

**PROPOSED 9600 SOW UNIT PIGGERY AND AN ABATTOIR TO BE ESTABLISHED 20  
KM EAST OF AMERSFOORT MPUMALANGA PROVINCE**



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Although all possible care is taken to identify/find all sites of cultural importance during the initial survey of the study area, the nature of archaeological and historical sites are as such that it is always possible that hidden or sub-surface sites could be overlooked during the study. Leonie Marais-Botes Heritage Practitioner will not be held liable will not be held liable for such oversights or for the costs incurred as a result thereof.

## ACKNOWLEDGEMENTS

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**ABOUT THIS REPORT**

*The heritage report must reflect that consideration has been given to the history and heritage significance of the study area and that the proposed activities is sensitive towards the heritage resources and does not significantly alter or destroy the heritage significance of the study area.*

*The heritage report must refer to the heritage resources currently in the study area.*

*The opinion of an independent heritage consultant is required to evaluate if the proposed work generally follows a good approach that will ensure the conservation of the heritage resources.*

*The National Heritage Resources Act (Act 25 of 1999), the National Environmental Management Act (Act 107 of 1998), Ordinance on Exhumations (no 12 of 1980) and the Human Tissues Act (Act 65 of 1983 as amended) are the guideline documents for a report of this nature.*

*Leonie Marais-Botes was appointed by REC SERVICES (PTY) LTD (trading as Rock Environmental Consulting) to carry out a Phase 1 Heritage Impact Assessment (HIA) for the proposed 9600 Sow Unit Piggery and Abattoir to be established 20 km East of Amersfoort, Mpumalanga Province. The site visit took place on 18 April 2017.*

**DEFINITION OF TERMS:**

“alter” means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or other decoration or any other means.

“archaeological” means—

(a) material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;

(b) rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;

(c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and

(d) features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

“conservation”, in relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance.

“cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

“development” means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including—

(a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;

(b) carrying out any works on or over or under a place;

(c) subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;

(d) constructing or putting up for display signs or hoardings;

(e) any change to the natural or existing condition or topography of land; and

(f) any removal or destruction of trees, or removal of vegetation or topsoil; object that is specifically designated by that state as being of importance.

“grave” means a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place.

“heritage resource” means any place or object of cultural significance.

“heritage resources authority” means the South African Heritage Resources Agency, or in respect of a province, a provincial heritage resources authority.

“heritage site” means a place declared to be a national heritage site by SAHRA or a place declared to be a provincial heritage site by a provincial heritage resources authority.

“improvement”, in relation to heritage resources, includes the repair,

restoration and rehabilitation of a place protected in terms of Act 25 of 1999.

“living heritage” means the intangible aspects of inherited culture, and may include—

(a) cultural tradition;

(b) oral history;

(c) performance;

(d) ritual;

(e) popular memory;

(f) skills and techniques;

(g) indigenous knowledge systems; and

(h) the holistic approach to nature, society and social relationships.



“local authority” means a municipality as defined in section 10B of the Local Government Transition Act, 1993 (Act No. 209 of 1993).

“management”, in relation to heritage resources, includes the conservation, presentation and improvement of a place protected in terms of Act 25 of 1999.

“meteorite” means any naturally-occurring object of extraterrestrial origin.

“object” means any movable property of cultural significance which may be protected in terms of any provisions of Act 25 of 1999, including—

- (a) any archaeological artefact;
- (b) palaeontological and rare geological specimens;
- (c) meteorites; and
- (d) other objects.

“palaeontological” means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trances.

“place” includes—

- (a) a site, area or region;
- (b) a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
- (c) a group of buildings or other structures which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures;
- (d) an open space, including a public square, street or park; and
- (e) in relation to the management of a place, includes the immediate surroundings of a place.

“presentation” includes—

- (a) the exhibition or display of;
- (b) the provision of access and guidance to;
- (c) the provision, publication or display of information in relation to; and
- (d) performances or oral presentations related to, heritage resources protected in terms of Act 25 of 1999.

“public monuments and memorials” means all monuments and memorials—

- (a) erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government; or
- (b) which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual.

“site” means any area of land, including land covered by water, and including any structures or objects thereon.

“structure” means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

“victims of conflict” means—

(a) certain persons who died in any area now included in the Republic as a direct result of any war or conflict as specified in the regulations, but excluding victims of conflict covered by the Commonwealth War Graves

Act, 1992 (Act No. 8 of 1992);

(b) members of the forces of Great Britain and the former British Empire who died in active service in any area now included in the Republic prior to 4 August 1914;

(c) persons who, during the Anglo-Boer War (1899-1902) were removed as prisoners of war from any place now included in the Republic to any place outside South Africa and who died there; and

(d) certain categories of persons who died in the “liberation struggle” as defined in the regulations, and in areas included in the Republic as well as outside the Republic.

## **EXECUTIVE SUMMARY**

Leonie Marais-Botes Heritage Practitioner was requested by REC Services (Pty) Ltd to carry out a Phase 1 Heritage Impact Assessment (HIA) for the proposed 9600 Sow Unit Piggery and Abattoir to be established 20 km East of Amersfoort, Mpumalanga Province.

A field survey was conducted after which a survey of literature was undertaken.

Graves are situated near the area earmarked for development.

It should be noted that the sub-surface archaeological and/or historical deposits and graves are always a possibility. Care should be taken during any work in the entire area and if any of the above is discovered, an archaeologist/heritage practitioner should be commissioned to investigate.

## 1. INTRODUCTION

The project entails a proposed 9600 sow unit piggery and an abattoir. The project description and pig production for We-Grow Pork will be as follow:

All designs are based on the latest SARPO and the European Union's new pig regulations and legislation.

All the buildings and equipment are designed with the above objectives in mind. The pigs will be free at all times except during lactations. This is to prevent the sows from injuring the piglets when they are just born. Once these piglets are strong enough to fend for themselves the farrowing crates will be opened to give the sow more space. The animals' welfare is placed at all time as priority number one.

Each production centre has a special care centre for sick or injured animals. The hygiene in the units is paramount and will be administered to prevent any disease spread. All humans will be required to shower and be disinfected when entering and leaving the units.

The effluent from the units is all organic and will be sold or used as organic fertiliser and organic liquid. The effluent will be stored under the houses in slurry pits and flushed every 14 days to prevent any ammoniac developing. No water will be required to flush the organic effluent from the buildings. The effluent will be piped to an effluent separation sections to prevent any contact with soil, or the nearby surroundings. The organic solids will be separated from the liquid by means of a separation press. The dry matter will be stored for own use, or selling to the surrounding farms and the organic liquid will be stored in a lined dam for fertigation through the nearby centre pivots. The above organic fertiliser will be used on 1600 ha of maize and soya fields, to fertilise two crops a year. Total ha 3200.

Water will be harvested from all the 45 000 m<sup>2</sup> roofs for use in the piggery. This will amount to ± 30 000 m<sup>3</sup> a year, which is about 40% of the requirement of the farm.

The farm will also make use of solar energy for the heating of all the water for washing purposes. We have also made provision for a biogas plant in the future when it became viable.

The production units are as follow:

Site 1	Breeding and Farrowing
Site 2	Weaner
Site 3	Finishers

The unit is designed considering the following norms.

Sows:

- 2400 sows: 28/30 weaned piglets per sow a year.
- 114 days pregnant: 28 days in lactation: 150 day sow cycle = 2.4 farrowing are per year.
- Replacing 45/50% sows a year
- AI with some natural services

Gilt Development

Breeding stock will be selected at 28 days from the farrowing house and housed in the gilt development nursery. Breeding will take place every 2 weeks with 14/15 sows to supply 70 gilt weaners. This selected stock will be kept in 2 sections for 42 days and then moved to the development section. Breeding stock will be kept in groups of 18 up to 180 days or first heat. These gilts can be served by a V-Boar, or and moved to a gilt pen for 1 to 2 weeks before introduced to the ESF training section for 5/6 weeks. Two week before Insemination 50 gilts will be moved to the AI section to get used to AI crate. Provision is made for 88 gilt crates. By introducing the gilts earlier to the AI crates will improve the conception rate. The gilts will only be kept in crates for insemination. The rest of the time the sow will be free to walk around

The Gilt training section is a part of the breeding house. This section will hold 50/60 gilts in different stages from 180 days to 220 days. Gilts will be kept in pens on arrival from the development section and then moved to a training section to be introduced to the ESF stations. Gilts will be exposed to a boar. The gilts will be in contact with the detection boar. As they come on heat the gilts will be marked with a colour so that you can identify them. This will assist your stockman as gilts are sometimes difficult to recognise when they come on heat the first time.

This system will then daily select all gilts that are on heat... From here they will be moved to the AI section to be served and introduced into the sow herd. We have made provision for the gilts to be moved to the AI section two week before insemination.

### Breeding/ AI

Gilts will be kept in special Gilt AI crates and the sows in sow AI crates. Boar gates are fitted in front of every 7 sows. Sows will stay in AI section for 7 days and then moved to the early gestation for 35/40 days. In this section the sows can be kept in crates or as free sows by opening the gates.

After 35/40 days, and the sows are certified pregnant, they will move to the gestation house. The sows will be accommodated in an open house with ESF station with 2.3 m<sup>2</sup> space each. Each sow will be individually fed by the ESF station. The sows can eat at their own time when they are in need of feed. This is an advantage as the sow is protected during feeding and the feed can be altered for the individual sow.

### Farrowing

The sows will be in the farrowing house for 26/28 days. The farrowing house will house 60 sows in 10 rooms on slats with anti-Crushing crates. These crates prevent the sows from crushing the piglets. In the design of the Plantkor sow stall, special attention was given to animal comfort with an optimum sanitation. This reduces the mortality to less than 6% below the norm.

### Weaners

- Weaning on 28 days 7/8kg
- 49 days in weaning house with a daily average to reaching +/- 30kg
- 3 to 4 % mortality
- Required temperature is 27 degrees for the first two weeks and reducing by 1 degree per week

There are 8 rooms with 2800 pig spaces. Each room is divided in 72 pens of which 2 are divided to be used as special care pens. The Ventilation is our unique system that allows us to ventilate up to 70 cub meters of air per weaner in one hour without causing a draught. This is essential in South Africa's hot summer months.

### Finishing Pigs

We have made provision for 1400 pigs per building up to a max of 100 kg live weight. There are 12 buildings with 80 pens of 17 pigs per pen. One pen is divided into two special care pens per building. We have allowed 0, 0,882 m<sup>2</sup> per pig. We have made provision for 1 feed line. One silo will be used for the different feeds.

### **1.1 WHY A PHASE 1 HERITAGE IMPACT ASSESSMENT IS REQUIRED?**

This project may potentially impact on any types and ranges of heritage resources that are outlined in Section 3 of the National Heritage Resources Act (Act 25 of 1999). Subsequently a Phase 1 Heritage Impact Assessment (HIA) was commissioned by Rock Environmental Consulting (Pty) Ltd and conducted by Leonie Marais-Botes.

### **1.2 METHOD**

The objective of this Phase 1 Heritage Impact Assessment (HIA) was to gain an overall understanding of the heritage sensitivities of the area and indicate how they may be impacted on through development activities. The site survey took place on 18 April 2017.

In order to establish heritage significance the following method was followed:

- Investigation of primary resources (archival information)
- Investigation of secondary resources (literature and maps)
- Physical evidence (site investigation)
- Determining Heritage Significance.

### **1.3 HISTORIY OF THE STUDY AREA**

Amersfoort is a small town near Wakkerstroom in the Mpumalanga Province. The town was established in 1867 and was named after a place in Holland. Maize and Wool centre<sup>1</sup>.

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<sup>1</sup> E. Rosenthal (Compiler and Editor), Encyclopaedia of Southern Africa, p. 18.

#### 1.4 LOCATION AND PHOTOGRAPHIC RECORD OF STUDY AREA

The farm Zoetfontein 4-HT on which the piggery will be established is 22km east of the town Amersfoort:

- From the bridge on the Skulpspruit (Amersfoort's eastern boundary) travel 900m in an eastern direction where one will connect with a T-junction, entering from the right;
- Turn right here and travel for 14km where the road will fork. Keep left.
- Travel 7.1km on this road and the first proposed site will be on the right next to the road.

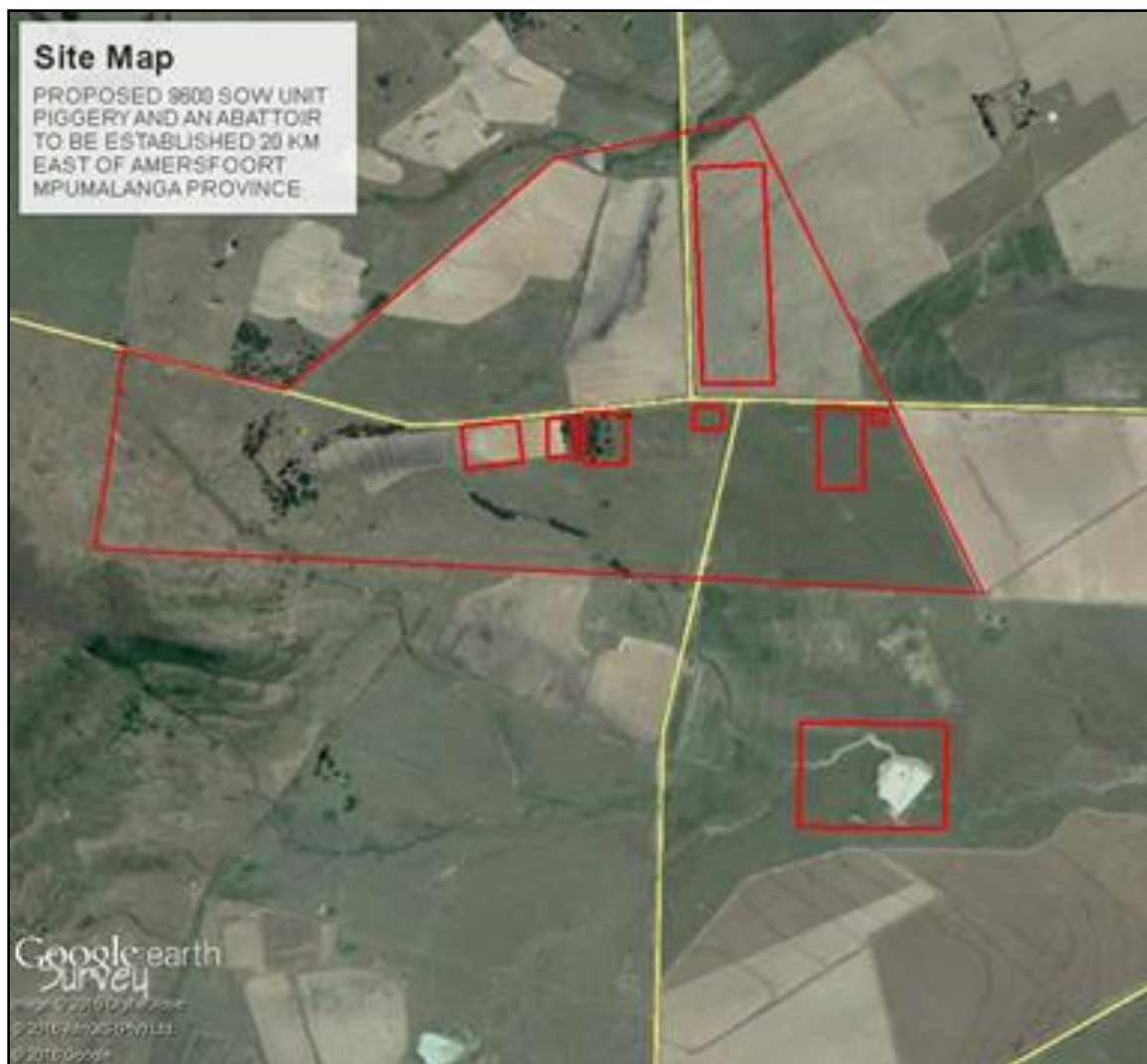


Figure 1 : Location of study area and proposed components





**Figure 2: Site characteristics in open fields**



**Figure 3: Site characteristics along Eucalyptus tree stand**



**Figure 4: Site characteristics in Maize field**



**Figure 5: Site characteristics along the road**



**Figure 6: Site characteristics closer to the graves**



**Figure 7: Site characteristics at the existing dam**

## 2. FINDINGS

### 2.1 PRE-COLONIAL HERITAGE SITES

Possibilities: Greater study area taken into account.

#### Stone Age

The Stone Age is the period in human history when stone material was mainly used to produce tools<sup>2</sup>. In South Africa the Stone Age can be divided in three periods<sup>3</sup>;

- Early Stone Age 2 000 000 – 150 000 years ago
- Middle Stone Age 150 000 – 30 000 years ago
- Late Stone Age 40 000 years ago - +/- 1850 AD

#### Iron Age

The Iron Age is the period in human history when metal was mainly used to produce artefacts<sup>4</sup>. In South Africa the Iron Age can be divided in three periods;

- Early Iron Age 250-900 AD
- Middle Iron Age 900-1300 AD
- Late Iron Age 1300-1840 AD<sup>5</sup>

*There are no pre-colonial heritage sites evident in the study area. This can be attributed to previous farming activities in the study area.*

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<sup>2</sup> P. J. Coertze & R.D. Coertze, Verklarende vakwoordeboek vir Antropologie en Argeologie.

<sup>3</sup> S.A. Korsman & A. Meyer, *Die Steentydperk en rotskuns* in J.S. Bergh (red) Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.

<sup>4</sup> P.J. Coertze & R.D. Coertze, Verklarende vakwoordeboek vir Antropologie en Argeologie.

<sup>5</sup> M.M. van der Ryst & A Meyer. *Die Ystertydperk* in J.S. Bergh (red) Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies and T.N Huffman, A Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa.

## **2.2 HISTORICAL PERIOD HERITAGE SITES**

Possibilities: Greater study area taken into account.

- Pioneer sites;
- Sites associated with early mining;
- Structures older than 60 years;
- Graves (Graves younger than 60 years, graves older than 60 years, but younger than 100 years, graves older than 100 years, graves of victims of conflict or of individuals of royal descent).

Graves are situated near the site earmarked for development.

Northern point:

-27.0250930  
30.0872370

Southern point:

-27.0254490  
30.0873380

## **2.3 ORIGINAL LANDSCAPE**

Farming activities have altered the original landscape in the study area.

## **2.4 INTANGIBLE HERITAGE**

The intangible heritage of the greater study area can be found in the stories of past and present inhabitants.

### 3. CATEGORIES OF HERITAGE VALUE (ACT 25 OF 1999)

*The National Heritage Resources Act (Act 25 of 1999) identifies the following categories of value under section 3(1) and (2) of the Act under the heading "National Estate":*

“3 (1) For the purpose of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.

(2) Without limiting the generality of subsection (1), the national estate may include-

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites;
- (g) graves and burial grounds, including-
  - (i) ancestral graves;
  - (ii) royal graves and graves of traditional leaders;
  - (iii) graves of victims of conflict;
  - (iv) graves of individuals designated by the Minister by notice in the Gazette
  - (v) historical graves and cemeteries; and
  - (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- (h) sites of significance relating to the history in South Africa;
- (i) movable objects, including-
  - (i) objects recovered from the soil or waters of South Africa including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
  - (ii) objects to which oral traditions are attached or which are associated with living heritage;
  - (iii) ethnographic art and objects;
  - (iv) military objects
  - (v) objects of decorative or fine art;
  - (vi) objects of scientific or technological interests; and

- (vii) books, records, documents, photographic positives and negatives, graphic, film or video material 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).
- (3) Without limiting the generality of the subsections (1) and (2), 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 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 and 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."

### **3.1 HERITAGE VALUE OF WEIGHED AGAINST CULTURAL SIGNIFICANCE CATEGORIES**

#### **3.1.1 Spiritual value**

During the site visit/field work no indication of any spiritual activity was observed on/near the proposed site. Thus no sites of spiritual value will be impacted on by the proposed project.

#### **3.1.2 Scientific value**

No sites of scientific value were observed on or near the site earmarked for development.

#### **3.1.3 Historical value**

No historical value associated with the site could be found in primary and secondary sources.

#### **3.1.4 Aesthetic value**

No heritage item with exceptional aesthetic (architectural) value was identified in the study area.

### **3.1.5 Social value**

Social value is attributed to sites that are used by the community for recreation and formal and informal meetings regarding matters that are important to the community. These sites include parks, community halls, sport fields etc. None of the said evident in the immediate study area.

## **3.2 SPECIFIC CATEGORIES INVESTIGATED AS PER SECTION 3 (1) AND (2) OF THE NATIONAL HERITAGE LEGISLATION (ACT 25 OF 1999)**

### **3.2.1 Does the site/s provide the context for a wider number of places, buildings, structures and equipment of cultural significance?**

The study area does not provide context for a wider number of places, buildings, structures and equipment of cultural significance. The reason being the low density of heritage items in the study area.

### **3.2.2 Does the site/s contain places to which oral traditions are attached or which are associated with living heritage?**

Places to which oral traditions are attached or associated with living heritage are usually find in conjunction with traditional settlements and villages which still practises age old traditions. None of these are evident near or on the proposed site.

### **3.2.3 Does the site/s contain historical settlements?**

No historical settlements are located on or near the proposed site.

### **3.2.4 Does the site/s contain landscapes and natural features of cultural significance?**

Due to infra-structure development and farming activities the original character of the landscape has been altered significantly in the study area. There the site does not contain natural features of cultural significance.

### **3.2.5 Does the site/s contain geological sites of cultural importance?**

Geological sites of cultural importance include meteorite sites (Tswaing Crater and Vredefort Dome), fossil sites (Karoo and Krugersdorp area), important mountain ranges or ridges (Magaliesburg, Drakensberg etc.). The proposed site is not located in an area known for sites of this importance.

### **3.2.6 Does the site/s contain a wide range of archaeological sites?**

The proposed site does not contain any surface archaeological deposits, a possible reason is previous infrastructure development activities in the greater study area.



The possibility of sub-surface findings always exists and should be taken into consideration in the Environmental Management Programme.

If sub-surface archaeological material is discovered work must stop and a heritage practitioner preferably an archaeologist contacted to assess the find and make recommendations.

**3.2.7 Does the site/s contain any marked graves and burial grounds?**

Graves are situated near the site earmarked for development.



**Figure 8: Graves situated close to site**



**Figure 9: Graves situated close to site**

The possibility of graves not visible to the human eye always exists and this should be taken into consideration in the Environmental Management Plan.

It is important to note that all graves and cemeteries are of high significance and are protected by various laws. Legislation with regard to graves includes the National Heritage Resources Act (Act 25 of 1999) whenever graves are 60 years and older. Other legislation with regard to graves includes those when graves are exhumed and relocated, namely the Ordinance on Exhumations (no 12 of 1980) and the Human Tissues Act (Act 65 of 1983 as amended).

If sub-surface graves are discovered work should stop and a professional preferably an archaeologist contacted to assess the age of the grave/graves and to advice on the way forward.

### **3.2.8 Does the site/s contain aspects that relate to the history of slavery?**

This is not an area associated with the history of slavery like the Western Cape Province.

**3.2.9 Can the place be considered as a place that is important to the community or in the pattern of South African history?**

In primary and secondary sources the proposed site is not described as important to the community or in the pattern of South African history.<sup>6</sup>

**3.2.10 Does the site/s embody the quality of a place possessing uncommon or rare endangered aspects of South Africa's natural and cultural heritage?**

The proposed site does not possess uncommon, rare or endangered aspects of South Africa's natural and cultural heritage. These sites are usually regarded as Grade 1 or World Heritage Sites.

**3.2.11 Does the site/s demonstrate the principal characteristics of South Africa's natural or cultural places?**

The proposed site does not demonstrate the principal characteristics of South Africa's natural or cultural places. These characteristics are usually associated with aesthetic significance.

**3.2.12 Does the site/s exhibit particular aesthetic characteristics valued by the community or cultural groups?**

This part of the greater study area does not exhibit particular aesthetic characteristics valued by the community or cultural groups. The reason being the low density of heritage buildings and structures located in the greater study area.

**3.2.13 Does the site/s contain elements, which are important in demonstrating a high degree of creative technical achievement?**

The site does not contain elements which are important in demonstrating a high degree of creative technical achievement. Reason being none of the above are evident on site.

**3.2.14 Does the site/s have strong and special associations with particular communities and cultural groups for social, cultural and spiritual reasons?**

The proposed site does not have a strong or special association with particular communities and cultural groups for social, cultural and spiritual reasons. No comment in this regard was received during the public participation period.

**3.2.15 Does the site/s have a strong and special association with the life or work of a person, group or organisation?**

No indication of the above could be found in primary and secondary research sources.<sup>7</sup>

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<sup>6</sup> Standard Encyclopaedia of Southern Africa and the TAB database at the National Archives of South Africa;

J.S. Bergh (red), Geskiedenisatlas van Suid-Afrika. Die Vier Noordelike Provinsies.

<sup>7</sup> Dictionary of South African Biography (vol I-V) and the TAB database at the National Archives of South Africa

#### **4. RECOMMENDATIONS**

- There are no visible restrictions or negative impacts in terms of heritage associated with the site earmarked for development.
- If the layout of the proposed development is altered and the graves situated near the development site will be impacted on, suitable mitigation measures must be put in place.
- In terms of heritage this project can proceed.
- Graves close to the site must allow a 50m buffer from development and must be fenced off.
- The discovery of subsurface archaeological and/or historical material as well as graves must be taken into account in the Environmental Management Programme. See 3.2.6 and 3.2.7.

#### **5. WAY FORWARD**

Submit this report as a Section 38 application in term of the National Heritage Resources Act (Act 25 of 1999) to the Provincial Heritage Resources Authority of Mpumalanga for comment/approval.