



## Heritage Impact Assessment

**H  
E  
R  
I  
T  
A  
G  
E**

Bartlet Eggs development on the  
farm Vlakfontein 39 IQ, Koster,  
North West Province

Version 1.0

**U  
N  
I  
T**

25 June 2009

**Professional Grave  
Solutions (Pty)  
Limited**

(Registration No: 2003/008940/07)

Bergarend St 906, Waverley, Pretoria, 0186

PO Box 32542, Totiusdal, 0134 South Africa

TEL: +27 12 332 5305,

FAX: 0866 580199

**ACKNOWLEDGEMENT OF RECEIPT**

**CLIENT:** Bartlet Eggs

**CONTACT PERSON:** Mr. Peter Bartlet, Tel: 0734154118, email: peter@bartlet.co.za

**SIGNATURE:** \_\_\_\_\_

**LEADING CONSULTANT:** Professional Grave Solutions - Heritage Unit

**CONTACT PERSON:** Wouter Fourie

**SIGNATURE:** \_\_\_\_\_

**Copyright**

Copyright in all documents, drawings and records whether manually or electronically produced, which form part of the submission and any subsequent report or project document shall vest in PGS. None of the documents, drawings or records may be used or applied in any manner, nor may they be reproduced or transmitted in any form or by any means whatsoever for or to any other person, without the prior written consent of PGS.

The Client, on acceptance of any submission by PGS and on condition that the Client pays to Professional Grave Solutions (Pty) Ltd the full price for the work as agreed, shall be entitled to use for its own benefit and for the specified project only:

- i. The results of the project;
- ii. The technology described in any report ; and,
- iii. The recommendations delivered to the Client.

**EXECUTIVE SUMMARY**

Professional Grave Solutions - Heritage Unit was appointed by Bartlet Eggs to undertake a Phase 1 Heritage Impact Assessment that forms part of the Environmental Management Programme for the development sites on the farm Vlakfontein 39 IQ, Koster, North West Province.

During the survey one cemetery was identified. The following management and mitigation measures are recommended:

The site needs to be fenced with a sturdier fence for protection of the graves.

If the required mitigation measures are adhered there is no reason from a heritage view point why the project cannot be initiated.

***General***

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

## CONTENTS

1. INTRODUCTION.....	5
2. APPROACH AND METHODOLOGY.....	5
2.1 Project Description .....	5
2.2 Physical surveying.....	8
3. LEGISLATIVE REQUIREMENTS AND TERMINOLOGY .....	8
3.1 Legislation.....	8
3.2 Abbreviations and Terminology .....	9
4. ASSESSMENT CRITERIA.....	10
4.1 Impact.....	11
4.1.1 Nature and existing mitigation .....	11
4.2 Evaluation .....	11
4.2.1 Site Significance.....	11
4.2.2 Impact Rating .....	12
5. BACKGROUND OF AREA .....	13
5.1 Archaeological Background .....	13
6. SITES OF SIGNIFICANCE.....	16
6.1 Cemetery at development Site 1 .....	18
7. ASSUMPTIONS AND LIMITATIONS .....	21
8. LEGAL AND POLICY REQUIREMENTS .....	21
8.1 General principles.....	21
8.1 Graves and cemeteries .....	22
9. ASSESSMENT AND RECOMMENDATIONS .....	23
10. LIST OF PREPARES .....	23
11. REFERENCES.....	24
11.1 Archaeological Papers .....	24
11.2 Cultural Heritage Papers.....	24

## ANNEXURE

Annexure A – Heritage sites

### Figures

<i>Figure 1 – Layout map of development site, indicated by red squares .....</i>	<i>6</i>
<i>Figure 2 – Locality Map.....</i>	<i>7</i>
<i>Figure 3 - Western extension of Eastern Stream into the interior .....</i>	<i>15</i>
<i>Figure 4 – General view of site 1 .....</i>	<i>16</i>
<i>Figure 5 – General view of site 2 .....</i>	<i>17</i>
<i>Figure 6 – General view of site 3 indicated by red block.....</i>	<i>17</i>
<i>Figure 7 – General view of site 4 .....</i>	<i>18</i>
<i>Figure 8 – General view of cemetery .....</i>	<i>19</i>
<i>Figure 9 – Headstone vandalised .....</i>	<i>19</i>
<i>Figure 10 – Foundations of workers housing.....</i>	<i>20</i>

## **1. INTRODUCTION**

Professional Grave Solutions - Heritage Unit was appointed by Bartlet Eggs to undertake a Phase 1 Heritage Impact Assessment that forms part of the Environmental Management Programme for the development sites on the farm Vlakfontein 39 IQ, Koster, North West Province.

The aim of the study is to identify all heritage sites, document, and assess their importance within Local, Provincial and National context. From this we aim to assist the developer in managing the discovered heritage 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.

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.

## **2. APPROACH AND METHODOLOGY**

### **2.1 Project Description**

The applicant proposes the establishment egg laying chicken batteries on specific sections of the farm Vlakfontein 39 IQ. Refer to Figure 1 for localities indicated on the map. The area of impact will be less than 1 hectare in each of the four positions.



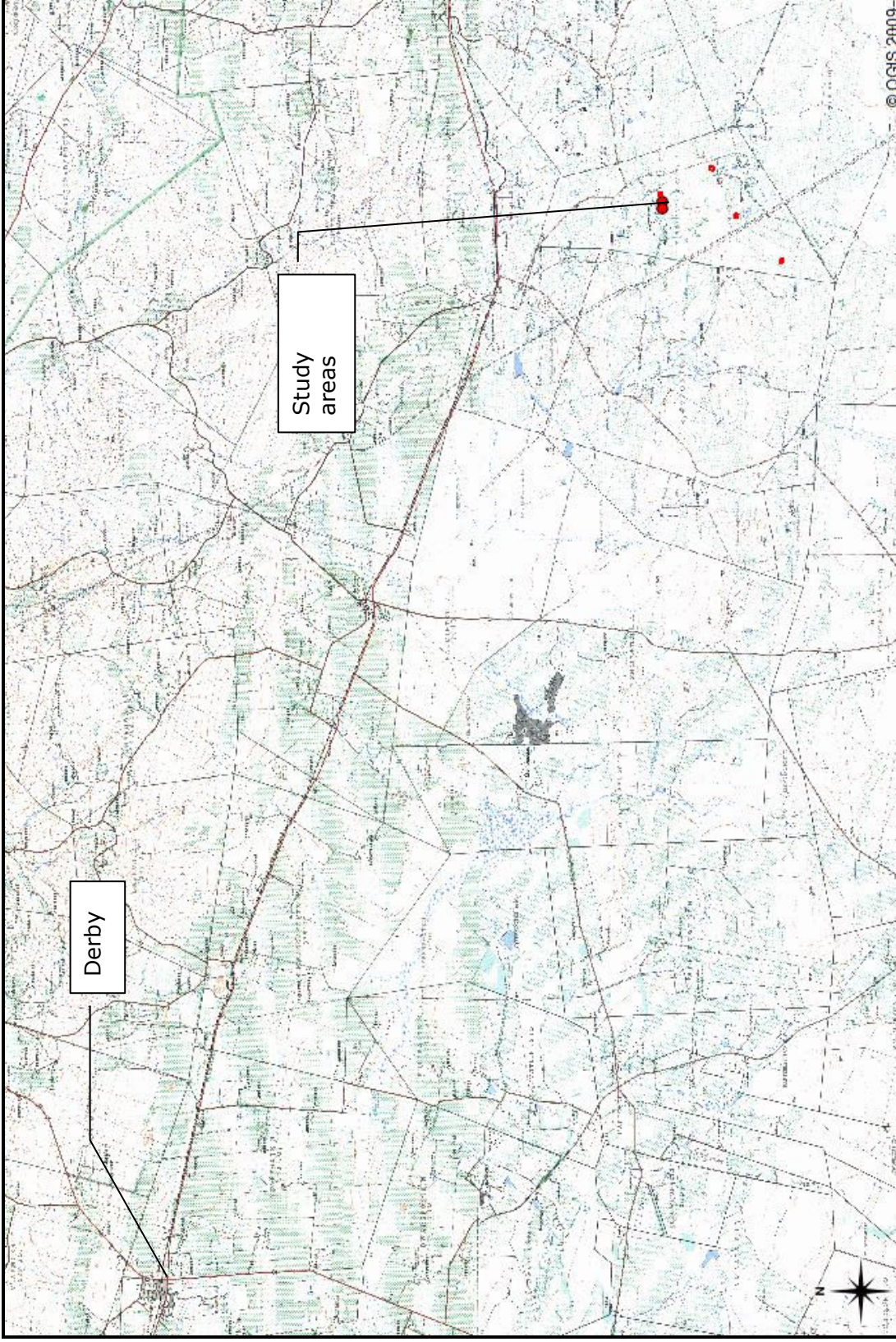


Figure 2 – Locality Map

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

## **2.2 Physical surveying**

The project area comprises of approximately 16 ha. Due to the nature of cultural remains, the majority that occur below surface, a physical walk through of the study area was conducted. A controlled-exclusive surface survey was conducted over a period of two days, by means of vehicle and extensive surveys on foot by PGS. 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. LEGISLATIVE REQUIREMENTS AND TERMINOLOGY**

### **3.1 Legislation**

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation:

- i. National Environmental Management Act (NEMA) Act 107 of 1998;
- ii. National Heritage Resources Act (NHRA) Act 25 of 1999;
- iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002;  
and
- iv. Development Facilitation Act (DFA) Act 67 of 1995

The following sections in each Act refer directly and indirectly to the identification, evaluation and assessment of cultural heritage resources.

- i. National Environmental Management Act (NEMA) Act 107 of 1998
  - a. Basic Environmental Assessment (BEA) – Section (23)(2)(d)
  - b. Environmental Scoping Report (ESR) – Section (29)(1)(d)
  - c. Environmental Impacts Assessment (EIA) – Section (32)(2)(d)
  - d. Environmental Management Plan (EMP) – Section (34)(b)
- ii. National Heritage Resources Act (NHRA) Act 25 of 1999
  - a. Protection of Heritage resources – Sections 34 to 36; and



- b. Heritage Resources Management – Section 38
- iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
  - a. Section 39(3)
- iv. Development Facilitation Act (DFA) Act 67 of 1995
  - a. The GNR.1 of 7 January 2000: Regulations and rules in terms of the Development Facilitation Act, 1995. Section 31.

### **3.2 Abbreviations and Terminology**

ASAPA:	Association of South African Professional Archaeologists
CRM:	Cultural Resource Management
DEAT:	Department of Environmental Affairs and Tourism
DWAF:	Department of Water Affairs and Forestry
EIA practitioner:	Environmental Impact Assessment Practitioner
EIA:	Environmental Impact Assessment
EIA:	Early Iron Age
ESA:	Early Stone Age
GPS:	Global Positioning System
HIA:	Heritage Impact Assessment
I&AP:	Interested & Affected Party
LSA:	Late Stone Age
LIA:	Late Iron Age
MSA:	Middle Stone Age
MIA:	Middle Iron Age
NEMA:	National Environmental Management Act
NHRA:	National Heritage Resources Act
PHRA:	Provincial Heritage Resources Agency
PSSA:	Palaeontological Society of South Africa
ROD:	Record of Decision
SAHRA:	South African Heritage Resources Agency

### ***Archaeological resources***

This includes:

- i. 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;
- ii. 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;

- iii. 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 in the Maritimes Zones Act, 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;
- iv. features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

### ***Cultural significance***

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

### ***Development***

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

- i. construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- ii. carrying out any works on or over or under a place;
- iii. subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- iv. constructing or putting up for display signs or boards;  
any change to the natural or existing condition or topography of land;
- v. any removal or destruction of trees, or removal of vegetation or topsoil

### ***Heritage resources***

This means any place or object of cultural significance

## **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 against impacts.

#### 4.2 Evaluation

##### 4.2.1 Site Significance

Site significance classification standards prescribed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used for the purpose of this report.

<b>FIELD RATING</b>	<b>GRADE</b>	<b>SIGNIFICANCE</b>	<b>RECOMMENDED MITIGATION</b>
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A	-	High / Medium	Mitigation before destruction

(GP.A)		Significance	
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction
Generally Protected C (GP.C)	-	Low Significance	Destruction

#### 4.2.2 Impact Rating

Each impact identified will be assessed in terms of probability (likelihood of occurring), extent (spatial scale), intensity (severity) and duration (temporal scale). To enable a scientific approach to the determination of the impact significance (importance), a numerical value will be linked to each rating scale. The sum of the numerical values will define the significance. The following criteria will be applied to the impact assessment for the project.

**Table 1: Probability**

Category	Rating	Description
Definite	3	More than 90 percent sure of a particular factor of the likelihood of that impact occurring
Probable	2	70 to 89 percent sure of a particular factor of the likelihood of that impact occurring
Possible	1	40 to 69 percent sure of a particular factor of the likelihood of that impact occurring
Improbable	0	Less than 40 percent sure of a particular factor of the likelihood of that impact occurring

**Table 2: Extent**

Category	Rating	Description
Site	1	Immediate project site
Local	2	Up to 5 km from the project site
Regional	3	20 km radius from the project site
Provincial	4	North West Province
National	5	South African
International	6	Neighbouring countries/overseas

**Table 3: Duration**

Category	Rating	Description
Very short-term	1	Less than 1 year
Short-term	2	1 to 4 years

Medium-term	3	5 to 10 years
Long-term	4	11 to 15 years
Very long-term	5	Greater than 15 years
Permanent	6	Permanent

**Table 4: Intensity**

Category	Rating	Description
Very low	0	Where the impact affects the environment in such a way that natural, cultural and social functions are not affected
Low	1	Where the impact affects the environment in such a way that natural, cultural and social functions are only marginally affected
Medium	2	Where the affected environment is altered but natural, cultural and social function and processes continue albeit in a modified way
High	3	Where natural, cultural or social functions or processes are altered to the extent that they will temporarily cease
Very high	4	Where natural, cultural or social functions or processes are altered to the extent that they will permanently cease

**Table 5: Significance Rating**

Score	Significance Rating
2 – 4	Low
5 – 7	Low to Moderate
8 – 10	Moderate
11 - 13	Moderate to High
14 – 16	High
17 – 19	Very High

## 5. BACKGROUND OF AREA

### 5.1 Archaeological Background

The Stone Age is divided in Earlier; Middle and Later 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.

The Iron Age is characterised by the ability of these early people to manipulate and work Iron ore into implements that assisted them in creating a favourable environment to make a better living. Iron is a very hard metal to work with compared to gold and copper that have lower melting temperatures and therefore are easier to forge. A draw back of gold and copper are the occurrence of ore, which is relatively limited compared to iron.

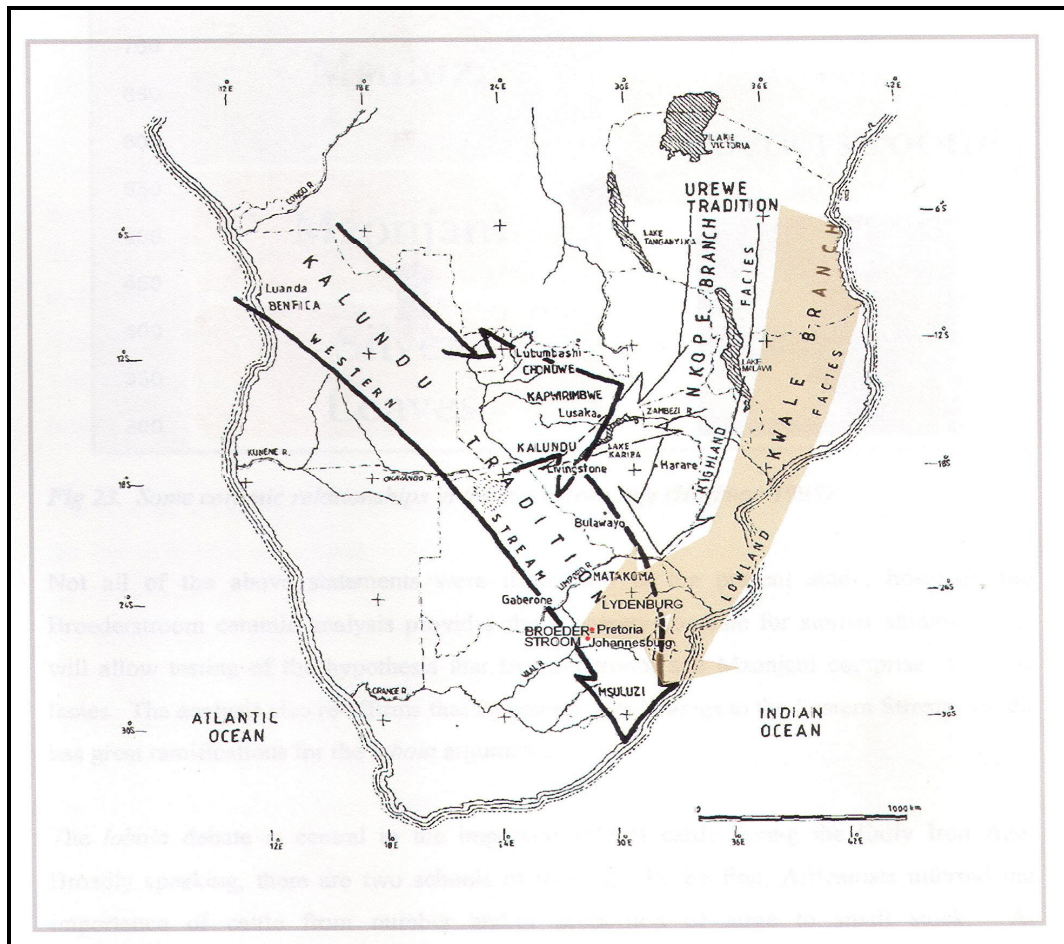
In Africa, we proceeded technologically directly from the Stone Age in to the Iron Age where as in Eurasia there was a prolonged Copper and Bronze Age preceding the Iron Age. In southern Africa, metallurgical techniques made their first appearance in a rather advanced state that permitted the smelting of Copper and Iron directly after a Stone Age economic way of live.

This scenario provides a strong argument that metallurgical technology was introduced from elsewhere and did not develop locally. To effectively smelt iron oxide, ore by reduction requires a temperature of at least 1100°C that is 400°C below the metals melting point. To obtain a temperature this high was probably unattainable in ancient furnaces. But the prolonged heating of ore in contact with abundant charcoal, needed to obtain a sufficiently high temperature for the reduction of the oxide ores, enable the iron to obtain enough carbon to make it mild steel. If this mild steel was repeatedly heated and hammered during the forge process, it will harden.

### ***Early Iron Age***

Early in the first millennium AD, there seem to be a significant change in the archaeological record of the greater part of eastern and southern Africa lying between the equator and Natal. This change is marked by the appearance of a characteristic ceramic style that belongs to a single stylistic tradition. These Early Iron Age people practised a mixed farming economy and had the technology to work metals like iron and copper.

A meaningful interpretation of the Early Iron Age has been hampered by the uneven distribution of research conducted so far; this can be partly attributed to the poor preservation of these early sites. *Figure 2* demonstrates the high frequency of Iron Age sites that could be expected in the proposed development area.



*Figure 3 - Western extension of Eastern Stream into the interior*

### **Historical Timeframe**

Discussion with the local farmer Mr Botha indicated that the area towards sites 2-4 was very active during the Anglo Boer War. They indicated the presence of two British soldier graves on a ridge to the west of the sites 2-4.

Although the farm name is Vlakfontein 37 IQ it is not the site of the famous battle of Vlakfontein that occurred on the farm Vlakfontein 373 JQ closer to Derby on the Magalies-Koster Road.

## 6. SITES OF SIGNIFICANCE

The study area is located on topographical sheet 2627AB.

The study areas were identified as GPS coordinates provided by the client. Each coordinate is the position of a proposed chicken breeding battery that will cover an area of at most 1 hectare in each case. The survey of each point covered an area of at least two hectares around each point.

All the proposed development sites have previously been disturbed by farming activities and in the case of site 2 -4 the site have been ploughed and is currently utilised for the growing of feed.



*Figure 4 – General view of site 1*





*Figure 5 – General view of site 2*



*Figure 6 – General view of site 3 indicated by red block*



*Figure 7 – General view of site 4*

## **6.1 Cemetery at development Site 1**

### **GPS Coordinates**

S26 03 05.9 E27 20 50.9

### **Site Description**

The site consists of 15 graves all aligned east-west, arranged in 3 rows running north to south. All the graves have formal headstone and is the family cemetery of the Kleingeld and Oosthuizen families. The graves date between 1924 and 1996. Some of the headstone have been vandalised.



*Figure 8 – General view of cemetery*



*Figure 9 – Headstone vandalised*

The cemetery is situated some 200 metres to the west of the proposed locality of development site 1. No impact is foreseen on the cemetery.

Associated with the cemetery are the foundations of farm workers' housing and a cement dam.



*Figure 10 – Foundations of workers housing*

<b>Impact Rating</b>	<b>Field Rating</b>	<b>Probability</b>	<b>Extent</b>	<b>Duration</b>	<b>Intensity</b>	<b>Mitigation</b>
4	GP.A	1	1	1	1	None

***Low impact if monitored.***

*Mitigation:*

It is recommended that the area be demarcated with a more sturdy fence.

## **7. ASSUMPTIONS AND LIMITATIONS**

Not subtracting in any way from the comprehensiveness of the fieldwork undertaken, it is necessary to realise that the archaeological and heritage resources located during the fieldwork do not necessarily represent all the archaeological and heritage resources located there. This may be due to various reasons, including the subterranean nature of some archaeological sites and dense vegetation cover. As such, should any heritage features and/or objects not included in the present inventory be located or observed, a heritage specialist must immediately be contacted. Such observed or located heritage features and/or objects may not be disturbed or removed in any way until such time that the heritage specialist has been able to make an assessment as to the significance of the site (or material) in question. This is true for graves and cemeteries as well.

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

### **8.1 General principles**

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 paleontological sites, materials, and meteorites are the source of our understanding of the evolution of the earth, life on earth and the history of people. In the new legislation, permits are required to damage, destroy, alter, or disturb them. People who already possess material are required to register it. The management of heritage resources are integrated with environmental resources and this means that before development takes place heritage resources are assessed and, if necessary, rescued.

In addition to the formal protection of culturally significant graves, all graves, which are older than 60 years and are not in a cemetery (such as ancestral graves in rural areas), are protected. The legislation protects the interests of communities that have interest in the graves: they may be consulted before any disturbance takes place. The graves of victims of conflict and those associated with the liberation struggle will be identified, cared for, protected and memorials erected in their honour. Anyone who intends to undertake a development must notify the heritage resource authority and if there is reason to believe that heritage resources will be affected, an impact assessment report must be compiled at the developer's cost. Thus developers will be able to proceed

without uncertainty about whether work will have to be stopped if a heritage resource is discovered.

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

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

- objects recovered from the soil or waters of South Africa, including archaeological and paleontological 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 National Heritage Resources Act (Act No. 25 of 1999), provisions are made that deal with, and offer protection, to all historic and pre-historic cultural remains, including graves and human remains.

### **8.1 Graves and cemeteries**

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.

## **9. ASSESSMENT AND RECOMMENDATIONS**

*A heritage map is provided in **Annexure A***

During the survey one cemetery was identified. The following management and mitigation measures are recommended:

The site needs to be fenced with a sturdier fence for protection of the graves.

If the required mitigation measures are adhered there is no reason from a heritage view point why the project cannot be initiated.

### **General**

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

## **10. LIST OF PREPARES**

Wouter Fourie, BA (Hon) Archaeology (UP)

## **11. REFERENCES**

### **11.1 Archaeological Papers**

EVERS, T.M. Sotho Tswana and Moloko Settlement Patterns and the Bantu Cattle Pattern.

HUFFMAN, T.N. 2002. Gautrain Archaeological Assessment. Archaeological Resource Management. WITS

KLEIN, R.G. 1984. Southern African Prehistory and Paleoenvironments. A.A. Balkema.

### **11.2 Cultural Heritage Papers**

Australia ICOMOS. The Burra Charter (The Australian ICOMOS charter for places of cultural significance). 2002.

Standard and Guidance for Archaeological Desk-Based Assessment. 1994.

International Council of Monuments & Site Documents. Conventions, Charters and Guidelines. 2002.

Documents on Cultural Heritage Protection. 2002.

International Council of Monuments & Site Documents. Guidelines to the Burra Charter: Conservation Policy. 1985.

International Council of Monuments & Site Documents. Guidelines to the Burra Charter: Cultural Significance. 1984.

Australian Historic Themes. A Framework for use in Heritage Assessment and Management. Australian Heritage Commission. 2001.



**ANNEXURE A:  
Heritage sites**

