts to “...follow the Florida-Pretoria road to Leeuwkop and Vlakplaats, where the north bank of the Six Mile Spruit would be gained.” (Official History, 1908:96).

After Henry’s Mounted Infantry had crossed over the spruit in the vicinity of the Wierda Bridge, two divisions, namely the VIIth and XIth were sent across the river to support his attacks. While the XIth division crossed over the river by way of the bridge, the VIIth had to make use of the “...drifts on the tracks from Florida and Johannesburg” (Official History, 1908:98). No further indication of the locality of these drifts is given.

The next event of note in terms of the study area was the crossing over the Hennops River of General Ian Hamilton. All the available references indicate the locality of this crossing to be three miles west of Zwartkop, which is the spot indicated in **Figure 1**. Of interest for the present study is that the road leading to this drift passes over the southern section of Vlakplaats. Whether the track indicated on the Major Jackson Series map is the tarred road presently forming the southern boundary of the study area, is not known.

In conclusion it is worth stating that the Battle of Six Mile Spruit was not located in a small clearly demarcated area, but entailed the whole portion of land between the spruit and Pretoria. Although some elements of the battle may have taken place in the direct vicinity (and possibly within the study area itself), the more significant aspects of the battle in terms of the area surrounding Vlakplaats are the ridges along the northern edge of the Six Mile Spruit as well as Zwartkop hill.

## **7. VOORTREKKER CAMP SITE**

In a letter dated 20 September 1960, it is indicated by the Chairperson of the “Piet Retief Kampterrein Komitee” that the Piet Retief Voortrekker Kommando was of the

intention of purchasing 5 morgen of the farm Vlakplaats 354-JR for use as a campsite. Of interest is the indication in the letter that the particular Voortrekker commando had used the exact same site as a camp for almost 20 years before the date of the letter (CDB, 3/707, TAD9/18/121).

Official approval for the sub-division of the farm was provided on 15 December 1960.



**Figure 10** Diagram forming part of the subdivision of Vlakplaats. The position of the Voortrekker camp is shown.

## 7. CONCLUSION

The archival and desktop study has revealed some interesting historical facts about Portion 7 of the Farm Vlakplaats 354-JR, all of which can be used to support and facilitate various aspects of the Heritage Impact Assessment process.

## **BIBLIOGRAPHY**

### **Published Documents**

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Breytenbach, J.H. (ed.), *Die Britse Opmars tot in Pretoria*, Geskiedenis van die Tweede Vryheidsoorlog 1899-1902, Die Staatsdrukker, Pretoria.

Engelbrecht, S.P., 1955: *Pretoria (1855-1955)*, The City Council of Pretoria, Pretoria.

Official History, 1908: *History of the War in South Africa 1899-1902*, Compiled by the Direction of His Majesty's Government, Vol III.

### **Archival Documents**

CDB, 3/707, TAD9/18/121

### **Archival Maps**

National Archives, Maps, 2/932

National Archives, Maps, 3/551

**ANNEXURE B**

**Legislation extracts**

[36]36 Burial grounds and graves

(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.

[37]37 Public monuments and memorials

Public monuments and memorials must, without the need to publish a notice to this effect, be protected in the same manner as places which are entered in a heritage register referred to in section 30.

[38]38 Heritage resources management

(1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50m in length;
- (c) any development or other activity which will change the character of a site-
  - (i) exceeding 5 000m<sup>2</sup> in extent; or
  - (ii) involving three or more existing erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

- (d) the re-zoning of a site exceeding 10 000m<sup>2</sup> in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

(2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection (1)-

(a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or

(b) notify the person concerned that this section does not apply.

(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2) (a): Provided that the following must be included:

- (a) The identification and mapping of all heritage resources in the area affected;
- (b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6 (2) or prescribed under section 7;
- (c) an assessment of the impact of the development on such heritage resources;
- (d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;

(e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;

(f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and

(g) plans for mitigation of any adverse effects during and after the completion of the proposed development.

(4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development, decide-

(a) whether or not the development may proceed;

(b) any limitations or conditions to be applied to the development;

(c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;

(d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and

(e) whether the appointment of specialists is required as a condition of approval of the proposal.

(5) A provincial heritage resources authority shall not make any decision under subsection (4) with respect to any development which impacts on a heritage resource protected at national level unless it has consulted SAHRA.

(6) The applicant may appeal against the decision of the provincial heritage resources authority to the MEC, who-

(a) must consider the views of both parties; and

- (b) may at his or her discretion-
  - (i) appoint a committee to undertake an independent review of the impact assessment report and the decision of the responsible heritage authority; and
  - (ii) consult SAHRA; and
- (c) must uphold, amend or overturn such decision.

(7) The provisions of this section do not apply to a development described in subsection (1) affecting any heritage resource formally protected by SAHRA unless the authority concerned decides otherwise.

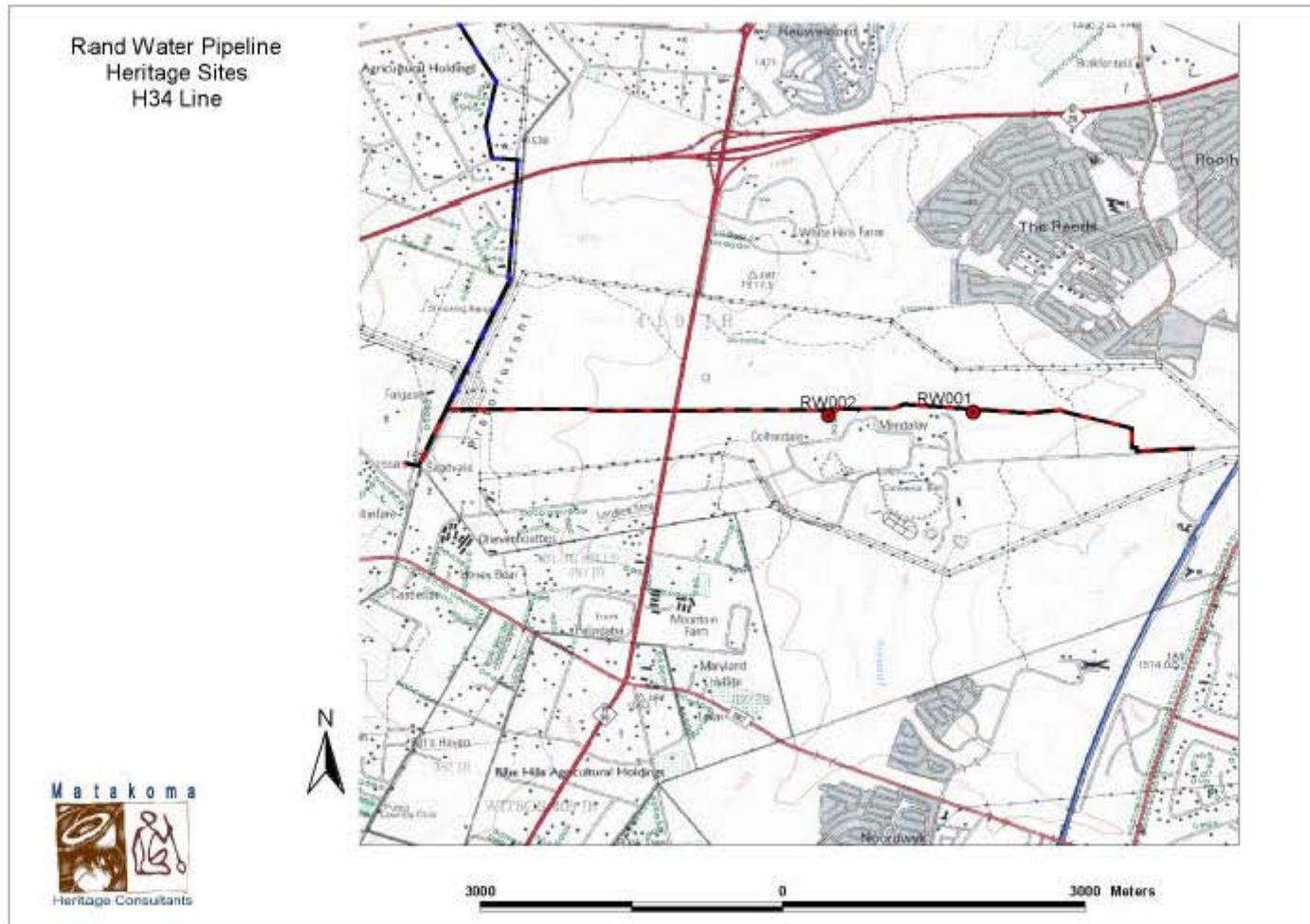
(8) The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and 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.

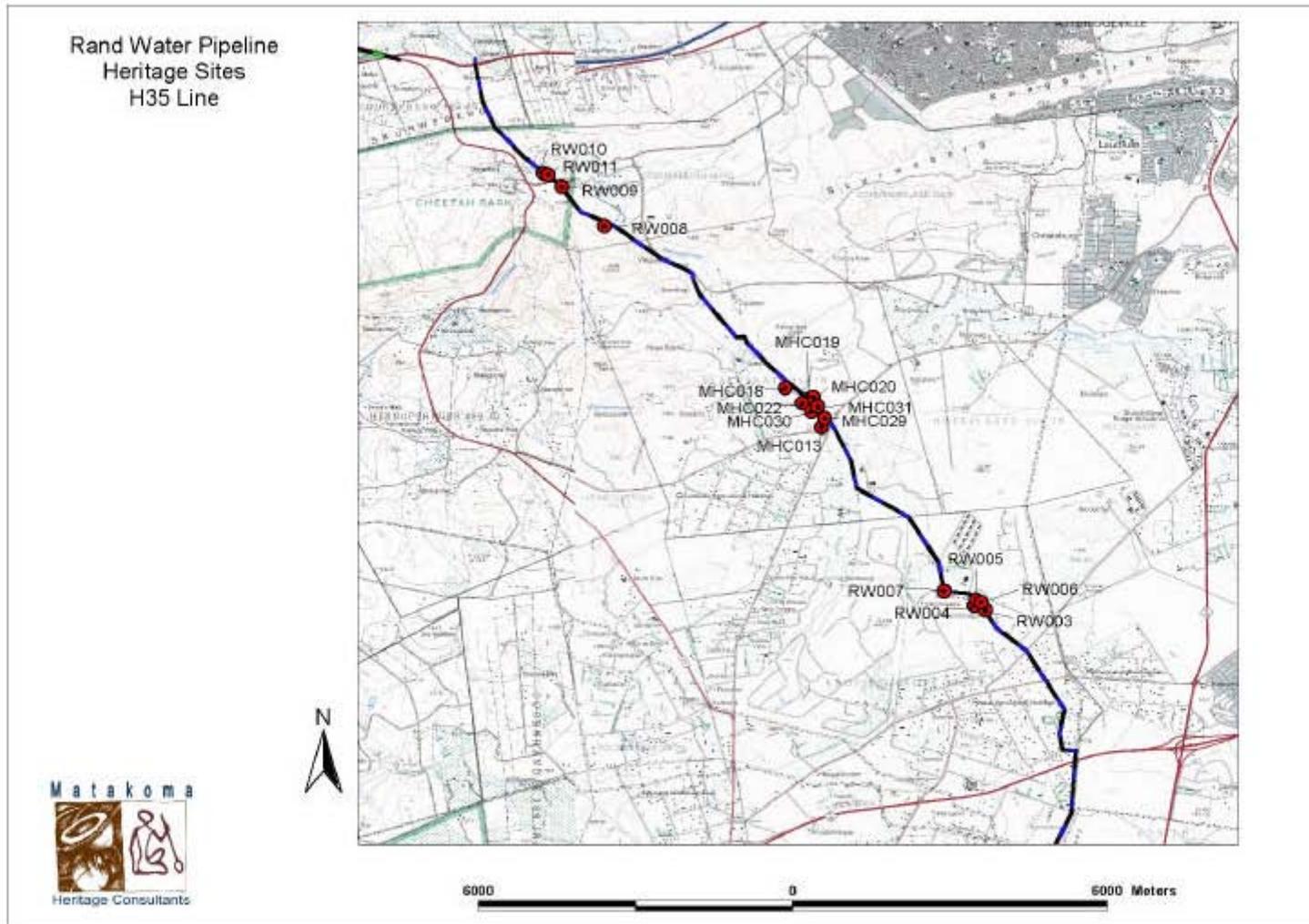
(9) The provincial heritage resources authority, with the approval of the MEC, may, by notice in the Provincial Gazette, exempt from the requirements of this section any place specified in the notice.

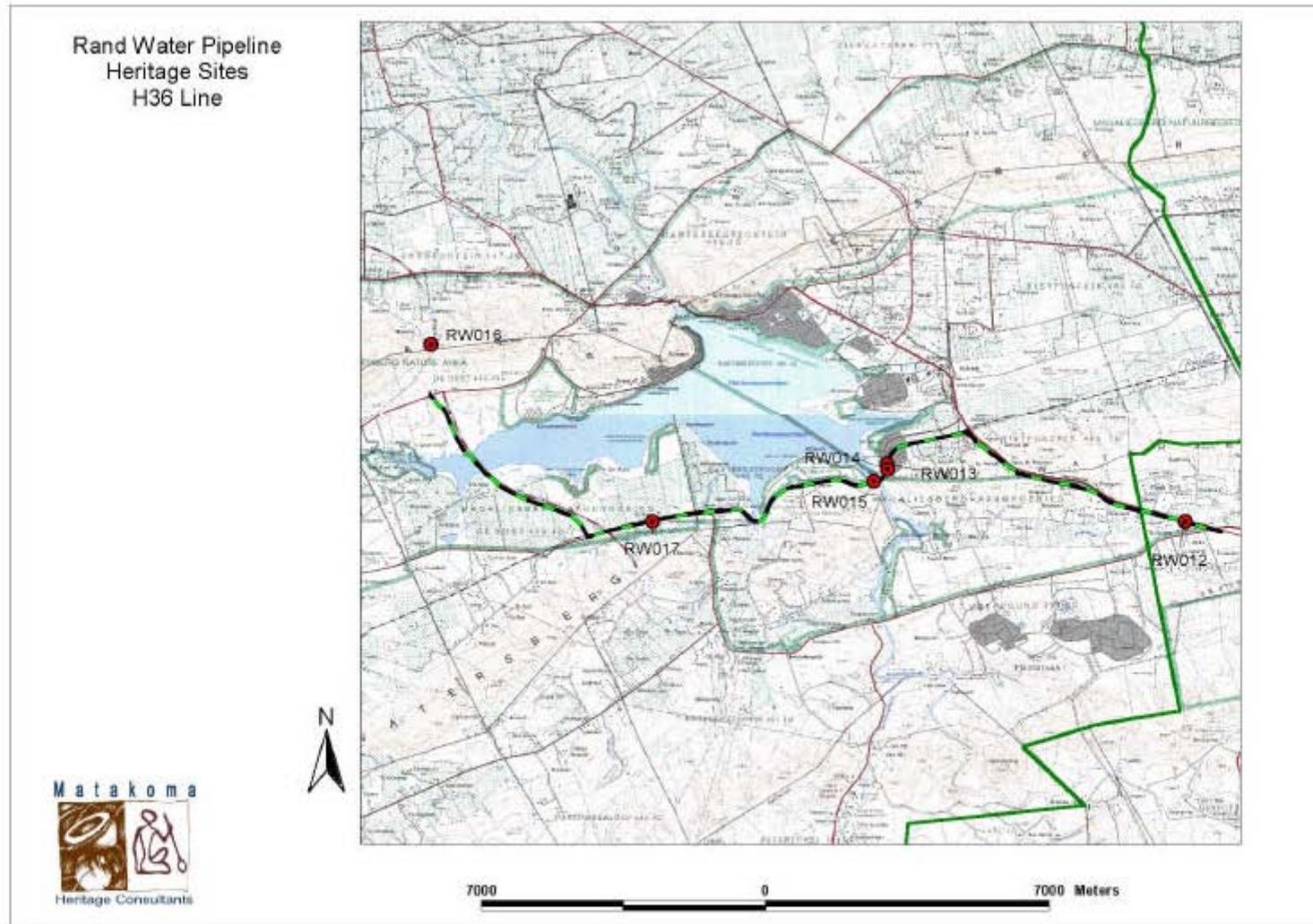
(10) Any person who has complied with the decision of a provincial heritage resources authority in subsection (4) or of the MEC in terms of subsection (6) or other requirements referred to in subsection (8), must be exempted from compliance with all other protections in terms of this Part, but any existing heritage agreements made in terms of section 42 must continue to apply

# ANNEXURE C

## Map of sites







**ANNEXURE D**

**Table with Site Coordinates**

Site No	LAT	LONG
RW001	25.91615251	28.12656188
RW002	25.91646709	28.11363347
RW003	25.87012178	28.07048310
RW004	25.86932668	28.06852894
RW005	25.86839897	28.06889506
RW006	25.86874782	28.06975177
RW007	25.86683968	28.06340282
RW008	25.80472441	28.00508330
RW009	25.79803457	27.99774880
RW010	25.79566869	27.99457407
RW011	25.79598083	27.99538895
RW012	25.77421797	27.96188699
RW013	25.76161637	27.89571723
RW014	25.76272815	27.89589928
RW015	25.76530851	27.89282640
RW016	25.73521161	27.79470088
RW017	25.77417003	27.84382244
MHC013	25.83888486	28.04229341
MHC018	25.83231898	28.03608754
MHC019	25.83411740	28.04028980
MHC020	25.83391590	28.04092071
MHC022	25.83483900	28.03902766
MHC029	25.83745893	28.04286313
MHC030	25.83628287	28.04062324
MHC031	25.83541249	28.04165840

**ANNEXURE E**

**Outline guide for an archaeological watching brief**

## **STANDARD AND GUIDANCE - for an Archaeological Watching Brief**

### **1. DEFINITION OF AN ARCHAEOLOGICAL WATCHING BRIEF**

The definition of an archaeological watching brief is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposit may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

This definition does not cover chance observations, which should lead to an appropriate archaeological project being designed and implemented, nor do they apply to monitoring for preservation of remains in situ.

### **2. PURPOSE OF A WATCHING BRIEF**

The purpose of a watching brief is:

- To allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development or other potentially disruptive works
- To provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.
- A watching brief is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.
- The objective of a watching brief is to establish and make available information about the archaeological resource existing on a site.
- An archaeologist shall only undertake a watching brief, which is governed by a written and agreed specification or project design prepared in advance of work commencing.

- The specification or project design must identify the objectives, scope, geographical area, and means of dissemination of the results of the watching brief, and incorporate a method statement and work programme. The specification or project design should conform to the brief/project outline if one has been set, and must in any case be approved in advance by the planning archaeologist or curator.

The specification or project design should contain, as a minimum, the following elements:

- Non-technical summary
- Site location (including map) and descriptions
- Context of the project
- Geological and topographical background
- Archaeological and historical background
- General and specific aims of fieldwork
- Reference to relevant legislation
- Field methodology
- Collection and disposal strategy for artefacts and ecofacts
- Arrangement for immediate conservation of artefacts
- Post-fieldwork methodology
- Report preparation (method)
- Publication and dissemination proposals
- Copyright
- Archive deposition
- Timetable
- Staffing
- Health & safety considerations
- Monitoring procedures
- Contingency arrangements (if appropriate)

### **3. FIELDWORK**

3.1 All relevant parties must agree to the specification and/or project design before work commences. All work must conform to the agreed specification or project design. All relevant parties must agree to any variations in writing.

3.2 Sufficient and appropriate resources (staff, equipment, accommodation etc) must be used to enable the project to achieve its aims, the desired quality and timetable, and comply with all statutory requirements. Any contingency elements must be clearly identified and justified. It is the role of the archaeologist undertaking the work to define appropriate staff levels.

3.3 All techniques used must comply with relevant legislation and be demonstrably fit for the defined purpose(s).

3.4 All staff, including subcontractors, must be suitably qualified and experienced for their project roles, and employed in line with relevant legislation and IFA by-laws (see Appendix 6). The site director and/or manager should preferably be a Principal Inspector with the Cultural Resources Management Section of the South African Association of Archaeologists (CRM Section of SA3).

3.5 All staff, including subcontractors, must be fully briefed and aware of the work required under the specification, and must understand the aims and methodologies of the project. All equipment must be suitable for the purpose and in sound condition and comply with Health and Safety regulations and recommendations.

3.6 Sufficient and appropriate resources (staff, equipment, accommodation etc) must be used to enable the project to achieve its aims, the desired quality and timetable, and to comply with all statutory requirements. Any contingency elements must be clearly identified and justified. It is the role of the archaeologist undertaking the work to define appropriate staff levels.

3.7 Full and proper records (written, graphic, electronic and photographic as appropriate) should be made for all work, using pro forma record forms and sheets as applicable. Digital records created, as part of the project should comply with specified data standards. An archaeologist must ensure that digital information, paper and photographic records should be stored in a secure and appropriate environment, and be regularly copied or backed up, and copies stored in a separate location.

3.8 Artefact and environmental data collection and discard policies, strategies and techniques must be fit for the defined purpose, and understood by all staff and subcontractors

3.9 Health and Safety regulations and requirements cannot be ignored no matter how imperative the need to record archaeological information; hence Health and Safety will take priority over archaeological matters. All archaeologists undertaking fieldwork must do so under a defined Health and Safety Policy.

3.10 Archaeologists undertaking fieldwork must observe safe working practices; the Health and Safety arrangements must be agreed and understood by all relevant parties before work commences

3.11 Archaeologists must liaise closely with the principal contractor and comply with specified site rules. Archaeologists are advised to note the onerous responsibilities of the role of planning supervisor.

3.12 The archaeologist undertaking a watching brief must ensure that he or she has adequate insurance policies, public and employer's liability and some relevant form of civil liability indemnity or professional indemnity.

3.13 On arrival on site, the archaeologist should report to the site manager or other identified representative of the principal contractors or developers, and conform to their arrangements for notification of entering and leaving site.

3.14 Where the archaeologist has by instruction or agreement the power to suspend development work, he or she shall, in exercising such power, follow procedures previously agreed with the other contractors on the site. Within the constraints of the nature of the archaeological resource, the archaeologist shall not cause unreasonable disruption to the maintenance of the work schedules of other contractors.

3.15 An archaeologist should keep a record of the date, time and duration of all visits, the number of staff concerned and any actions taken.

#### **4. POST-FIELDWORK ANALYSES AND REPORTS**

4.1 Suitably qualified and experienced staff, who must be apprised of the project design before commencing work, and who should understand the work required of them, must carry out all assessment and analytical work.

4.2 The level of recording and analysis of artefacts and ecofacts should be appropriate to the aims and purpose of the project.

4.3 All data generated as a result of assessment and/or analysis should be included in the project archive.

4.4 All reports must address the aims and purposes of the project design and/or specification.

4.5 All reports should be written in a clear, concise and logical style; technical terms should be explained if the report is for a non-archaeological audience. Consideration should be given during the preparation of the report to the requirements of public inquiries and courts of law if appropriate.

4.6 Subject to any contractual requirements on confidentiality, copies of the report must be submitted to the appropriate Provincial Heritage Resources Agency (PHRA) within six months of completion of report.

4.7 As a minimum, a site summary or data structure report should be submitted to the appropriate PHRA.

## **5. MONITORING**

5.1 All work must be monitored by the archaeological contractor undertaking the project, and if appropriate by the PHRA, the Cultural Resources Management Section of the South African Association of Archaeologists (CRM Section of SA3), or their nominated representatives. The guidance below is directed in general at monitors from outside the organisation undertaking the work, but many of the points apply equally to internal monitors or managers.

5.2 A monitor should be suitably experienced and qualified, or have access to appropriate specialist advice.

5.3 Monitoring must be undertaken against the written specification and/or project design.

5.4 Monitors, where not representing the commissioning body, should bear in mind the need for flexibility, within the stated parameters, in contractual matters such as staff numbers, budgets or timetable.

5.5 All monitoring visits must be documented, and agreed by each party.

5.6 Non-compliance with the agreed specification or project design must be pointed out by the monitor to the archaeologist undertaking the work, and their client if appropriate, at the earliest opportunity.

5.7 Monitors should be aware of their professional and moral duties regarding Health and Safety, in particular reporting and advising against bad and unsafe practice.

5.8 All monitoring arrangements must be agreed at the outset of the project; the archaeologist undertaking fieldwork must inform the planning archaeologist or other monitor of the commencement of work with reasonable notice.

5.9 Although monitors may choose to visit at any time, they should normally inform the archaeologist undertaking the work of any intended visits in advance. Monitors must respect reasonable requests from the client commissioning the work to attend only at prearranged times and, if necessary, in the company of the client's representative.

5.10 Any costs for monitoring to be charged by the planning archaeologist or other monitor must be agreed in writing at the outset of the project.

## **6. REPORT CONTENTS**

The specific requirements of any report will necessarily vary according to the scope of works, the nature of the results or other factors. However, the following sections will occur in most

### **Non-technical summary**

This should outline in plain, non-technical language the principal reason for the work, its objectives and main results. It should include reference to authorship and commissioning body.

### **Introductory statements**

These could include acknowledgements, circumstances of the project such as planning background, the archaeological background, an outline nature of work, the site description (including size, geology and topography, location), when the project was undertaken and by whom.

### **Aims and objectives**

These should reflect or reiterate the aims set out in the project design or specification.

### **Methodology**

The methods used, including the detail of any variation to the agreed project design or specification should be set out carefully, and explained as appropriate. These should be set out as a series of summary statements, organised clearly in relation to the methods used, and describing structural data, associated finds and/or environmental data recovered. Descriptive material should be clearly separated from interpretative statements. Technical terminology (including dating or period references) should be explained where necessary if the report is aimed at a largely non-archaeological audience. The results should be amplified where necessary by the use of drawings and photographs; and by supporting data contained in appendices (below).

### **Conclusions**

It is appropriate to include a section, which sums up and interprets the results and puts them into context (local, national or otherwise). Other elements should include a confidence rating on techniques used, or on limitations imposed by particular factors (eg weather or problems of access).

**Archive location**

The final destination of the archive (records and finds) should be noted in the report.

**Appendices**

These should contain essential technical and supporting detail, including for example lists of artefacts and contexts or details of measurements, gazetteers etc. It may also be appropriate to include the project design or specification for ease of reference.

**Illustrations**

Most reports will need the inclusion of one or more illustrations for clarity; as a minimum a location plan should be included. Any plans or sections should be clearly numbered and easily referenced to the National Grid and related to the specified area.

**References and bibliography**

A list of all sources used should be appended to the report.

**Other**

Contents list, disclaimers.

**7. REFERENCES**

The Institute of Field Archaeologists, 2001. STANDARD AND GUIDANCE - for an archaeological watching brief. United Kingdom