

# **PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT**

**For**

**The Construction of Chicken  
Broiler Houses on a Portion  
of Portion 78 of the Farm  
Mezeg 77 JP, Zeerust, North  
West**

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**August 2019**

A Phase 1 Archaeological Impact Assessment for the Construction of Chicken Broiler Houses on a Portion of Portion 78 of the Farm Mezeg 77 JP, Zeerust, North West

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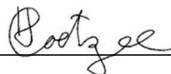
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Report No: ZeerustCBH\_AIA\_1708191

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I, Tobias Coetzee, declare that –

- I act as the independent specialist;
- I am conducting any work and activity relating to the proposed Chicken Broiler Houses in an objective manner, even if this results in views and findings that are not favourable to the client;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have the required expertise in conducting the specialist report and I will comply with legislation, regulations and any guidelines that have relevance to the proposed activity;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this declaration are true and correct.



\_\_\_\_\_  
Date: 23 August 2019

## Executive Summary

The author was appointed by Eko Environmental to undertake a Phase 1 Archaeological Impact Assessment for the construction of chicken broiler houses on a portion of Portion 78 of the Farm Mezeg 77 JP, Zeerust, North West Province. The demarcated study area is located to the northeast of Zeerust and east of Lekubu. The aim of the study is to determine the scope of archaeological resources that could be impacted on by the proposed construction of the chicken broiler houses.

The only visible material remains within the demarcated study area are that of the irrigation system previously used. These remains do not appear to exceed 60 years of age and are not considered significant from a heritage perspective. Subject to adherence of the recommendations and approval by SAHRA, the development of the proposed chicken broiler houses may continue. Should skeletal remains be exposed during development and construction phases, all activities must be suspended and the relevant heritage resources authority contacted (See National Heritage and Resources Act, 25 of 1999 section 36 (6)). Also, should culturally significant material be discovered during the course of the said development, all activities must be suspended pending further investigation by a qualified archaeologist.

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# 1. Project Background

## 1.1 Introduction

Eko Environmental appointed the author to undertake a Phase 1 Archaeological Impact Assessment for the construction of chicken broiler houses for the production of poultry on a portion of Portion 78 of the Farm Mezeg 77 JP, Zeerust, North West Province (**Figures 1 – 2**). Lekubu is located about 16km to the west of the study area and Zeerust 24km to the southwest. The purpose of this study is to examine the demarcated portion in order to determine if any archaeological resources of heritage value will be impacted by the proposed construction of the chicken broiler houses, as well as to archaeologically contextualise the general study area. The aim of this report is to provide the developer with information regarding the location of heritage resources on the demarcated portion.

In the following report, I discuss the implication for the construction of chicken broiler houses on the demarcated portion of Portion 78 of the Farm Mezeg 77 JP with regard to heritage resources. The shape of the demarcated portion is rectangular and is located within a field previously utilised for wheat cultivation. The legislation section included serves as a guide towards the effective identification and protection of heritage resources and will apply to any such material unearthed during development and construction phases within the demarcated study area.

## 1.2 Legislation

The South African Heritage Resources Agency (SAHRA) aims to conserve and control the management, research, alteration and destruction of cultural resources of South Africa and to prosecute if necessary. It is therefore crucially important to adhere to heritage resource legislation contained in the Government Gazette of the Republic of South Africa (Act No.25 of 1999), as many heritage sites are threatened daily by development. Conservation legislation requires an impact assessment report to be submitted for development authorisation that must include an AIA if triggered.

AIA's should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources that might occur in areas of development and (b) make recommendations for protection or mitigation of the impact of the sites.

### 1.2.1 The EIA and AIA processes

Phase 1 Archaeological Impact Assessments generally involve the identification of sites during a field survey with assessment of their significance, the possible impact that the development might have, and relevant recommendations.

All Archaeological Impact Assessment reports should include:

- a. Location of the sites that are found;
- b. Short descriptions of the characteristics of each site;
- c. Short assessments of how important each site is, indicating which should be conserved and which mitigated;
- d. Assessments of the potential impact of the development on the site(s);
- e. In some cases a shovel test, to establish the extent of a site, or collection of material, to identify the associations of the site, may be necessary (a pre-arranged SAHRA permit is required); and
- f. Recommendations for conservation or mitigation.

This AIA report is intended to inform the client about the legislative protection of heritage resources and their significance and make appropriate recommendations. It is essential to also provide the heritage authority with sufficient information about the sites to enable the authority to assess with confidence:

- a. Whether or not it has objections to a development;
- b. What the conditions are upon which such development might proceed;
- c. Which sites require permits for mitigation or destruction;
- d. Which sites require mitigation and what this should comprise;
- e. Whether sites must be conserved and what alternatives can be proposed to relocate the development in such a way as to conserve other sites; and
- f. What measures should or could be put in place to protect the sites which should be conserved.

When a Phase 1 AIA is part of an EIA, wider issues such as public consultation and assessment of the spatial and visual impacts of the development may be undertaken as part of the general study and may not be required from the archaeologist. If, however, the Phase 1 project forms a major component of an AIA it will be necessary to ensure that the study addresses such issues and complies with Section 38 of the National Heritage Resources Act.

## 1.2.2 Legislation regarding archaeology and heritage sites

*National Heritage Resource Act No.25 of April 1999*

Buildings are among the most enduring features of human occupation, and this definition therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Farming Community settlements. The Act identifies heritage objects as:

- 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;
- any other prescribed category.

With regards to activities and work on archaeological and heritage sites this Act states that:

*“No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.” (34. [1] 1999:58)*

and

*“No person may, without a permit issued by the responsible heritage resources authority:*

- (a) *destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*



- (b) *destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (c) *trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or*
- (d) *bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.”(35. [4] 1999:58)*

and

*“No person may, without a permit issued by SAHRA or a provincial heritage resources authority:*

- (a) *destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (b) *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;*
- (c) *bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals.” (36. [3] 1999:60)*

On the development of any area the gazette states that:

*“...any person who intends to undertake a development categorised as:*

- (a) *the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) *the construction of a bridge or similar structure exceeding 50m in length;*
- (c) *any development or other activity which will change the character of a site-*
  - i. *exceeding 5000m<sup>2</sup> in extent; or*
  - ii. *involving three or more existing erven or subdivisions thereof; or*
  - iii. *involving three or more erven or divisions thereof which have been consolidated within the past five years; or*

- iv. *the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*
- (d) *the re-zoning of a site exceeding 10000m<sup>2</sup> in extent; or*
- (e) *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.” (38. [1] 1999:62-64)*

and

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

- (a) *The identification and mapping of all heritage resources in the area affected;*
- (b) *an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;*
- (c) *an assessment of the impact of the development on such heritage resources;*
- (d) *an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;*
- (e) *the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
- (f) *if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and*
- (g) *plans for mitigation of any adverse effects during and after the completion of the proposed development.” (38. [3] 1999:64)*

#### *Human Tissue Act and Ordinance 7 of 1925*

The Human Tissues Act (65 of 1983) and Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities. Graves 60 years or older fall under the jurisdiction of the National Heritage Resources Act as well as the Human Tissues Act, 1983.

## 2. Study Area and Project Description

### 2.1 Location & Physical Environment

The closest town to the study area is Lekubu, which is located about 16km west of the demarcated study area, followed by Zeerust 24km to the southwest (**Figure 1**). The study area falls within the Ngaka Modiri District Municipality and the Ramotshere Moiloa Local Municipality in the North West Province. In terms of vegetation, the study area falls within the Savanna Biome, Central Bushveld Bioregion and Zeerust Thornveld vegetation unit. This vegetation unit has a conservation status of least threatened with a conservation target of 19%. Less than 4% is conserved in statutory and is spread between four reserves, including the Pienaar and Marico Bushveld Reserves. Zeerust Thornveld stretches from the flats near the Lobatsi River in the west, via Zeerust, Groot Marico and Mabaalstad to the flats between Pilanesberg and the western end of the Magaliesberg. About 16% of this vegetation unit has been transformed by cultivation and urban built-up. Although no serious alien invasive plant species are reported, species such as *Cereus jamacaru* occur in scattered areas. Erosion associated with this vegetation unit vary between low and very low (Mucina & Rutherford 2006).

The average elevation for Zeerust Thornveld varies between 1000 and 1250 MASL (Mucina & Rutherford 2006). The average elevation of the project area is 1141 MASL and slopes very gently from the elevated southern section towards the lower northern area.

The study area falls within the summer rainfall region and the average annual rainfall is roughly 439mm per year. The average maximum day temperatures for the study area range from 19.4 °C in June to 30.8°C in January. The lowest temperatures occur during July when an average of 0.6°C is reached during the night (SA Explorer accessed 19/08/2019).

The study area falls within the A31J Quaternary Catchment of the Groot Marico/Molatedi Dam main river system. The closest perennial river to the study area is the Klipspruit that flows 12km to the west of the study area. The Klein Marico perennial river flows 13km to the southeast of the study area. A non-perennial river from the Sandsloot River, however, runs 61m to the north of the study area.

Historical topographical maps indicate that the demarcated portion was utilised for cultivated land, and seems to have been the case for the surrounding areas as well. Apart from the agricultural fields, some structures are visible to the south of the demarcated study area that are likely to date to the time before 1964.

## 2.2 Project description

The demarcated portion is earmarked for the construction of eight chicken broiler houses, each with a maximum capacity of 48 000 chickens (**Table 1 & Figure 2**). The planned development extent is indicated on **Figure 3** and is roughly 3ha in size and will have to be cleared prior to construction.

Other infrastructure to consider relate to electricity, water and storm water. Since the farm already has access to electricity, the proposed site will receive electricity from the electrical infrastructure already present on the farm. In terms of water, the proposed infrastructure will draw water from the registered borehole on the farm to supply the chickens with water. Also, storm water will be management around the site by diverting the water to enter natural drainage patterns.

**Table 1:** Property name & coordinates

| Property    | Portion | Map Reference (1:50 000) | Coordinates                   |
|-------------|---------|--------------------------|-------------------------------|
| Mezeg 77 JP | 78      | 2526 AD                  | S: -25.367293<br>E: 26.251352 |

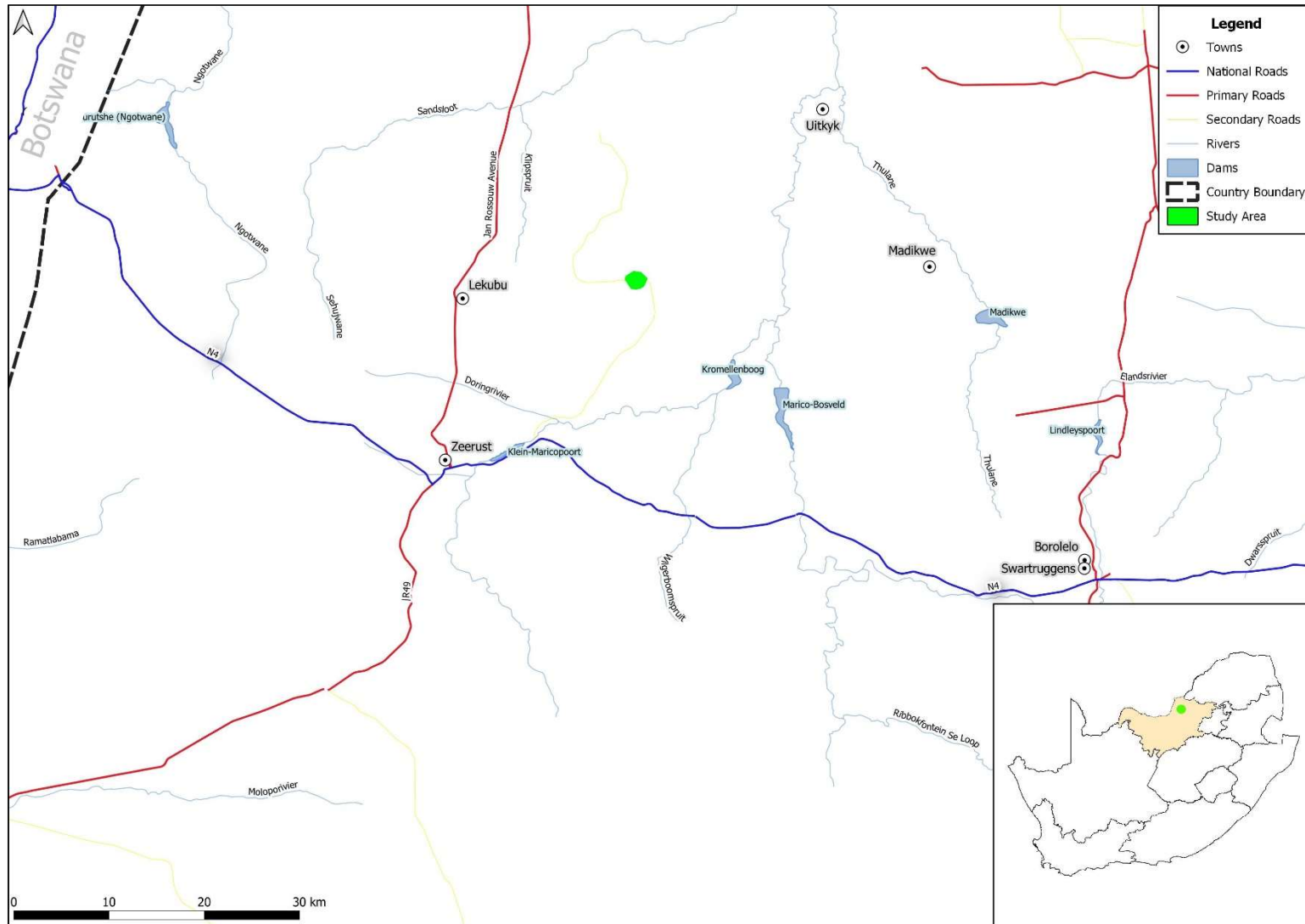


Figure 1: Regional and Provincial location of the study area.

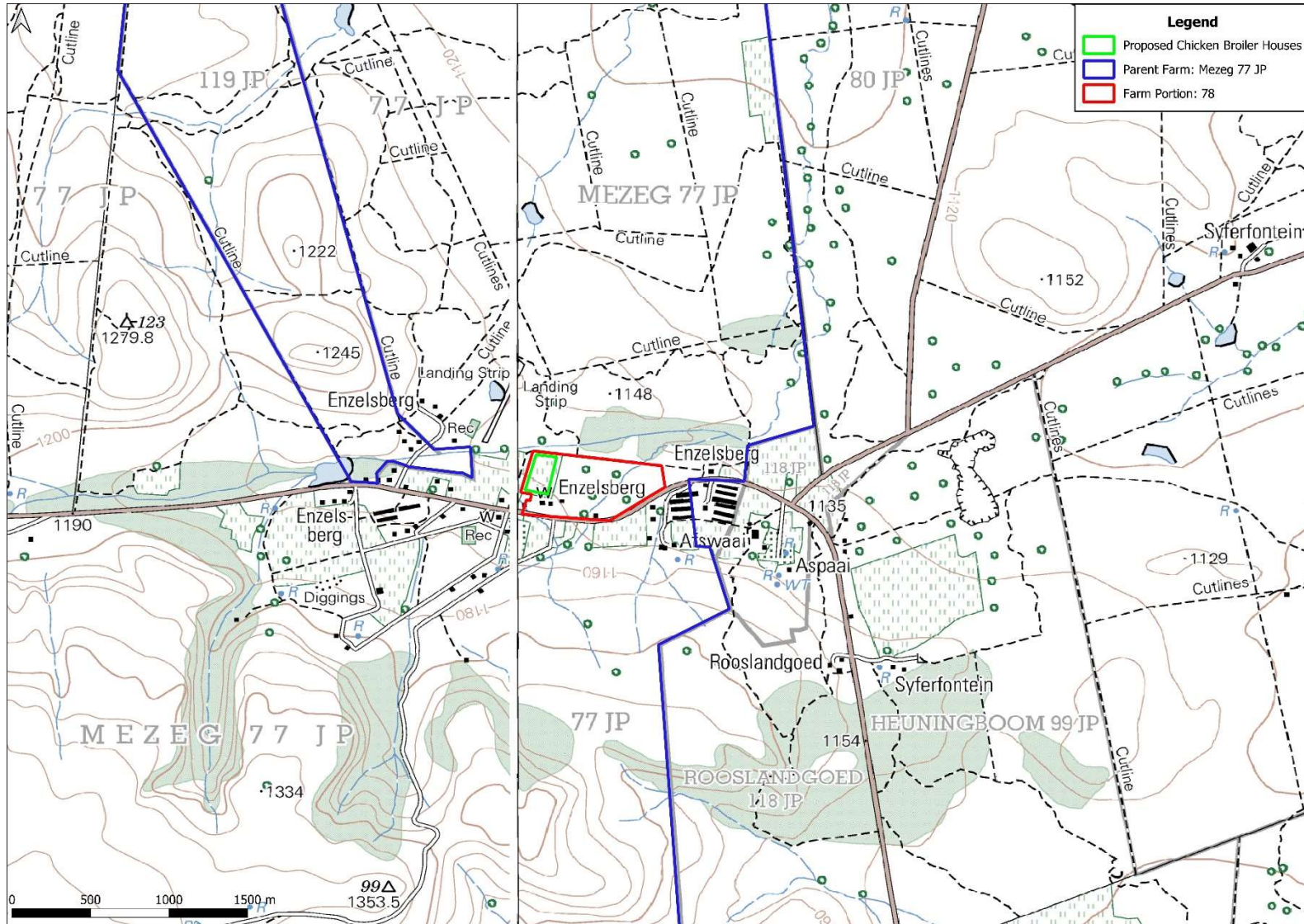


Figure 2: Segment of SA 1: 50 000 2526 AD indicating the study area.





Figure 3: Proposed development extent (Provided by Eko Environmental).

### 3. Archaeological Background

Southern African archaeology is broadly divided into the Early, Middle and Later Stone Ages; Early, Middle and Later Iron Ages; and Historical or Colonial Periods. This section of the report provides a general background to archaeology in South Africa and focuses on more site-specific elements where relevant.

#### 3.1 The Stone Age

The earliest stone tool industry, the Oldowan, was developed by early human ancestors which were the earliest members of the genus *Homo*, such as *Homo habilis*, around 2.6 million years ago. It comprises tools such as cobble cores and pebble choppers (Toth & Schick 2007). Archaeologists suggest these stone tools are the earliest direct evidence for culture in southern Africa (Clarke & Kuman 2000). The advent of culture indicates the advent of more cognitively modern hominins (Mitchell 2002: 56, 57)

The Acheulean industry completely replaced the Oldowan industry. The Acheulian industry was first developed by *Homo ergaster* between 1.8 to 1.65 million years ago and lasted until around 300 000 years ago. Archaeological evidence from this period is also found at Swartkrans, Kromdraai and Sterkfontein. The most typical tools of the ESA are handaxes, cleavers, choppers and spheroids. Although hominins seemingly used handaxes often, scholars disagree about their use. There are no indications of hafting, and some artefacts are far too large for it. Hominins likely used choppers and scrapers for skinning and butchering scavenged animals and often obtained sharp ended sticks for digging up edible roots. Presumably, early humans used wooden spears as early as 5 million years ago to hunt small animals.

Middle Stone Age artefacts started appearing about 250 000 years ago and replaced the larger Early Stone Age bifaces, handaxes and cleavers with smaller flake industries consisting of scrapers, points and blades. These artefacts roughly fall in the 40-100 mm size range and were, in some cases, attached to handles, indicating a significant technical advance. The first *Homo sapiens* species also emerged during this period. Associated sites are Klasies River Mouth, Blombos Cave and Border Cave (Deacon & Deacon 1999).

Although the transition from the Middle Stone Age to the Later Stone Age did not occur simultaneously across the whole of southern Africa, the Later Stone Age ranges from about 20 000 to 2000 years ago. Stone tools from this period are generally smaller, but were used to do the same job as those from previous periods; only in a different, more efficient way. The Later Stone Age is associated with: rock art, smaller stone tools (microliths), bows and arrows, bored stones, grooved stones, polished bone tools, earthenware pottery and beads. Examples of Later Stone Age sites are Nelson Bay Cave, Rose Cottage Cave and Boomplaas Cave (Deacon & Deacon 1999).



## 3.2 The Iron Age & Historical Period

The Early Iron Age marks the movement of farming communities into South Africa in the first millennium AD, or around 2500 years ago (Mitchell 2002:259, 260). These groups were agro-pastoralist communities that settled in the vicinity of water in order to provide subsistence for their cattle and crops. Archaeological evidence from Early Iron Age sites is mostly artefacts in the form of ceramic assemblages. The origins and archaeological identities of this period are largely based upon ceramic typologies. Some scholars classify Early Iron Age ceramic traditions into different “streams” or “trends” in pot types and decoration, which emerged over time in southern Africa. These “streams” are identified as the Kwale Branch (east), the Nkope Branch (central) and the Kalundu Branch (west). Early Iron Age ceramics typically display features such as large and prominent inverted rims, large neck areas and fine elaborate decorations. This period continued until the end of the first millennium AD (Mitchell 2002; Huffman 2007). Some well-known Early Iron Age sites include the Lydenburg Heads in Mpumalanga, Happy Rest in the Limpopo Province and Mzonjani in Kwa-Zulu Natal.

The Middle Iron Age roughly stretches from AD 900 to 1300 and marks the origins of the Zimbabwe culture. During this period cattle herding appeared to play an increasingly important role in society. However, it was proved that cattle remained an important source of wealth throughout the Iron Age. An important shift in the Iron Age of southern Africa took place in the Shashe-Limpopo basin during this period, namely the development of class distinction and sacred leadership. The Zimbabwe culture can be divided into three periods based on certain capitals. Mapungubwe, the first period, dates from AD 1220 to 1300, Great Zimbabwe from AD 1300 to 1450, and Khami from AD 1450 to 1820 (Huffman 2007: 361, 362).

The Late Iron Age roughly dates from AD 1300 to 1840. It is generally accepted that Great Zimbabwe replaced Mapungubwe. Some characteristics include a greater focus on economic growth and the increased importance of trade. Specialisation in terms of natural resources also started to play a role, as can be seen from the distribution of iron slag which tend to occur only in certain localities compared to a wide distribution during earlier times. It was also during the Late Iron Age that different areas of South Africa were populated, such as the interior of KwaZulu Natal, the Free State, the Gauteng Highveld and the Transkei. Another characteristic is the increased use of stone as building material. Some artefacts associated with this period are knife-blades, hoes, adzes, awls, other metal objects as well as bone tools and grinding stones.

The Historical period mainly deals with Europe’s discovery, settlement and impact on southern Africa. Some topics covered by the Historical period include Dutch settlement in the Western Cape, early mission stations, Voortrekker routes and the Anglo Boer War. This time period also saw the compilation of early maps by missionaries, explorers, military personnel, etc. **Figure 4** indicates the rough location of the study area as perceived by Merensky in 1875.



**Figure 4:** Rough indication of the study area on a map compiled by Merensky (Extract from: Merensky 1875).

#### 4. Methodology

I conducted archaeological reconnaissance of the study area during August 2019 through a systematic pedestrian site survey. The transects stretched in a NNE – SSW direction, were spaced roughly 45m apart and were recorded via GPS (Global Positioning System) location (**Figure 5**). General site conditions were recorded via photographic record (**Figures 6 – 9**). Also, the site was inspected beforehand on Google Earth, historical aerial imagery and topographical maps, but revealed no potential sites within the demarcated study area. The historical datasets, however, did prove useful in terms of providing an indication of the age of some of the structures in the general study area. The total area surveyed was roughly 3ha.

The reconnaissance of the area under investigation served a twofold purpose:

- To obtain an indication of heritage material found in the general area as well as to identify or locate archaeological sites on the areas demarcated for development. This was done in order to establish a heritage context and to supplement background information that would benefit developers through identifying areas that are sensitive from a heritage perspective.
- All archaeological and historical events have spatial definitions in addition to their cultural and chronological context. Where applicable, spatial recording of these definitions were done by means of a handheld GPS during the site visit.



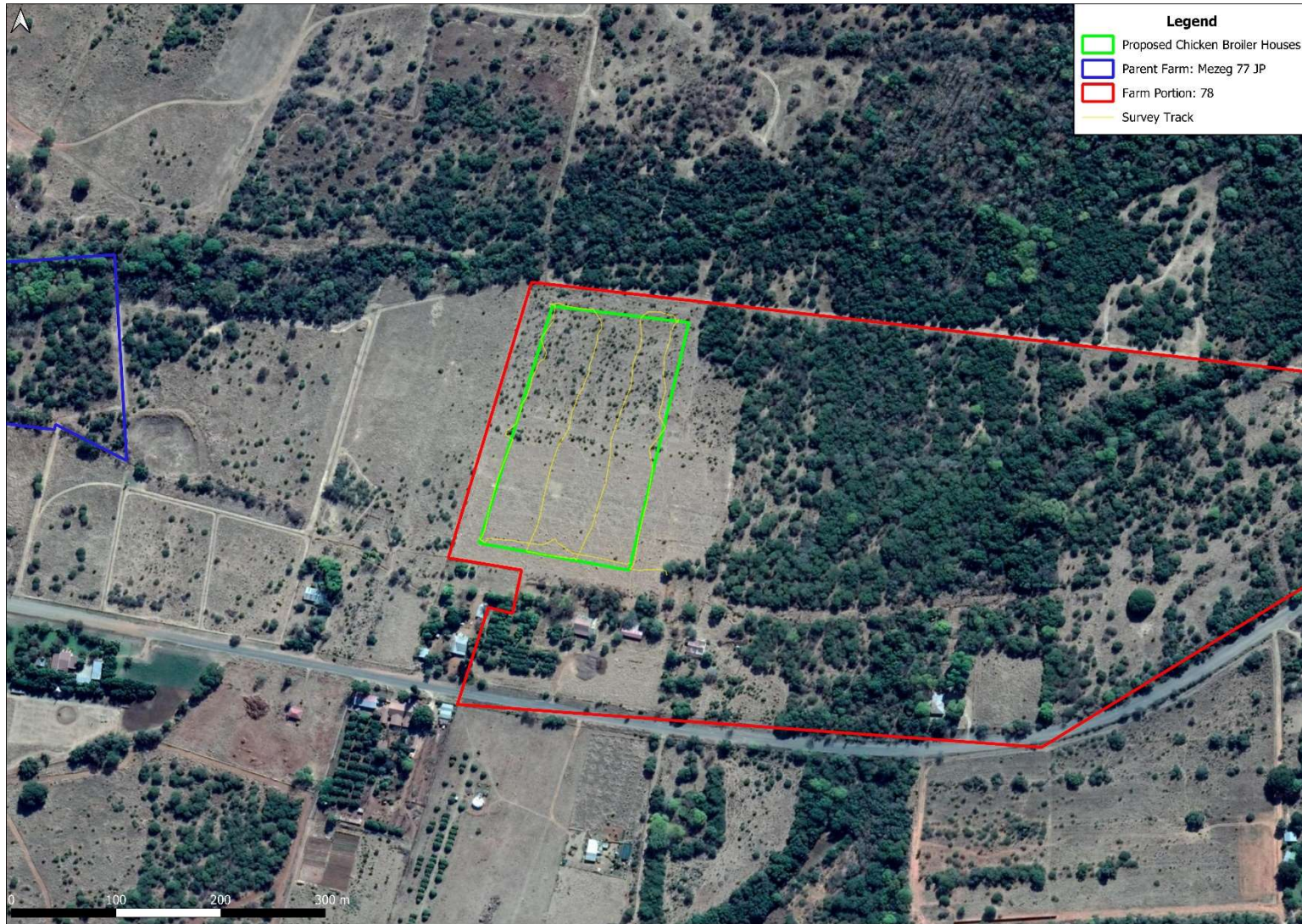


Figure 5: Study area with survey track on a 2012 aerial backdrop.





**Figure 6:** Study area from the south-eastern corner.



**Figure 7:** Study area from the north-eastern corner.



**Figure 8:** Study area from the north-western corner.



**Figure 9:** Study area from the south-western corner.

## 4.1 Sources of information

At all times during the survey, I followed standard archaeological procedures for the observation of heritage resources. As most archaeological material occur in single or multiple stratified layers beneath the soil surface, I paid special attention to disturbances; both man-made such as roads and clearings, and those made by natural agents such as burrowing animals and erosion. I recorded locations of archaeological material remains by means of a Garmin Oregon 550 GPS and photographed these sites as well as general conditions on the terrain with a Sony Cyber-shot camera.

I conducted a literature study, which incorporated previous work done in the region, in order to place the study area into context from a heritage perspective.

According to the current farm owner, who has been on the farm for the past 55 years, the demarcated study area was used for the cultivation of wheat. However, the portion in question fell into disuse after a severe drought in 1977.

### 4.1.1 Previous research

#### **Construction of an 88kv distribution powerline**

A Phase 1 Heritage Impact Assessment was done for the construction of an 88kv distribution powerline from the existing Staatsdrift substation to the proposed Silweerkraans substation within the Ramotshere Moiloa, Moses Kotane and Kgetlengrivier Local Municipalities. This development is located about 20km east of the proposed chicken broiler houses concerned in this report. The HIA revealed one graveyard and several structures of varying states of preservation (Mngomezulu 2017). It appears that the age and context of the structures are not known.

#### **Switching station on Portion 14 of the Farm Roode Kopjes, Zeerust**

The HIA survey done for the construction of a switching station on Portion 14 of the Farm Roode Kopjes, located about 20km southwest of the proposed chicken broiler houses concerned in this report, revealed no heritage sites (Mpande 2017).

#### **Anref Mining at Groot Marico**

A Cultural Heritage Resources Impact Assessment was done for the proposed mining activity within the exiting Anref mine pit. This development is located about 28km south-southeast of the proposed chicken broiler houses concerned in this report. Although no impact on heritage remains was foreseen, an overview of the heritage sites in the general area was included in the report. These sites include several Iron Age and historical sites, as well as several cemeteries (Miller 2011).



## 4.2 Limitations

The entire area demarcated for development was used for cultivation in past times and appears to be used for cattle grazing at the moment. The vegetation on the southern half of the study area consists of short grasslands, while the northern half is significantly overgrown by trees, hampering movement and visibility to a certain extent (**Figure 10**). The general visibility was good during the time of surveying (August 2019).



**Figure 10:** Dense on the northern half of the study area.

## 5. Archaeological and Historical Remains

### 5.1 Stone Age Remains

I found no Stone Age archaeological remains within the demarcated study area.

Although I located no Stone Age archaeological remains, such artefacts may occur in the area. These artefacts are often associated with rocky outcrops or water sources. **Figures 11 - 13** below are examples of stone tools often associated with the Early, Middle and Later Stone Age of southern Africa.

Archaeological studies done on the surrounding areas also did not locate material pertaining to the Stone Age.

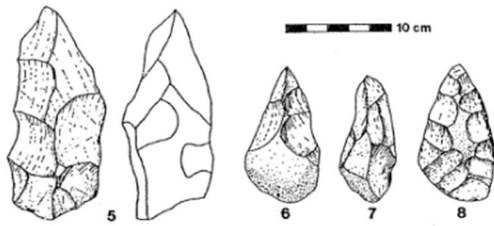


Figure 11: ESA artefacts from Sterkfontein (Volman 1984)

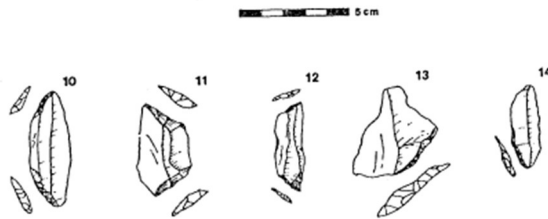


Figure 12: MSA artefacts from Howiesons Poort (Volman 1984)



Figure 13: LSA scrapers (Klein 1984)

## 5.2 Iron Age Farmer Remains

I found no Iron Age Farmer remains within the demarcated study area.

The heritage study done by Miller (2011) revealed several Iron Age sites consisting of stone-walling possibly dating to the 15<sup>th</sup> Century.

## 5.3 Historical

I found no historical remains within the demarcated study area. However, historical aerial imagery and topographical maps indicate past human activity in the general area.

An aerial image dating to 1957 (**Appendix A: Figure 15**) and topographical maps dating to 1967, 1984, 2003 (**Appendix A: Figures 16 – 18**) confirm that the study area was used as agricultural land. The oldest available topographical map available, dating to 1967, indicates that one of the buildings located to the southeast of the study area, used to be post office. Another building is shown to the west of the post office, while a shop was



located on the opposite side of the road (**Appendix A: Figure 16**). These sites, however, fall outside of the demarcated study areas and are therefore not affected by the proposed development.

The studies done by Miller (2011) and Mngomezulu (2017) recorded the remains of several buildings and structures dating to historical times that include the remains of several 19<sup>th</sup> Century pioneer dwellings.

## 5.4 Recent Remains

The only material remains observed within the demarcated study area relate to the irrigation system used to water the wheat field (**Figure 14**). These irrigation lines ran in a north-south direction and were connected to certain points. The rest of the pipe network is no longer present on the site and only parts of the connection points remain.



**Figure 14:** Irrigation system remains.

## 5.5 Graves

I located no graves or burial sites on or within close proximity of the demarcated study area.

The studies done by Miller (2011) and Mngomezulu (2017) recorded several graves and cemeteries in the vicinity of the respective study areas. These sites include early settler graves, local graves, as well as Anglo Boer War graves.

## 6. Evaluation

The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences.

A fundamental aspect in the conservation of a heritage resource relates to whether the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. There are many aspects that must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and if appropriate mitigated in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed.

### 6.1 Field Ratings

All sites should include a field rating in order to comply with section 38 of the National Heritage Resources Act (Act No. 25 of 1999). The field rating and classification in this report are prescribed by SAHRA.

**Table 2:** Field Ratings

| Rating               | Field Rating/Grade | Significance | Recommendation                  |
|----------------------|--------------------|--------------|---------------------------------|
| National             | Grade 1            |              | National site                   |
| Provincial           | Grade 2            |              | Provincial site                 |
| Local                | Grade 3 A          | High         | Mitigation not advised          |
| Local                | Grade 3 B          | High         | Part of site should be retained |
| General protection A | 4 A                | High/Medium  | Mitigate site                   |
| General Protection B | 4 B                | Medium       | Record site                     |
| General Protection C | 4 C                | Low          | No recording necessary          |

\*It should be noted that no sites were located.

## 7. Statement of Significance & Recommendations

### 7.1 Statement of significance

#### **The study area: A portion of Portion 78 of the Farm Mezeg 77 JP**

Although some past human activity is present in the general study area, no material of heritage importance were noted within the boundaries of the demarcated portion as the remains of the irrigation system appear not to exceed 60 years of age. Also, the study area has been disturbed by past and continuous agricultural activities.

### 7.2 Recommendations

The following recommendations are made in terms with the National Heritage Resources Act (25 of 1999) in order to avoid the destruction of heritage remains associated with the area demarcated for development:

- No sites of heritage importance were noted on the surface of the area demarcated for development.
- Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the development and construction phases, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed during development and construction phases, all activities must be suspended and the relevant heritage resources authority contacted (See National Heritage Resources Act, 25 of 1999 section 36 (6)).
- Should the need arise to expand the proposed development beyond the surveyed area mentioned in this study, the following applies: A qualified archaeologist must conduct a full Phase 1 Archaeological Impact Assessment (AIA) on the sections beyond the demarcated area that will be affected by the development, in order to determine the occurrence and extent of any archaeological sites and the impact development might have on these sites.
- From a heritage point of view, development may proceed on the demarcated portion, subject to the abovementioned conditions, recommendations and approval by the South African Heritage Resources Agency.

## 8. Addendum: Terminology

### **Archaeology:**

The study of the human past through its material remains.

### **Artefact:**

Any portable object used, modified, or made by humans; e.g. pottery and metal objects.

### **Assemblage:**

A group of artefacts occurring together at a particular time and place, and representing the sum of human activities.

### **Context:**

An artefact's context usually consist of its immediate *matrix* (the material surrounding it e.g. gravel, clay or sand), its *provenience* (horizontal and vertical position within the matrix), and its *association* with other artefacts (occurrence together with other archaeological remains, usually in the same matrix).

### **Cultural Resource Management (CRM):**

The safeguarding of the archaeological heritage through the protection of sites and through salvage archaeology (rescue archaeology), generally within the framework of legislation designed to safeguard the past.

### **Excavation:**

The principal method of data acquisition in archaeology, involving the systematic uncovering of archaeological remains through the removal of the deposits of soil and other material covering and accompanying it.

### **Feature:**

An irremovable artefact; e.g. hearths or architectural elements.

### **Ground Reconnaissance:**

A collective name for a wide variety of methods for identifying individual archaeological sites, including consultation of documentary sources, place-name evidence, local folklore, and legend, but primarily actual fieldwork.

### **Matrix:**

The physical material within which artefacts is embedded or supported, i.e. the material surrounding it e.g. gravel, clay or sand.

### **Phase 1 Assessments:**

Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.

**Phase 2 Assessments:**

In-depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required.

**Sensitive:**

Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

**Site:**

A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity.

**Surface survey:**

There are two kinds: (1) unsystematic and (2) systematic. The former involves field walking, i.e. scanning the ground along one's path and recording the location of artefacts and surface features. Systematic survey by comparison is less subjective and involves a grid system, such that the survey area is divided into sectors and these are walked ally, thus making the recording of finds more accurate.

## 9. References

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*Human Tissue Act No. 65 of 1983, Government Gazette, Cape Town*

*National Heritage Resource Act No.25 of 1999, Government Gazette, Cape Town*

*Removal of Graves and Dead Bodies Ordinance No. 7 of 1925, Government Gazette, Cape Town*

## **Maps**

Merensky, A. 1875. Original Map of the Transvaal or South-African Republic including the Gold and Diamond fields. Berlin & Botsabelo.

# Appendix A: Historical Aerial Photographs and Topographical Maps



**Figure 15:** The demarcated study area superimposed on a 1957 aerial photograph.



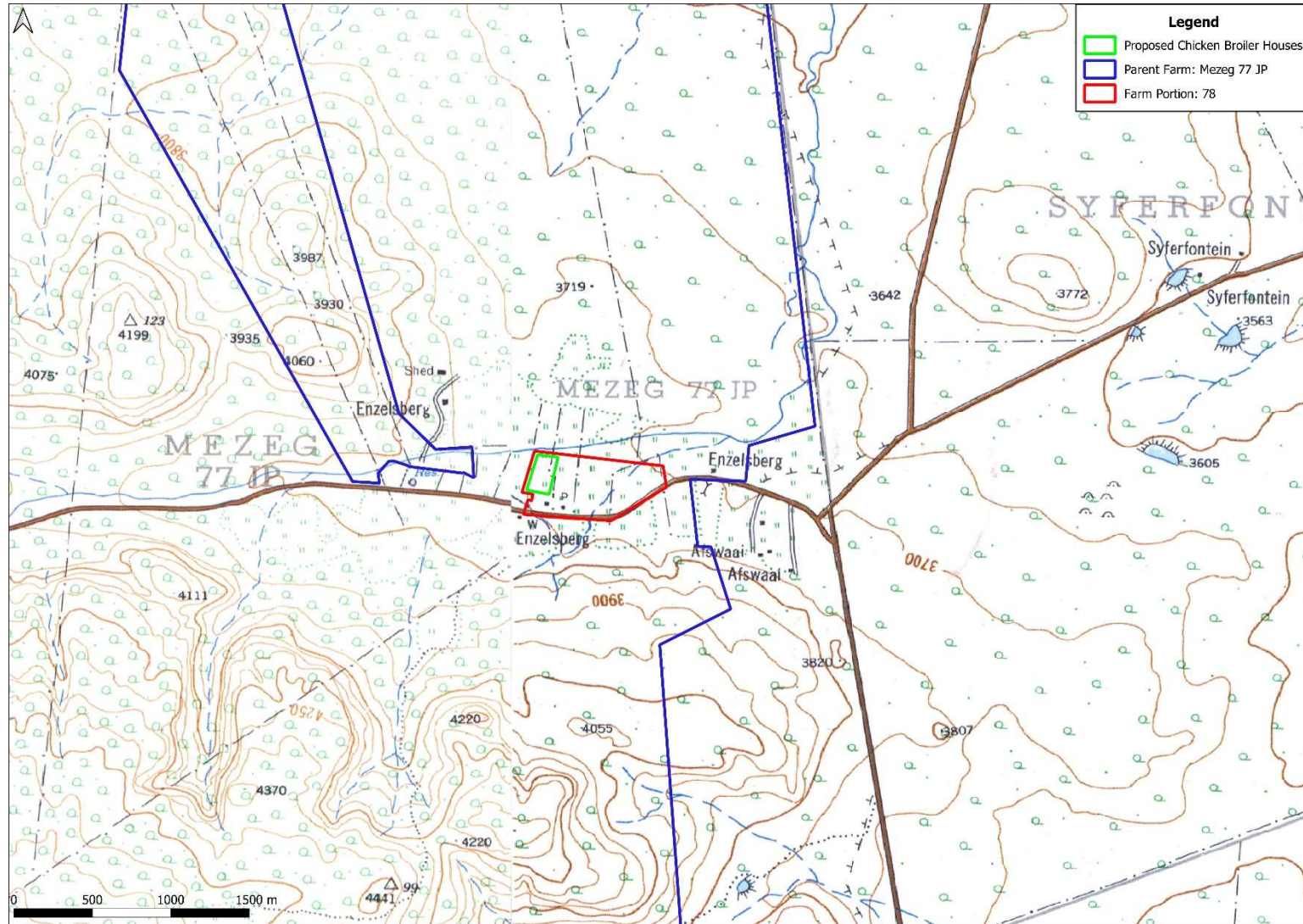


Figure 16: Study area superimposed on a 1967 topographical map.

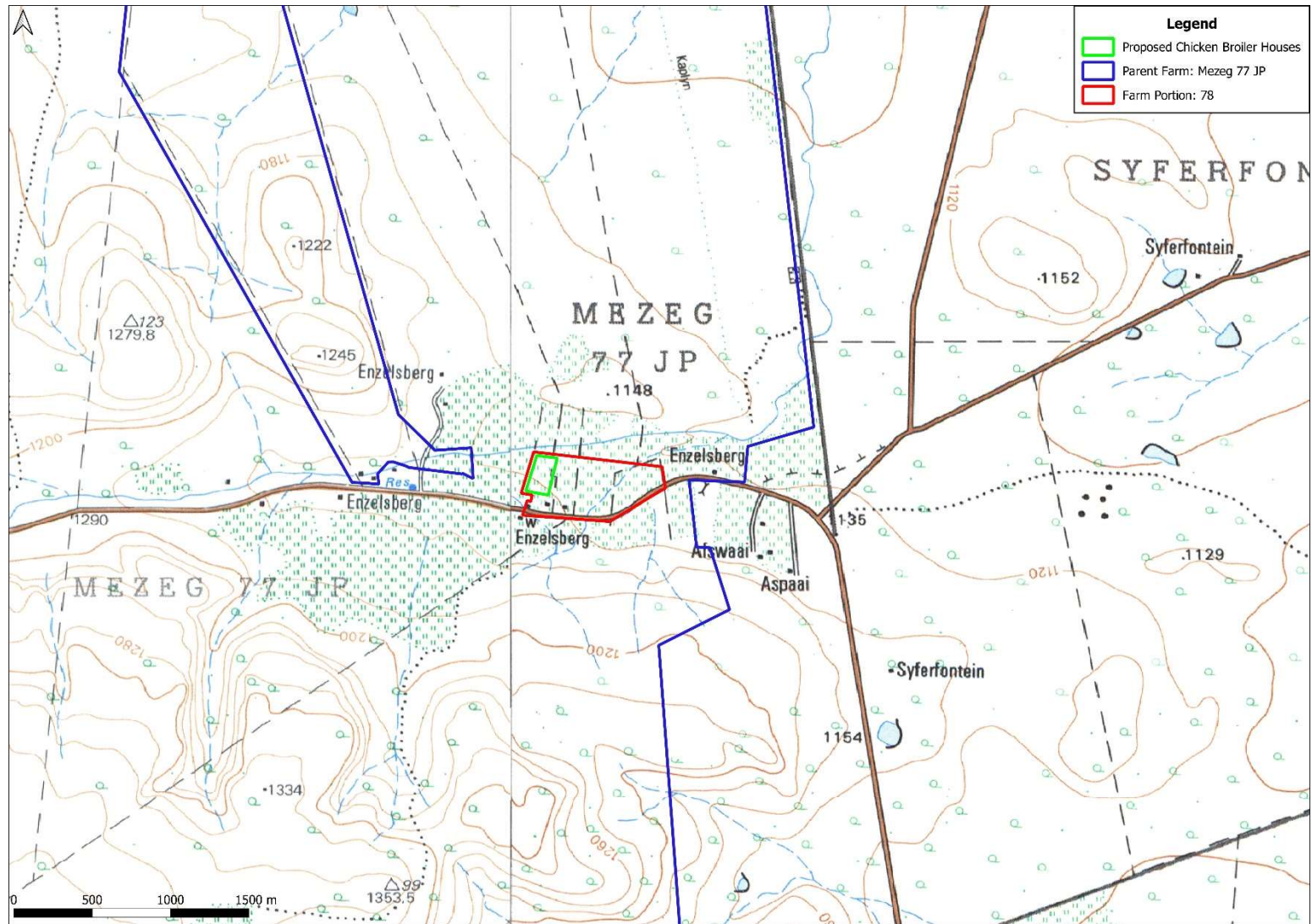


Figure 17: Study area superimposed on a 1984 topographical map.



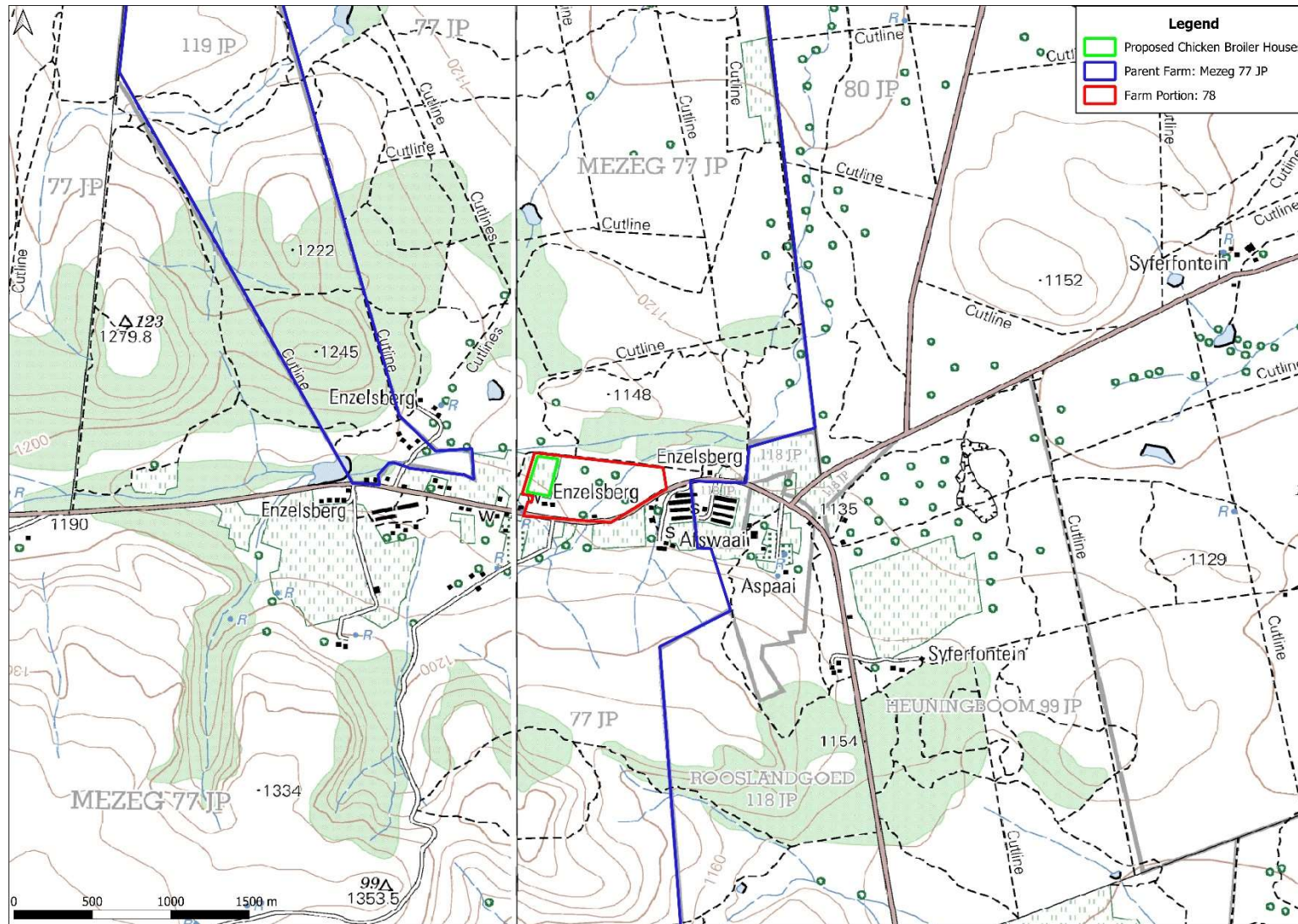


Figure 18: Study area superimposed on a 2006 topographical map.