

## HERITAGE IMPACT SCOPING ASSESSMENT FOR THE PROPOSED NEW LARGO MINING DEVELOPMENT, WITBANK AREA, MPUMALANGA

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**NATIONAL CULTURAL HISTORY MUSEUM**  
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## **EXECUTIVE SUMMARY**

### **HERITAGE IMPACT SCOPING ASSESSMENT FOR THE PROPOSED NEW LARGO MINING DEVELOPMENT, WITBANK AREA, MPUMALANGA**

The aim of the survey was to locate, identify and evaluate sites, objects and structures of cultural significance found within the boundaries of the area in which it is proposed to develop a coal mining operations and its infrastructure. The area is located on the highveld, which did not see much human occupation in pre-colonial times. This very much has to do with economic strategies, cultural preferences and climate fluctuations. It was only after white settlers entered the area that population numbers increased significantly.

A number of sites of cultural significance were identified in the study area. These date mostly from historic times and can be categorised as structures (farmsteads/homesteads) and cemeteries/graves. None of the sites are deemed to be of such significance that it would prevent development in any of the two study areas.

Some interesting structures (houses and outbuildings) were identified and, if they cannot be rehabilitated and reused, they can be demolished after they have been recorded in full, in which case SAHRA would issue a permit for their destruction. Similarly, the graves also do not present a problem as they can be relocated to new cemeteries, after the correct procedure has been followed. This includes, inter alia, notification of intent to remove the graves, consultation with descendants, permits from the police and provincial authorities, and, in cases where the graves

It is our viewpoint that the proposed development can take place and we therefore put forward the following recommendations:

- Development can continue only on condition of acceptance of the proposed mitigation measures set out for each particular site (see Appendix 2).
- Once a final site has been selected and the 'footprint' of the development is known, it should again be surveyed by an archaeologist.

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**GLOSSARY OF TERMS AND ABBREVIATIONS**

**STONE AGE**

Early Stone Age (ESA)	2 000 000 - 150 000 Before Present
Middle Stone Age (MSA)	150 000 - 30 000 BP
Late Stone Age (LSA)	30 000 - until c. AD 200

**IRON AGE**

Early Iron Age (EIA)	AD 200 - AD 1000
Late Iron Age (LIA)	AD 1000 - AD 1830

**HISTORIC PERIOD**

Since the arrival of the white settlers - c. AD 1840 in this part of the country

ADRC - Archaeological Data Recording Centre

Impact - A description of the effect of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space

PHRA – Provincial Heritage Resources Agency

SAHRA - South African Heritage Resources Agency

## **DEFINITIONS AND ASSUMPTIONS**

- *Cultural resources* are all non-physical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.
- The *significance* of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.
- Sites regarded as having low significance have already been recorded in full and require no further mitigation. Sites with medium to high significance require further mitigation.
- Archaeological sites: any area of land containing artefacts, ecofacts, features and structures in any combination of the above.
- Isolated occurrences: findings of artefacts or other remains located apart from archaeological sites. Although these are noted and samples are collected, it is not used in impact assessment and therefore do not feature in the report.
- Traditional cultural use: resources which are culturally important to people.
- The latitude and longitude of archaeological sites are to be treated as sensitive information by the developer and should not unduly be disclosed to members of the public.

## **HERITAGE IMPACT SCOPING ASSESSMENT FOR THE PROPOSED NEW LARGO MINING DEVELOPMENT, WITBANK AREA, MPUMALANGA**

### **1. INTRODUCTION**

The National Cultural History Museum<sup>1</sup>, Pretoria, was appointed by Oryx Environmental to conduct a Heritage Impact Scoping Assessment of an area in which is proposed to develop the New Largo coal mining operations and its associated infrastructure.

### **2. SCOPE OF WORK**

The scope of work consisted of conducting a Phase 1 archaeological survey of the site in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

This include:

- Conducting a desk-top investigation of the area;
- A visit to the proposed development site.

The objectives were to

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Indicated which would be the preferred site for the proposed development;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

### **Limitations**

In some sections of the surveyed areas, the grass cover is very tall and dense, making the detection of sites, features and objects of cultural significance very difficult.

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<sup>1</sup> The National Cultural History Museum is affiliated to the Northern Flagship Institution, which act as parent body for a number of museums, all of which resorts under the Department of Arts and Culture.

### 3. STUDY APPROACH AND METHODOLOGY

#### 3.1 Extent of the Study

This survey and impact assessment covers the areas of the proposed developments and its related infrastructure, as presented in Section 4 and illustrated in Figure 1.

#### 3.2 Methodology

##### 3.1 Preliminary investigation

###### 3.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various reports, anthropological, archaeological and historical sources were consulted - see the list of references below. Very little pertaining to the area specific was found and most sources deal with topics in the larger geographical region.

###### 3.1.2 Data bases

The *Heritage Sites Database* and the *Environmental Potential Atlas* was consulted.

###### 3.1.3 Other sources

Topocadastral and other maps were also studied - see the list of references below.

##### 3.2 Field survey

The two areas were divided into blocks by using natural (e.g. rivers) as well as manmade (e.g. roads), and each block was surveyed, either by foot, or by driving across it in a number of transects. Fences and rivers obviously necessitated a deviation from this strategy. In addition, farm owners and workers were interviewed and with their help a number of sites were identified.

##### 3.3 Documentation

Sites, objects and structures that are identified are documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities are determined by means of the *Global Positioning System (GPS)*<sup>2</sup> and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

Map datum used: Hartebeeshoek 94 (WGS84).

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<sup>2</sup> According to the manufacturer a certain deviation may be expected for each reading. Care was, however, taken to obtain as accurate a reading as possible, and then to correlate it with reference to the physical environment before plotting it on the map.

## 4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

### 4.1 Location

The two surveyed areas are located south of the N4, linking the towns of the Bronkhorstspuit and Witbank, and north of the N12, linking Johannesburg and Witbank (Fig. 1).

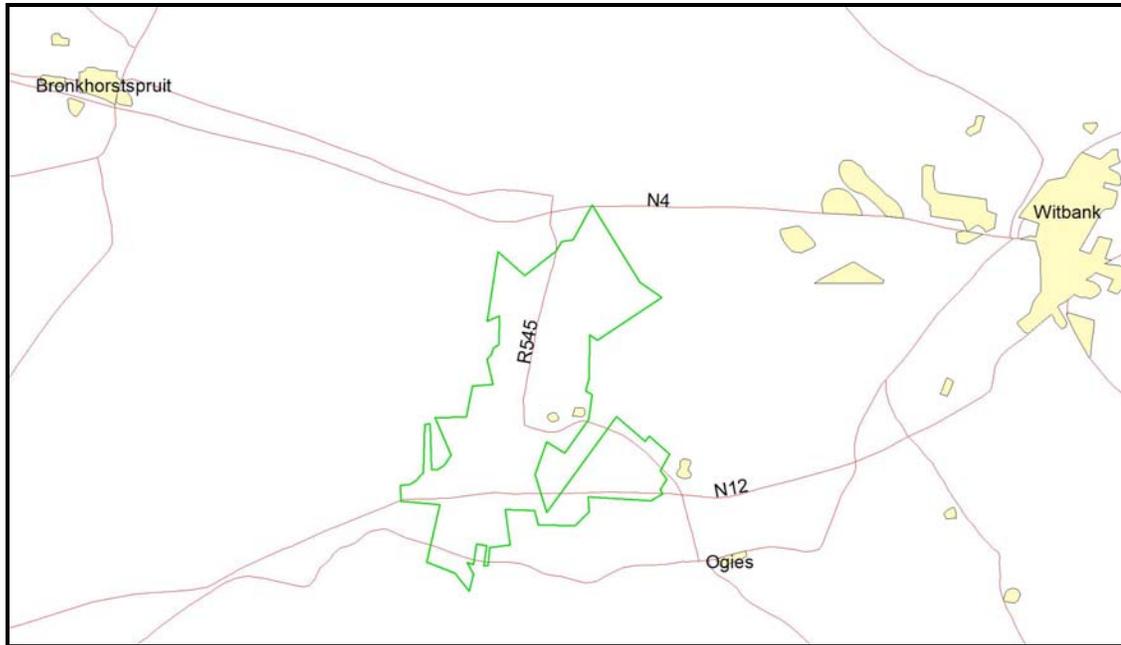


Fig. 1. Location of the study area in regional context.

### 4.2 Site Description

The geology of the area is quite complex, being made up of irregular intrusions of tillite, norite, arenite and granite, overlain in areas by shale. The original vegetation is classified as Moist Cool Highveld Grassland, but has been replaced over most of the area by agricultural fields, or black wattle plantations. The topography is described as gently rolling hills. A few small river pass trough the area, with the Wilge river as the most significant. A number of pans occur sporadically.

### 4.3 Overview of the region

#### *Stone Age*

Very little habitation of the highveld area took take place during Stone Age times. Tools dating to the Early Stone Age period are mostly found in the vicinity of larger watercourses, e.g. the Vaal River, or in sheltered areas such as the Magaliesberg. During Middle Stone Age (MSA) times (c. 150 000 – 30 000 BP), people became more mobile, occupying areas formerly avoided. The MSA is a technological stage characterized by flakes and flake-blades with faceted platforms, produced from prepared cores, as distinct from the core tool-based ESA technology. Open sites were still preferred near watercourses. These people were adept at exploiting the huge herds of animals that passed through the area, on their seasonal migration.

Late Stone Age (LSA) people had even more advanced technology than the MSA people and therefore succeeded in occupying even more diverse habitats. Some sites are known to occur in the region. These vary from sealed (i.e. cave) sites, located to the north and south of the study area, to open sites in the Magaliesberg. Also, for the first time we get evidence of people's activities derived from material other than stone tools. Ostrich eggshell beads, ground bone arrowheads, small bored stones and wood fragments with incised markings are traditionally linked with the LSA. The LSA people have also left us with a rich legacy of rock art, which is an expression of their complex social and spiritual beliefs.

### *Iron Age*

Iron Age people started to settle in southern Africa c. AD 300, with one of the oldest known sites at Broederstroom south of Hartebeespoort Dam dating to AD 470. Having only had cereals (sorghum, millet) that need summer rainfall, Early Iron Age (EIA) people did not move outside this rainfall zone, and neither did they occupy the central interior highveld area. Because of their specific technology and economy, Iron Age people preferred to settle on the alluvial soils near rivers for agricultural purposes, but also for firewood and water.

The occupation of the larger geographical area (including the study area) did not start much before the 1500s. By the 16th century things changed, with the climate becoming warmer and wetter, creating conditions that allowed Late Iron Age (LIA) farmers to occupy areas previously unsuitable, for example the treeless plains of the Free State and the Mpumalanga highveld.

This wet period came to a sudden end sometime between 1800 and 1820 by a major drought lasting 3 to 5 years. The drought must have caused an agricultural collapse on a large, subcontinental scale.

This was also a period of great military tension. Military pressure from Zululand spilled onto the highveld by at least 1821. Various marauding groups of displaced Sotho-Tswana moved across the plateau in the 1820s. Mzilikazi raided the plateau extensively between 1825 and 1837. The Boers trekked into this area in the 1830s. And throughout this time settled communities of Tswana people also attacked each other.

As a result of this troubled period, Sotho-Tswana people concentrated into large towns for defensive purposes. Because of the lack of trees they built their settlements in stone. These stone-walled villages were almost always located near cultivatable soil and a source of water. Such sites are known to occur near Kriel (e.g. Pelsler, et al 2006) and in the Bronkhorstspuit area.

### *Historic period*

White settlers moved into the area during the first half of the 19<sup>th</sup> century. They were largely self-sufficient, basing their survival on cattle/sheep farming and hunting. Few towns were established and it remained an undeveloped area until the discovery of coal and later gold. The establishment of the NZASM railway line in the 1880s, linking Pretoria with Lourenço Marques and the world at large, brought much infra-structural and administrative development to the area. This railway line also became the scene of many battles during the Anglo-Boer War and a concentration camp was established near the Balmoral station, northwest of the study area.

During the Anglo-Boer War, a number of skirmishes occurred in the larger region, with one of the last and biggest battles fought that being at Bakenlaagte south of the town of Kriel on 30 October 1901. In line with the 'scorched earth' policy, most farmsteads were destroyed by the British during the latter part of the hostilities.

Coal mining occurred only sporadically in the area. However, with the discovery of the Witwatersrand gold fields, the need for a source of cheap energy became important, and coal mining developed on

a large scale in various regions. By 1899, at least four collieries were operating in the Middelburg-Witbank<sup>3</sup> district, supplying the gold mining industry.

#### 4.4 Identified sites

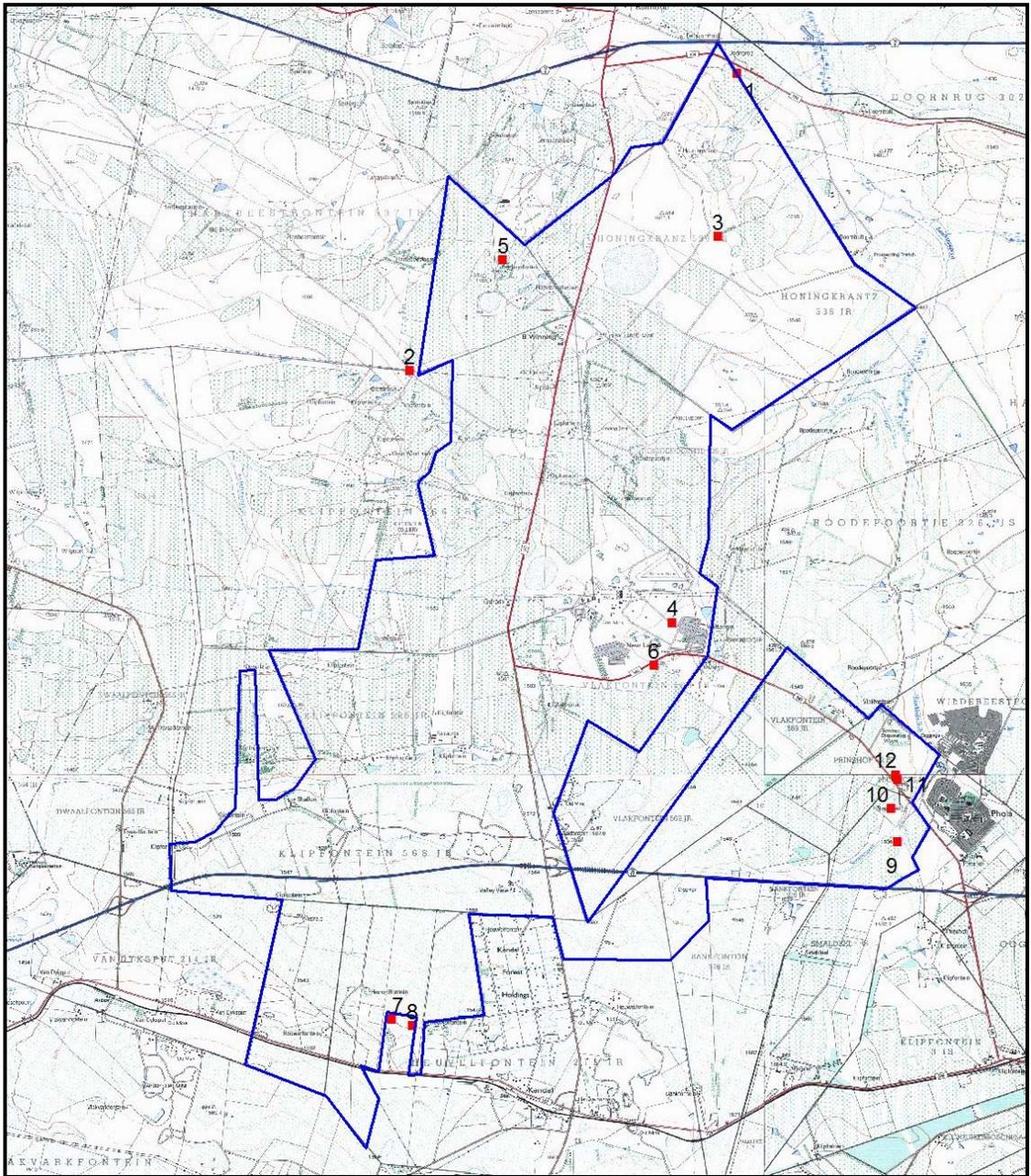


Fig. 2. The location of the identified sites within the study area. For detailed discussions of all of them, see Appendix 2.

<sup>3</sup> Witbank was established only after 1903.

#### 4.4.1 Stone Age

Stone Age occupation took place on the steep quartzite ridge located on the farm Honingkranz 536JR. Stone tools were noticed in a number of places, with one of the more interesting a factory site occurring in front of a small rock shelter. The vegetation along this ridge is very dense, in some places impenetrable, making it difficult to determine the total extent of occupation here. It is possible that a detailed survey will produce a large number of sites, some that might even contain rock art.

#### 4.4.2 Iron Age

No sites, objects or features dating to the Iron Age were identified.

#### 4.4.3 Historic period

Remains dating to the historic period fall into three categories, which are actually intimately linked with each other, but for the purpose of the study are separated.

- Farmsteads/homesteads: Some of the formal structures (houses and outbuildings) identified date back to the late 19<sup>th</sup> century. However, most buildings date to a much later period, c. the middle of the 20<sup>th</sup> century. This also holds true for the farm labourer houses, as they were much more likely to be moved by the landowner, or abandoned to find work on a different farm.
- Cemeteries/graves: These are obviously related to the people occupying the various farmsteads, as well as the people who worked on the farms as labourers. It is expected that many more such informal cemeteries would be located if the vegetation has died (burned) down.
- Industrial/infra-structural remains, such as the old Wilge Power Station and the substation, currently still in use.

## 5. IDENTIFICATION OF RISK SOURCES

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted on can be written into the management plan, whence they can be avoided or cared for in the future.

The following project actions may impact negatively on heritage sites and other features of cultural importance. The actions are most likely to occur during the construction phase of a project.

**Table 1**

### Construction phase:

Possible Risks	Source of the risk
Actually identified risks	
- damage to sites	Construction work
Anticipated risks	
- looting of sites	Curious workers

### Operation phase:

Possible risks	Source of risk
Actually identified risks	
- damage to sites	Not keeping to development plans
Anticipated risks	
- damage to sites	Unscheduled construction/developments
- looting of sites	Curious workers/visitors

## **6. RECOMMENDATIONS**

The aim of the survey was to locate, identify and evaluate sites, objects and structures of cultural significance found within the boundaries of the area in which it is proposed to develop a coal mining operations and its infrastructure. The area is located on the highveld, which did not see much human occupation in pre-colonial times. This very much has to do with economic strategies, cultural preferences and climate fluctuations. It was only after white settlers entered the area that population numbers increased significantly.

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## 7. REFERENCES

### 7.1 Data bases

Heritage Sites Database, Pretoria.

Environmental Potential Atlas, Department of Environmental Affairs and Tourism.

### 7.2 Literature

Acocks, J.P.H. 1975. *Veld Types of South Africa*. Memoirs of the Botanical Survey of South Africa, No. 40. Pretoria: Botanical Research Institute.

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### 7.3 Maps

1: 50 000 Topocadastral maps – 2528DD, 2529CC, 2628BB, 2629AA

## 8. PROJECT TEAM

J van Schalkwyk, principal investigator

## APPENDIX 1: STANDARDIZED SET OF CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON CULTURAL RESOURCES

### Significance

The *significance* of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

<b>1. Historic value</b>			
Is it important in the community, or pattern of history			
Does it have strong or special association with the life or work of a person, group or organisation of importance in history			
Does it have significance relating to the history of slavery			
<b>2. Aesthetic value</b>			
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group			
<b>3. Scientific value</b>			
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage			
Is it important in demonstrating a high degree of creative or technical achievement at a particular period			
<b>4. Social value</b>			
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons			
<b>5. Rarity</b>			
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage			
<b>6. Representivity</b>			
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects			
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class			
Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.			
<b>7. Sphere of Significance</b>			
		High	Medium
	International		
	National		
	Provincial		
	Regional		
	Local		
	Specific community		
<b>8. Significance rating of feature</b>			
1.	Low		
2.	Medium		
3.	High		

### Significance of impact:

- low where the impact will not have an influence on or require to be significantly accommodated in the project design
- medium where the impact could have an influence which will require modification of the project design or alternative mitigation
- high where it would have a “no-go” implication on the project regardless of any mitigation

### Certainty of prediction:

- Definite: More than 90% sure of a particular fact. Substantial supportive data to verify assessment
- Probable: More than 70% sure of a particular fact, or of the likelihood of that impact occurring

- Possible: Only more than 40% sure of a particular fact, or of the likelihood of an impact occurring
- Unsure: Less than 40% sure of a particular fact, or the likelihood of an impact occurring

**Recommended management action:**

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- 1 = no further investigation/action necessary
- 2 = controlled sampling and/or mapping of the site necessary
- 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
- 4 = preserve site at all costs

**Legal requirements:**

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.

**APPENDIX 2: SURVEY RESULTS<sup>4</sup>**

[Previous site numbers relate to other known sites on a particular ¼ degree sheet already documented in the ADRC, and does not necessarily refer to sites occurring on or close to the specific area of development.]

Map datum used: Hartebeeshoek 94 (WGS84).

Number	Name	Period	Farm	Latitude	Longitude	Description	Management
1	Cemetery	Historic	Doornrug 302JS	-25.87499	28.99481	Eleven grave, mostly Skhosana, dating between 1950-1970.	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
2	Graves	Historic	Klipfontein 566JR	-25.92836	28.93611	Six graves	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
3	Factory site	Stone Age	Honingkratz 536JR	-25.90431	28.99137	Small shelter with lots of flakes and debitage in front of it	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
4	Pioneer's cemetery	Historic	Vlakfontein 569JR	-25.97354	28.98322	Twenty graves of Grove and Van der Merwe families, dating to between 1870-1920.	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
5	Cemetery	Historic	Hartbeestfontein 537JR	-25.90848	28.95289	c. Five graves	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
6	Cemetery	Historic	Vlakfontein 569JR	-25.98121	28.97993	More than 20 graves.	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
7	Cemetery	Historic	Heuvelfontein 215IR	-26.04475	28.93290	A number of graves in a more formal cemetery. Va Moldendorf, Meyer and De Villiers	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
8	Cemetery	Historic	Heuvelfontein 215IR	-26.04588	28.93665	Approximately 40 graves of Jiyane, Ntuli and Masumbuka families	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
9	Grave	Historic	Smaldeel 1is	-26.01278	29.02361	Single grave	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
10	Cemetery: Botha & Norris	Historic	Smaldeel 1is	-26.00694	29.02250		3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
11	Cemetery	Historic	Prinshof 2is	-26.00167	29.02361	Cemetery with two graves, one of Prinsloo, dated 1948.	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
12	Cemetery	Historic	Prinshof 2is	-26.00083	29.02333	Large informal cemetery with grave of farm labourers.	3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary

<sup>4</sup> See Appendix 1 for an explanation of the conventions used in assessing the cultural remains.