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**Digby Wells &  
Associates**

**Archaeological  
Impact Assessment**

**Proposed mining  
development for  
Xstrata Group -  
Spitzkop Mine,  
Breyten - Ermelo  
Region, Mpumalanga  
Province**

**Version 2.0**

**23 May 2008**

**Service provider**



**MATAKOMA - ARM**  
HERITAGE CONTRACTS UNIT

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- The results of the project;
- The technology described in any report
- Recommendations delivered to the Client.

## **EXECUTIVE SUMMARY**

As we know from legislation 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. With the proclamation of the National Heritage Resources Act 1999 (Act 25 of 1999) (NHRA), this process has been laid down clearly. 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.

The importance of working with and following the guidelines laid down by the South African Heritage Resources Agency (SAHRA) cannot be overemphasised. This document forms part of the Environmental Impact Assessment (EIA) for the proposed the Spitzkop division of Xstrata, Breyten - Ermelo Region, Mpumalanga Province.

The following outline the findings of the report:

### ***Mooifontein Section***

During the survey, three cemeteries consisting of approximately 77 graves were identified. The cemeteries were located in the north western and south western portions of the farm Mooifontein 109 IT. None of the cemeteries are located inside the proposed opencast areas, but are in close vicinity to the proposed boundaries of the pits.

It is recommended that the cemeteries be fenced and monitored on a monthly basis to identify any impacts by mining activities close by.

If it is found that the preservation of the cemeteries is impossible, the relocation of the graves must adhere to the guidelines provided by the South African Heritage Resources Agency. These include comprehensive social consultation, permit applications and detailed excavations.

If these recommendations are adhered to, there is from an archaeological point of view no reason why the development can not commence.

***Sara Buffels, Sterkfontein and Bloemfontein Sections***

During the survey, one cemetery consisting of 16 graves was identified.

It is recommended that the cemetery be fenced and monitored on a monthly basis to identify any impacts by mining activities close by.

If it is found that the preservation of the cemetery is impossible, the relocation of the graves must adhere to the guidelines provided by the South African Heritage Resources Agency. These include comprehensive social consultation, permit applications and detailed excavations.

There is from an archaeological point of view no reason why the development can not commence on these Sections.

**General**

If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

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## LIST OF ACRONYMS

SAHRA - South African Heritage Resources Agency  
 NHRA - National Heritage Resources Act (Act 25 of 1999)  
 EIA - Environmental Impact Assessment  
 AIA- Archaeological Impact Assessment  
 DWA - Digby Wells and Associates  
 MPRDA - Minerals and Petroleum Resources Development Act

# 1. INTRODUCTION

Matakoma Heritage Consultants (Pty) Ltd was contracted by Digby Wells & Associates (DWA) to conduct an Archaeological Impact Assessment (AIA) for the proposed new extensions for the Spitzkop division of Xstrata, Breyten - Ermelo Region, Mpumalanga 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 resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999) (NHRA).

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

During the survey, four cultural heritage site of significance was identified. General site conditions and features on site 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 provincial office for scrutiny.

## 1.1 PROJECT DESCRIPTION

The proposed project area is located in the regional proximity of Ermelo, Hendrina, Carolina, Breyten and Chrissiesmeer (Lake Chrissie) in the Mpumalanga Highveld of South Africa and is situated approximately 250 km from Gauteng on the N11 highway.

The project entails the development of five separate mining areas:

1. Sara Buffels A
2. Sara Buffels B
3. Sterkfontein
4. Mooifontein
5. Bloemfontein

Refer to Figure 1 for a regional setting of the study areas.

The different mining sections will comprise of underground as well as opens cast mining activities. **The areas studied for the AIA was focused on the opencast and associated infrastructure.** This makes up a total of 170 hectares of a total mining application area of 3200 hectares.



# SPITZKOP MINE - AIA

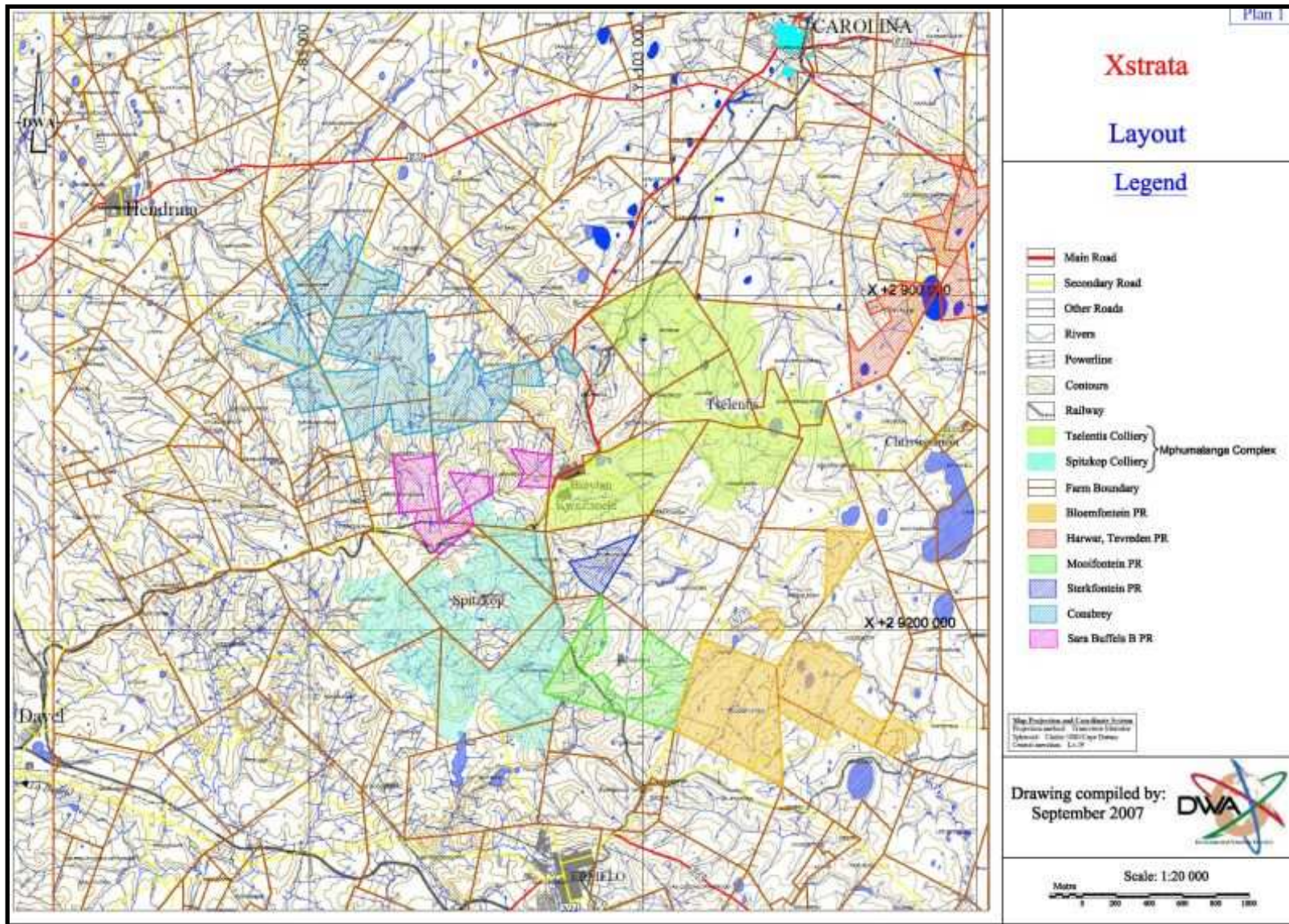


Figure 1: Regional Setting

## **2. APPROACH AND METHODOLOGY**

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

### **2.1 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. MATAKOMA-ARM was appointed to conduct a survey of the proposed development area together with access routes and entrances to the proposed residential development. The total area of impact comprised an area of approximately 700ha in total of which 160 hectares are to be directly impacted on. The study areas were surveyed over four day, by means of vehicle and extensive surveys on foot by MATAKOMA-ARM.

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. All sites discovered both inside and bordering the proposed development area was plotted on 1:50 000 maps and their GPS co-ordinates noted. 35mm photographs on digital film were taken at all the sites.

## **3. WORKING WITH LEGISLATION**

It is very important that cultural resources be evaluated according to the NHRA. 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-*

*(a) its importance in the community, or pattern of South Africa's history;*

- (b) *its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;*
- (c) *its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;*
- (d) *its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;*
- (e) *its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;*
- (f) *its importance in demonstrating a high degree of creative or technical achievement at a particular period;*
- (g) *its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;*
- (h) *its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and*
- (i) *sites of significance relating to the history of slavery in South Africa.*

(Refer to Section 9 of this document for assessment)

These sites should be managed through using the NHRA sections 4, 5 and 6 and sections 39-47.

This document forms part of the EIA conducted as part of the Mining Authorisation application under the Minerals and Petroleum Resources Development Act (MPRDA).

## 4. 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.

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

### 4.1 IMPACT

The potential environmental impacts that may result from the proposed development activities

#### 4.1.1 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 impacts.

## 4.2 EVALUATION

### 4.2.1 Site Significance

The 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.

### 4.2.2 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.

### 4.2.3 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

*Evaluation*

IMPACT	SIGNIFICANCE	CERTAINTY	DURATION	MITIGATION
Negative	high negative	definite	long	C

## 5. HISTORICAL BACKGROUND OF AREA

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

Geologically, Mpumalanga encompasses some of the richest heritage in the world and is considered the ultimate destination for scientists interested in the ancient operations and activities of a youthful Earth during the millennia 3 500 000 BC. South Africa's oldest known rocks are exposed in the Barberton mountain chains that run from Elukwatini and Tjakastad to Komatipoort along the Swaziland border (De Wit, 2008: 1).

Mpumalanga coals formed in vast swamps from decomposing forests during a 100 million year period between 200 and 300 million years ago. During this era, Africa was still attached to South America, India and Antarctica as part of the super-continent, Gondwana. Primitive plants, such as the famous *Glossopteris* flora, had colonised the entire southern hemisphere, and mammal-like reptiles and later dinosaurs roamed across the landscape of Mpumalanga. Fossils of these animals are found in abundance and are commonly displayed in local and national museums. Approximately 250 million years ago, global mass extinction struck the planet and more than 90 per cent of biodiversity across the world was destroyed at species level within less than 70 000 years. Scientists studying this catastrophic event recorded in the Karoo rocks of Mpumalanga and beyond, have shown that it was related to extreme changes in climate.

The environment is continually being influenced by natural changes and various anthropic developments such as established farms, towns and cities in regional surroundings. The closest town to the proposed mining area is Breyten, a small town surrounded by maize, sheep and cattle farming communities, which is also becoming renowned for its

apple farming. The town is situated at the foot of Klipstapel, the highest point on the watershed between the westward flowing Vaal River system and the eastward flowing Olifants and Komati River systems. Bothasrus, the original farm on which the town is built, was given to Lukas Potgieter as compensation for losing a leg during the first Boer War. He later sold the farm to field-cornet Nicolaas Breytenbach, who formed the village in his own name. The Chrissiesmeer area is located towards the east of the proposed project area, which is also known as a place of lakes and legends. It is reported that ancient San communities were the first inhabitants of the region, including the Tlou-tle, who adapted to conditions by living on rafts in the larger lakes. During the 1860s, European settlers founded a town here and named it after President Andries Pretorius's daughter Christina, a friend of an early pioneer family.

In the 1880s, the town became an important stopover to and from Barberton; however, other towns surpassed Chrissiesmeer in economic development. Subsequently, the town retained its pristine appeal, and is now one of the most significant eco-tourist destinations in the country.

Due to its rich geological resources, historical value, continuous agricultural practices and sources of water in the regional proximity of the project area, there is a medium-high probability that remnants of significant faunal, floral and human resources may be present in the proposed project area (e.g. graves, burial sites, fossils, palaeontological phenomena and/or archaeological artefacts). Previous studies indicated that significant sites have been found in the Carolina district of Mpumalanga (Fourie & Van der Walt, 2005), which is in regional proximity to the proposed project site. Although surface disturbed by farming activities and mining operations already exists, the possibility of discovering significant archaeological and heritage resources remains.

The historical background and timeframe can be divided into the Stone Age, Iron Age and Historical timeframe. These can be divided as follows:

### **Stone Age**

The Stone Age is divided in Early; Middle and Late Stone Age and refers to the earliest people of South Africa who mainly relied on stone for their tools.

*Earlier Stone Age:* The period from  $\pm$  2.5 million yrs -  $\pm$  250 000 yrs ago. Acheulean stone tools are dominant.

*Middle Stone Age:* Various lithic industries in SA dating from  $\pm$  250 000 yrs – 22 000 yrs before present.

*Later Stone Age:* The period from  $\pm$  22 000-yrs before present to the period of contact with either Iron Age farmers or European colonists.

### **Iron Age**

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the Pre-Historic and Historic periods. Similar to the Stone Age, it can be divided into three periods:

*The Early Iron Age:* Most of the first millennium AD.

*The Middle Iron Age:* 10th to 13th centuries AD

*The Late Iron Age:* 14th century to colonial period.

### **Historic Timeframe**

The historic timeframe intermingles with the later parts of the Stone and Iron Age, and can loosely be regarded as times when written and oral recounts of incidents became available.




## 6. SITES OF SIGNIFICANCE – MOOIFONTEIN SECTION

During the survey, three cemeteries consisting of approximately 77 graves were identified. The cemeteries were located in the north western and south western portions of the farm Mooifontein 109 IT. None of the cemeteries are located inside the proposed opencast areas, but are in close vicinity to the proposed boundaries of the pits.

### 6.1 2629BD-MHC001


<b>Description of Site:</b>			
<b>Site Number</b>	MHC001		
<b>Map reference</b>	<b>Topo-sheet number</b>	<b>Number of Map in report</b>	
	<b>2629BD</b>	<b>Annexure A</b>	
<b>GPS coordinates:</b> Indicate Model and datum - WGS 84	X	Y	
Garmin 38, WGS 84	-26.3908286	+29.9959427	
<b>Site Data</b>	<b>Description</b>		
<b>Type of site</b> (e.g. open scatter; shell midden, cave /shelter);	Cemetery, consisting of approximately 12 graves		
<b>Site categories</b> (e.g. Earlier Stone Age, Late Iron Age);	Historic		
<b>Context</b> (i.e. primary or secondary);	Primary		
<b>Cultural affinities, approximate age and significant features of the site;</b>	None		
<b>Estimation or measurement of the extent</b> (maximum dimensions) and orientation of the site(s);	20X20m		

<p><b>Depth and stratification of the site</b> (where shovel test permits have been given), both in the text and through photographs of the sections;</p>	<p>None visible</p>
<p>Possible sources of information about past environments, such as stalactites/ stalagmites, flowstone, dassie middens, peat or organic rich deposits.</p>	<p>None</p>
<p><b>Photographs and diagrams</b> (Figure numbers)</p>	 <p style="text-align: center;"><i>Figure 2: Photo of cemetery2629BD-MHC001</i></p>
<p><b>Statement of Significance</b> (Heritage Value)</p>	<p>The site is of high significance.</p>
<p><b>Field Rating</b> (Recommended grading or field significance) of the site:</p>	<p>Generally protected (GP.A)</p>
<p><b>Impact Evaluation</b> of development on site</p>	<p>Impact on site is seen as medium negative, through possible destruction of site</p>
<p><b>Recommendations</b> including:</p>	<p>If required, the graves must be relocated through appropriate relocation process.</p>

<b>Summary</b>					
<b>Field Rating</b>	<b>Impact</b>	<b>Impact Significance</b>	<b>Certainty</b>	<b>Duration</b>	<b>Mitigation</b>
Grade GP.A	Negative	Medium	Possible	Long term	B


## 6.2 2630AC-MHC001

<b>Description of Site:</b>			
<b>Site Number</b>	MHC001		
<b>Map reference</b>	<b>Topo-sheet number</b>	<b>Number of Map in report</b>	
	<b>2630AC</b>	<b>Annexure A</b>	
<b>GPS coordinates:</b> Indicate Model and datum - WGS 84	X	Y	
Garmin 38, WGS 84	-26.3907696	+30.0061726	
<b>Site Data</b>	<b>Description</b>		
<b>Type of site</b> (e.g. open scatter; shell midden, cave /shelter);	Cemetery, consisting of approximately 20 graves		
<b>Site categories</b> (e.g. Earlier Stone Age, Late Iron Age);	Historic		
<b>Context</b> (i.e. primary or secondary);	Primary		
Cultural affinities, approximate age and significant features of the site;	None		
<b>Estimation or measurement of the extent</b> (maximum dimensions) and orientation of the site(s);	20X20m		
<b>Depth and stratification of the site</b> (where shovel test permits have been given), both in the text and through photographs of the sections;	None visible		

<p><i>Possible sources of information about past environments, such as stalactites/ stalagmites, flowstone, dassie middens, peat or organic rich deposits.</i></p>	<p>None</p>				
<p><b>Photographs and diagrams</b> (Figure numbers)</p>	 <p style="text-align: center;"><i>Figure 3: Photo of cemetery2630AC-MHC001</i></p>				
<p><b>Statement of Significance</b> (Heritage Value)</p>	<p>The site is of high significance.</p>				
<p><b>Field Rating</b> (Recommended grading or field significance) of the site:</p>	<p>Generally protected (GP.A)</p>				
<p><b>Impact Evaluation</b> of development on site</p>	<p>Impact on site is seen as medium negative, through possible destruction of site</p>				
<p><b>Recommendations</b> including:</p>	<p>If required, the graves must be relocated through appropriate relocation process.</p>				
<p><b>Summary</b></p>					
<p><b>Field Rating</b></p>	<p><b>Impact</b></p>	<p><b>Impact Significance</b></p>	<p><b>Certainty</b></p>	<p><b>Duration</b></p>	<p><b>Mitigation</b></p>
<p>Grade GP.A</p>	<p>Negative</p>	<p>Medium</p>	<p>Possible</p>	<p>Long term</p>	<p>B</p>

## 6.3 2630AC-MHC002

<b>Description of Site:</b>			
<b>Site Number</b>	MHC002		
<b>Map reference</b>	<b>Topo-sheet number</b>	<b>Number of Map in report</b>	
	<b>2630AC</b>	<b>Annexure A</b>	
<b>GPS coordinates:</b> <i>Indicate Model and datum - WGS 84</i>	X	Y	
Garmin 38, WGS 84	-26.4248873	+30.0020420	
<b>Site Data</b>	<b>Description</b>		
<b>Type of site</b> (e.g. open scatter; shell midden, cave /shelter);	Cemetery, consisting of approximately 35 graves		
<b>Site categories</b> (e.g. Earlier Stone Age, Late Iron Age);	Historic		
<b>Context</b> (i.e. primary or secondary);	Primary		
<i>Cultural affinities, approximate age and significant features of the site;</i>	None		
<b>Estimation or measurement of the extent</b> (maximum dimensions) and orientation of the site(s);	20X20m		
<b>Depth and stratification of the site</b> (where shovel test permits have been given), both in the text and through photographs of the sections;	None visible		
<i>Possible sources of information about past environments, such as stalactites/ stalagmites, flowstone, dassie middens, peat or organic rich deposits.</i>	None		

<p><b>Photographs and diagrams</b> (Figure numbers)</p>	 <p style="text-align: center;"><i>Figure 4: Photo of cemetery2630AC-MHC002</i></p>				
<p><b>Statement of Significance</b> (Heritage Value)</p>	<p>The site is of high significance.</p>				
<p><b>Field Rating</b> (Recommended grading or field significance) of the site:</p>	<p>Generally protected (GP.A)</p>				
<p><b>Impact Evaluation</b> of development on site</p>	<p>Impact on site is seen as medium negative, through possible destruction of site</p>				
<p><b>Recommendations</b> including:</p>	<p>If required, the graves must be relocated through appropriate relocation process.</p>				
<p><b>Summary</b></p>					
<p><b>Field Rating</b></p>	<p><b>Impact</b></p>	<p><b>Impact Significance</b></p>	<p><b>Certainty</b></p>	<p><b>Duration</b></p>	<p><b>Mitigation</b></p>
<p>Grade GP.A</p>	<p>Negative</p>	<p>Medium</p>	<p>Possible</p>	<p>Long term</p>	<p>B</p>

(Refer to **Figure 1** for layout of the property.)

No other sites of cultural heritage significance were found during the survey.

## 6.4 ASSESSMENT AND RECOMMENDATIONS

*A locality map is provided in **Section 6.5***

It is recommended that the cemeteries be fenced and monitored on a monthly basis to identify any impacts by mining activities close by.

If it is found that the preservation of the cemeteries is impossible, the relocation of the graves must adhere to the guidelines provided by the South African Heritage Resources Agency. These include comprehensive social consultation, permit applications and detailed excavations.

MATAKOMA-ARM can be contacted for further work on this process.

There is from an archaeological point of view no reason why the development can not commence.

### **General**

If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

## 6.5 LOCALITY MAP

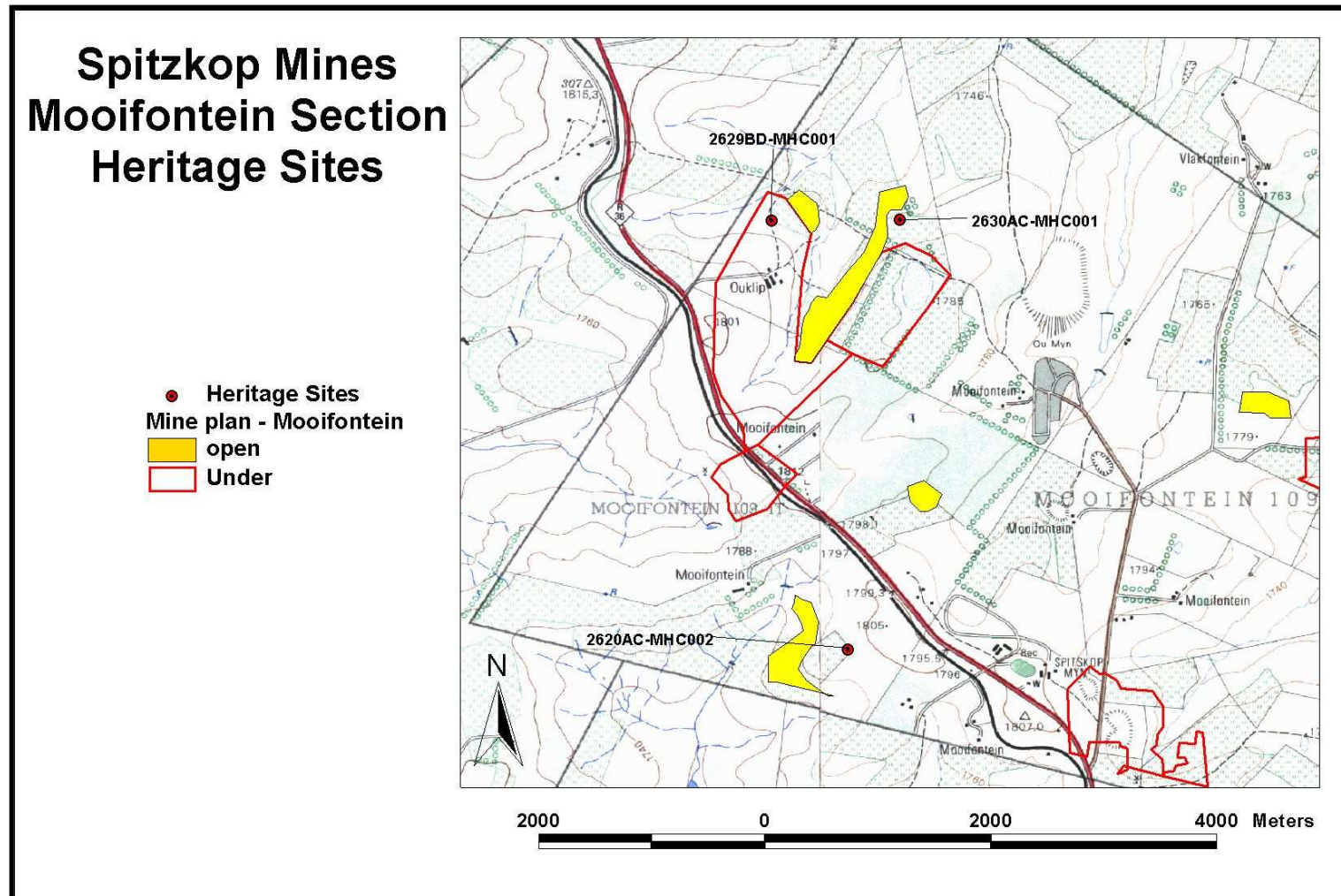


Figure 5: Mooifontein Section with Heritage Sites




## 7. SITES OF SIGNIFICANCE – SARA BUFFELS SECTION

During the field survey two sites of heritage significance were found in the areas selected for opencast mining.

### 7.1 2629BC-MHC001


<b>Description of Site:</b>			
<b>Site Number</b>	MHC001		
<b>Map reference</b>	<b>Topo-sheet number</b>	<b>Number of Map in report</b>	
	<b>2629BC</b>	<b>Annexure A</b>	
<b>GPS coordinates:</b> Indicate Model and datum - WGS 84	X	Y	
Garmin 38, WGS 84	-26.31779	+29.93068	
<b>Site Data</b>	<b>Description</b>		
<b>Type of site</b> (e.g. open scatter; shell midden, cave /shelter);	The site is that of an historic abandoned farmstead with main house and out buildings.		
<b>Site categories</b> (e.g. Earlier Stone Age, Late Iron Age);	Historic		
<b>Context</b> (i.e. primary or secondary);	Primary		
<b>Cultural affinities, approximate age and significant features of the site;</b>	None		
<b>Estimation or measurement of the extent</b> (maximum dimensions) and orientation of the site(s);	50x50m		

<p><b>Depth and stratification of the site</b> (where shovel test permits have been given), both in the text and through photographs of the sections;</p>	None visible				
<p>Possible sources of information about past environments, such as stalactites/ stalagmites, flowstone, dassie middens, peat or organic rich deposits.</p>	None				
<p><b>Photographs and diagrams</b> (Figure numbers)</p>	 <p style="text-align: center;"><i>Figure 6: Photo of cemetery2629BC-MHC001</i></p>				
<p><b>Statement of Significance</b> (Heritage Value)</p>	The site is of low significance.				
<p><b>Field Rating</b> (Recommended grading or field significance) of the site:</p>	Generally protected (GP.C)				
<p><b>Impact Evaluation</b> of development on site</p>	Impact on site is seen as low negative, through possible destruction of site				
<p><b>Recommendations</b> including:</p>	No further actions required				
<p><b>Summary</b></p>					

Field Rating	Impact	Impact Significance	Certainty	Duration	Mitigation
Grade GP.C	Negative	Low	Possible	Long term	A

## 7.2 2629BC-MHC002

<b>Description of Site:</b>			
<b>Site Number</b>	MHC002		
<b>Map reference</b>	<b>Topo-sheet number</b>	<b>Number of Map in report</b>	
	<b>2629BC</b>	<b>Annexure A</b>	
<b>GPS coordinates:</b> <i>Indicate Model and datum - WGS 84</i>	X	Y	
Garmin 38, WGS 84	-26.31886	+29.93197	
<b>Site Data</b>	<b>Description</b>		
<b>Type of site</b> (e.g. open scatter; shell midden, cave /shelter);	The site consist of 16 graves located in a single farm cemetery		
<b>Site categories</b> (e.g. Earlier Stone Age, Late Iron Age);	Historic		
<b>Context</b> (i.e. primary or secondary);	Primary		
<i>Cultural affinities, approximate age and significant features of the site;</i>	None		
<b>Estimation or measurement of the extent</b> (maximum dimensions) and orientation of the site(s);	20x20m		
<b>Depth and stratification of the site</b> (where shovel test permits have been given), both in the text and through photographs of the sections;	None visible		

<p>Possible sources of information about past environments, such as stalactites/ stalagmites, flowstone, dassie middens, peat or organic rich deposits.</p>	<p>None</p>				
<p><b>Photographs and diagrams</b> (Figure numbers)</p>	 <p style="text-align: center;"><i>Figure 7: Photo of cemetery2629BC-MHC002</i></p>				
<p><b>Statement of Significance</b> (Heritage Value)</p>	<p>The site is of high significance.</p>				
<p><b>Field Rating</b> (Recommended grading or field significance) of the site:</p>	<p>Generally protected (GP.A)</p>				
<p><b>Impact Evaluation</b> of development on site</p>	<p>Impact on site is seen as high negative, through possible destruction of site</p>				
<p><b>Recommendations</b> including:</p>	<p>If the graves are to be impacted by mining they should be relocated by following the correct relocation process that includes an extensive social consultation process.</p>				
<p><b>Summary</b></p>					
<p><b>Field Rating</b></p>	<p><b>Impact</b></p>	<p><b>Impact Significance</b></p>	<p><b>Certainty</b></p>	<p><b>Duration</b></p>	<p><b>Mitigation</b></p>
<p>Grade GP.A</p>	<p>Negative</p>	<p>High</p>	<p>Possible</p>	<p>Long term</p>	<p>B</p>

## 7.3 ASSESSMENT AND RECOMMENDATIONS

*A locality map is provided in **Section 7.4***

It is recommended that the cemetery be fenced and monitored on a monthly basis to identify any impacts by mining activities close by.

If it is found that the preservation of the cemetery is impossible, the relocation of the graves must adhere to the guidelines provided by the South African Heritage Resources Agency. These include comprehensive social consultation, permit applications and detailed excavations.

MATAKOMA-ARM can be contacted for further work on this process.

### **General**

If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

## 7.4 LOCALITY MAP

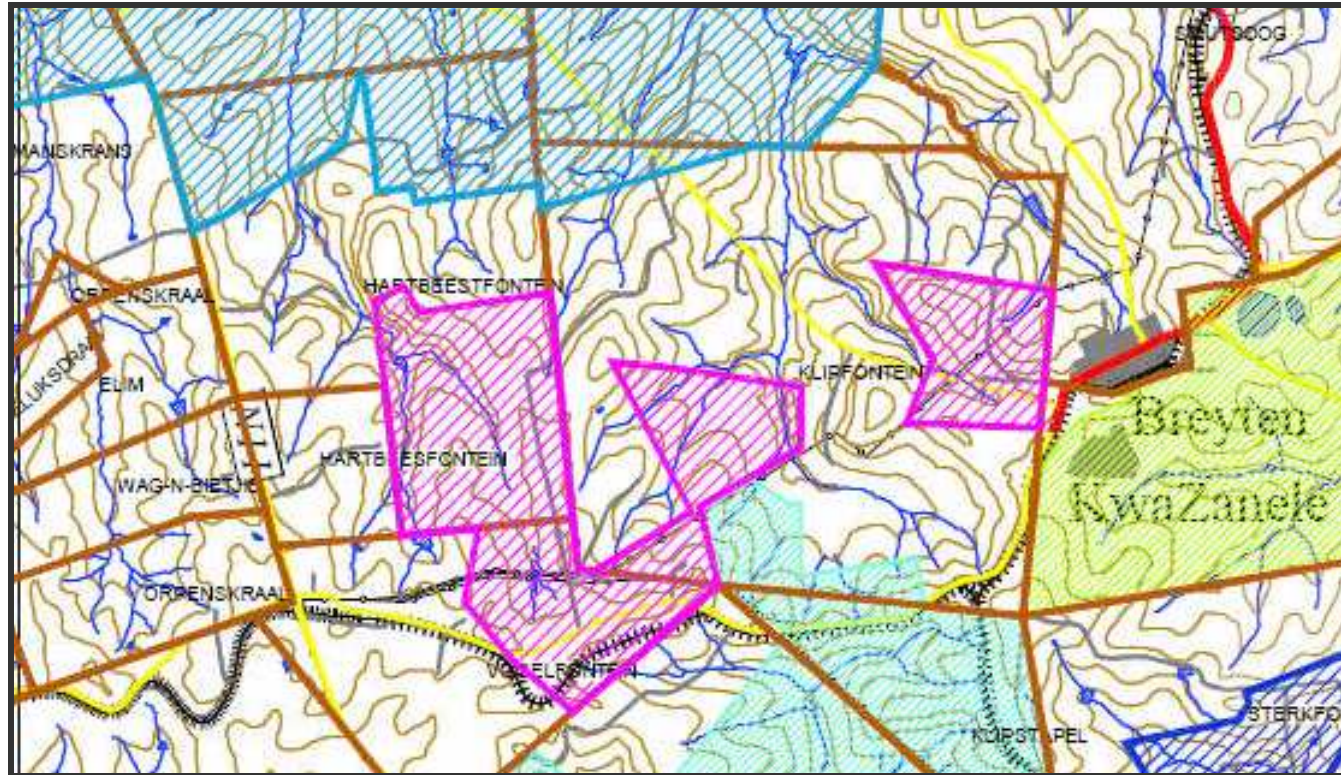


Figure 8: Sara Buffels Section – Locality Map (In pink)

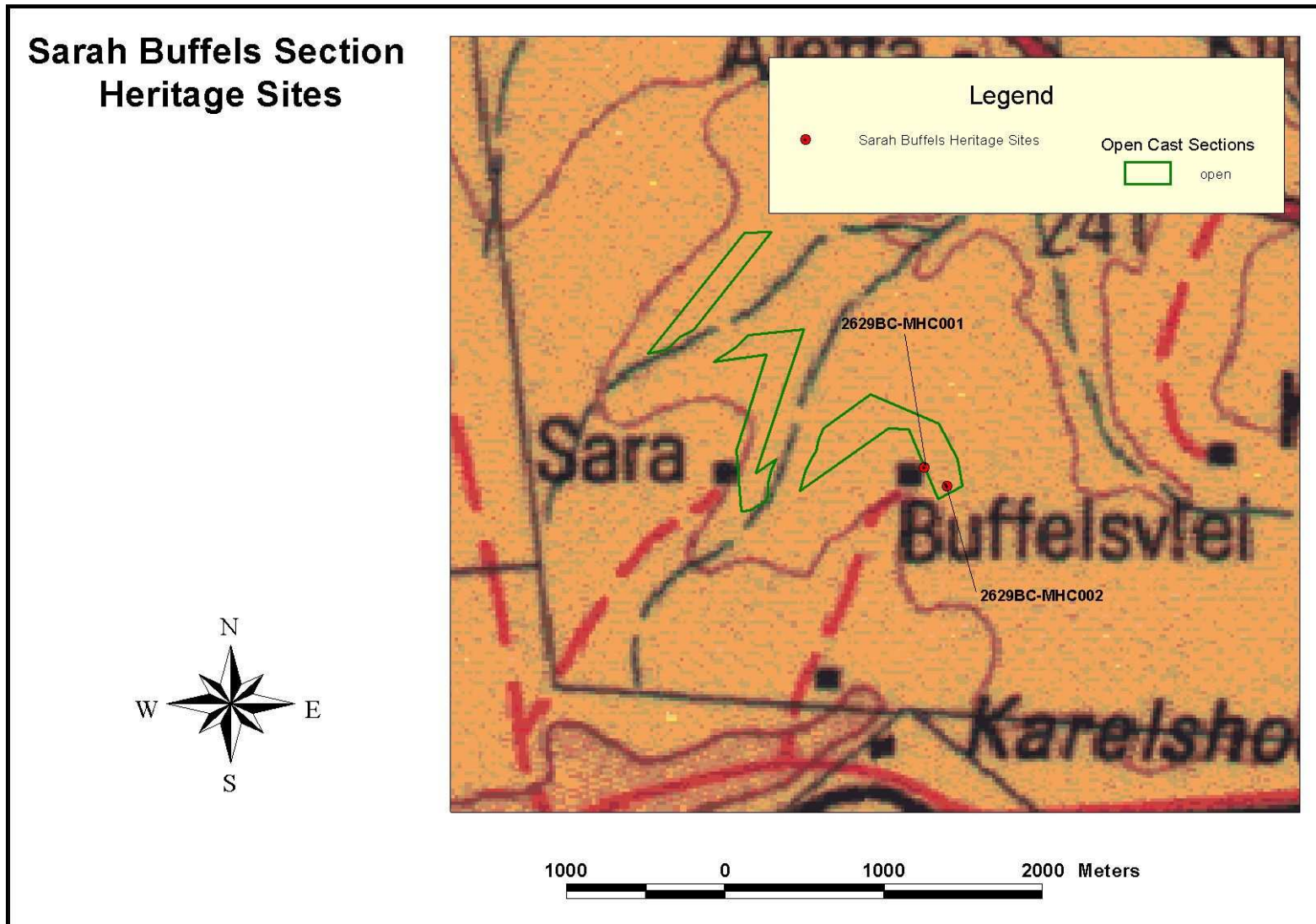


Figure 9: Sarah Buffels heritage sites

## **8. SITES OF SIGNIFICANCE – STERKFRONTEIN SECTION**

During the field survey no sites of archaeological significance were found in the areas selected for opencast mining.

### **8.1 ASSESSMENT AND RECOMMENDATIONS**

*A locality map is provided in **Section 8.2***

There is from an archaeological point of view no reason why the development can not commence.

#### **General**

If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.



## 8.2 LOCALITY MAP

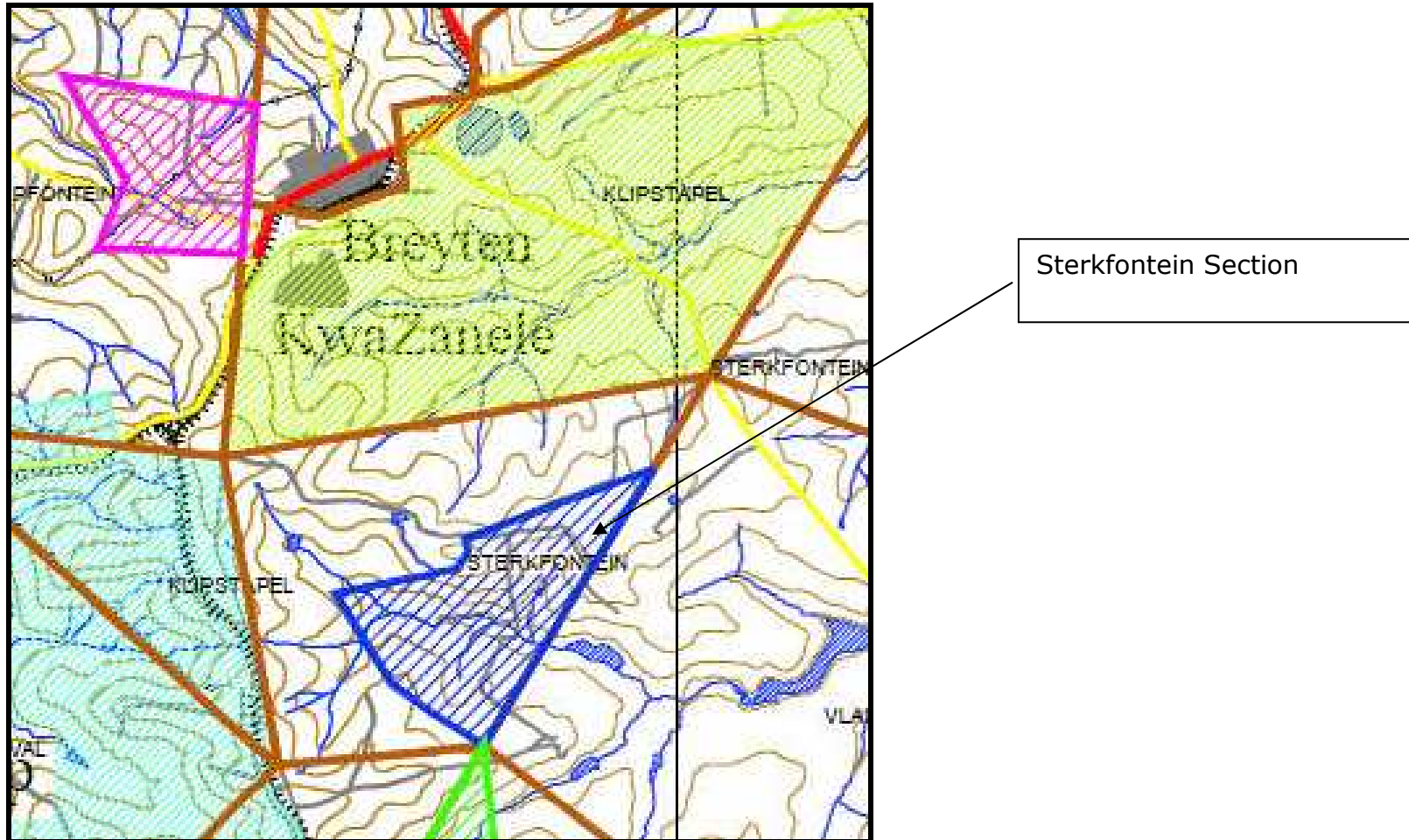


Figure 10: Sterkfontein Section - Locality Map

## **9. SITES OF SIGNIFICANCE – BLOEMFONTEIN SECTION**

During the field survey no sites of archaeological significance were found in the areas selected for opencast mining.

### **9.1 ASSESSMENT AND RECOMMENDATIONS**

*A locality map is provided in **Section 9.2***

There is from an archaeological point of view no reason why the development can not commence.

#### **General**

If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

## 9.2 LOCALITY MAP

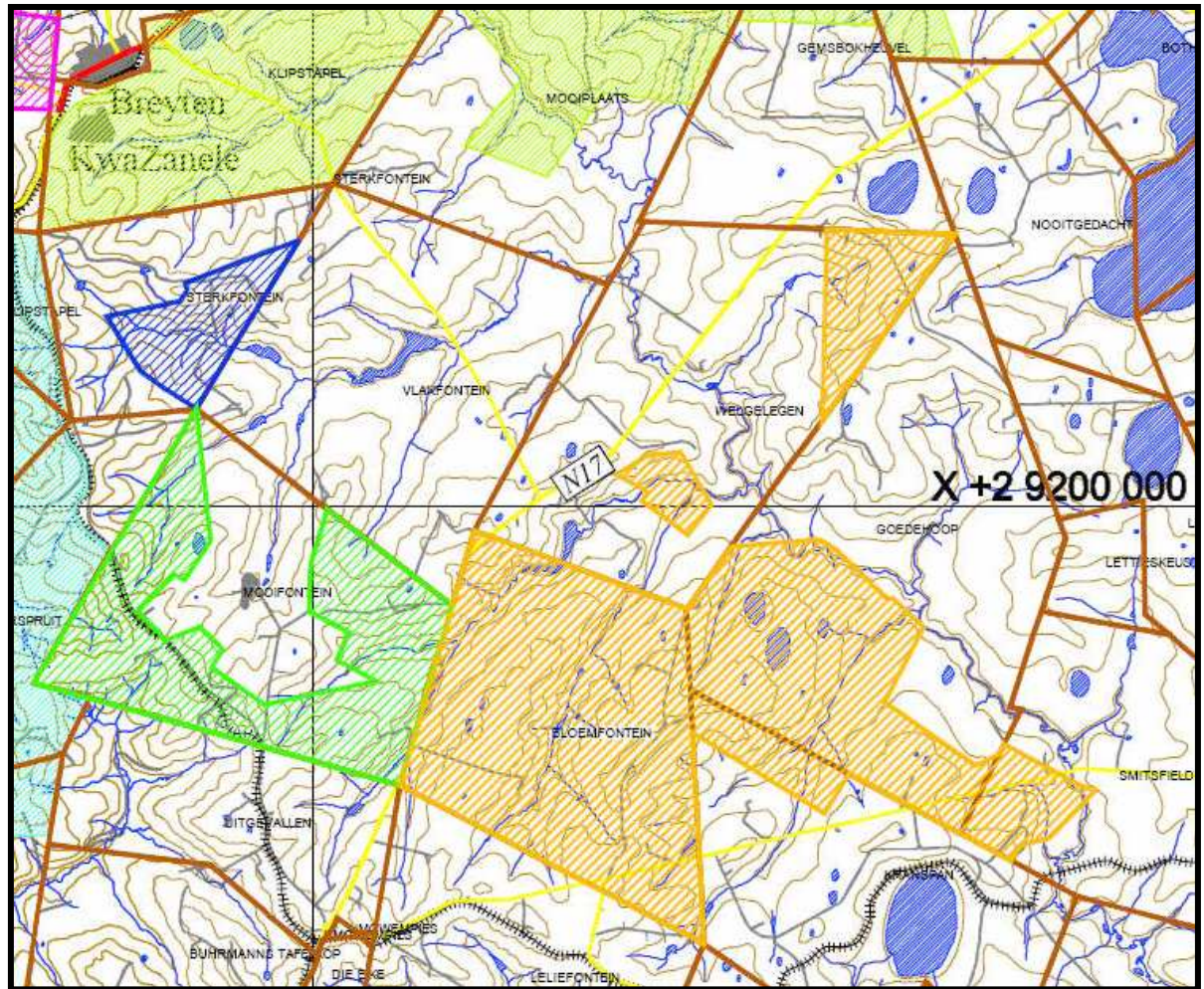


Figure 11: Bloemfontein Section - Locality Map

## **10. 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-ARM 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.

## **11. 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 and 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 NHRA (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.*

*Under the NHRA, 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.*

## 12. LIST OF PREPARES

Wouter Fourie, BA (Hon) Archaeology (Pretoria)

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