



**NGT INFRACO**

PLANNING | CONSTRUCTION | MAINTENANCE

**PROJECT TITLE:**

PROPOSED IKHUHU POULTRY FARM ON 154 KATLAGTER IN KUTUMBA ESTATE, PRETORIA  
RURAL WITHIN THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY, GAUTENG  
PROVINCE, SOUTH AFRICA.

**PROJECT REFERENCE:**

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HIA for the Proposed Ikhuhu Poultry Farm On 154  
Katlagter In Kutamba Estate, Pretoria Rural Within the  
City of Tshwane Metropolitan Municipality, Gauteng  
Province, South Africa

**ACKNOWLEDGEMENT OF RECEIPT**

<b>CLIENT:</b>	<b>MOKGOPE CONSULTING CC</b>
<b>CONTACT PERSON &amp; ROLE IN THE FIRM</b>	<ul style="list-style-type: none"> <li>• Ms Hlanganani Khosa</li> </ul>
<b>ROLE IN THE FIRM</b>	<ul style="list-style-type: none"> <li>• Environmental Assessment Practitioner</li> </ul>
<b>TELEPHONE NUMBER</b>	<ul style="list-style-type: none"> <li>• 083 544 4032</li> </ul>
<b>E-MAIL ADDRESS:</b>	<ul style="list-style-type: none"> <li>• <a href="mailto:hlangannani@mokgope.co.za">hlangannani@mokgope.co.za</a></li> </ul>

<b>CONSULTANT:</b>	<b>NGT INFRACO (PTY) LTD</b>
<b>AUTHOR &amp; ROLE IN THE FIRM</b>	<ul style="list-style-type: none"> <li>• Mr Nkosinathi Tomose – Principal Heritage Consultant</li> </ul>
<b>INTERNAL REVIEW AND QUALITY CONTROL &amp; ROLE IN THE FIRM</b>	<ul style="list-style-type: none"> <li>• Internal Review</li> </ul>
<b>CELLPHONE NUMBER</b>	<ul style="list-style-type: none"> <li>• 073 278 3317</li> </ul>
<b>E-MAIL ADDRESS:</b>	<ul style="list-style-type: none"> <li>• <a href="mailto:nkosinathi@ngtinfraco.co.za">nkosinathi@ngtinfraco.co.za</a></li> </ul>

<b>CONTACT PERSON:</b>	<b>MANAGING DIRECTOR AND PRINCIPAL CONSULTANT</b>
SIGN:	
<b>CONTACT PERSON:</b>	<b>CHIEF OPERATING OFFICER</b>
SIGN:	

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Nkosinathi Tomose for NGT Infraco has compiled this report. The views expressed in this report are entirely those of the author, and no other interest was displayed during the decision-making process for the project.

<b>CONSULTANT:</b>	<b>NGT INFRACO (PTY) LTD</b>
<b>SPECIALIST NAME</b>	Mr Nkosinathi Tomose
<b>QUALIFICATIONS</b>	<ul style="list-style-type: none"> <li>• MSc, BSc Honours and BA in Humanities, University of the Witwatersrand, Johannesburg</li> </ul>
<b>ASSOCIATION/PROFESSIONAL BODY</b>	<ul style="list-style-type: none"> <li>• Association of South African Professional Archaeologists (ASAPA): Professional Membership and CRM (Iron Age archaeology, Rock art, Stone Age archaeology, Grave relocation)</li> <li>• International Association for Impact Assessment South Africa: Member</li> </ul>
<b>YEARS OF EXPERIENCE IN THE INDUSTRY</b>	13,5 Years
<b>SIGNATURE</b>	

**CLIENT APPROVAL/SIGN OFF:**

<b>CLIENT:</b>	<b>MOKGOPE CONSULTING CC</b>
<b>NAME</b>	
<b>DESIGNATION</b>	
<b>SIGNATURE</b>	

## **EXECUTIVE SUMMARY**

Mokgope appointed NGT Infraco to conduct an HIA for the proposed establishment of Ikhuhu Poultry Farm on number 154 Katlagter Street within Kutamba Estate Haningnestkrans, Pretoria Rural within the CoTMM, Gauteng Province, South Africa. This report forms part of the environmental impact assessment (“EIA”) and Environmental Management Programme (“EMPr”) process for the proposed development. Accordingly, the study is conducted independently in terms of Section 38 (1) and Section 38 (8) of the National Heritage Resources Act (“NHRA”), No. 25 of 1999.

The standard NGT Infraco HIA study entails: conducting a detailed background information search of the receiving environment. The investigation assesses other forms of data, previous studies conducted in and around the proposed development study area and the broader receiving environment. It also includes performing an on-site investigation (survey) to identify and map heritage resources and sites. This step is followed by assessing the impacts of the proposed development on the identified heritage resources and sites. A heritage Public Participation (H-PP) process is conducted as part of the HIA study to allow Interested and Affected Parties to give inputs on the heritage study and conservation of heritage resources. Then conclusions are made about the nature of the project's impacts on the heritage resources or site or the heritage fabric of a place or landscape. Finally, recommendations are made to best use heritage as the base for the development or incorporate heritage resources and sites as an integral component of the sustainable conservation project. Where it is inevitable not to impact heritage resources or the cultural landscape, heritage memorialisation strategies are devised to memorialise the heritage fabric or the landscape. Because heritage also has an intangible aspect, which often ignored, even in projects that neither negatively impact heritage resources or sites, memorialisation is encouraged to evoke the cultural significance or a place or landscape (its cultural heritage fabric). Furthermore, recommendations are made on how the positive project benefits can be enhanced to ensure a long-term strategy for the conservation and promotion of heritage resources, if any, are found mainly in urban gentrification programmes with heritage forming part of urbanism strategy.

The survey of the project area was conducted on:

- May 2020 by Nkosinathi Tomose (Managing Director and Principal Consultant)

The survey was conducted on foot. A vehicle was also used to access the site. The survey did not yield any archaeological and heritage resources. However, several small rock outcrops were identified within the Kutamba Estate, and special attention was paid to them and previously disturbed areas, some characterised by plants. The survey for plants and other natural environmental features that can contribute to the cultural landscape also did not yield any results. Based on the results of the literature review, field survey results, project impact assessment on both the cultural and heritage fabric of the receiving environment, the following conclusions and recommendations are made about the proposed Ikhuhu Poultry Farm:

### **Conclusions:**

- It is concluded that Kutamba Estate, where Ikhuhu Poultry Farm is proposed, does not contain any archaeological and heritage resources. It also falls within an area that is of Low Sensitivity in terms of the Council of Geoscience and SAHRA palaeontological sensitivity layer.

- In terms of the natural environment setting and its potential to contribute to the cultural landscape, Kutamba Estate does not contain any environmental features of cultural heritage significance. Such features include mountains, forests, caves or water bodies such as wetlands springs with the cultural association. It also does not contain trees of cultural significance, such as Morula trees or plant species of medicinal importance in terrestrial biodiversity, including some of the essential terrestrial biodiversity species. Based on these conclusions made about the site, the following recommendation is made.

**Recommendation:**

It is recommended that both PHRA-G and SAHRA exercise their discretion and grant the project a **Positive Review Comment** and allow the proposed development to continue as planned.

**Disclaimer:**

Although a comprehensive survey of the site took place, some archaeological material and unmarked graves are subterranean and may have been missed. As such, they may not have been identified during the survey. If the proposed development activities bring these materials to the surface, they should be treated as **Chance Finds**. Should construction activities unearth such resources, the development activities should immediately stop. An archaeologist is contacted to conduct a site visit, assess the resources and recommend the finds' mitigation measures. SAHRA and PHRA-G should also be informed immediately of such discoveries. No archaeological material or graves should be removed from the site until a heritage specialist has assessed the significance of archaeological materials or identified graves. Then, a permit should be applied with the relevant heritage authority.

Some areas of the proposed development area were covered in high thatch grass; as such, should any stone tool material be discovered during site clearance – they should be reported to the SAHRA APM unit. Construction activities should be stopped until a qualified Stone Age Archaeologist conducts assesses the discovered resources. The resources are mitigated following the receipt of the mitigation permit by the SAHRA APM Unit.

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## LIST OF ABBREVIATIONS

ACRONYMS	DESCRIPTION
<b>AUTHORITIES</b>	
ASAPA	Association of South African Professional Archaeologists
CoTMM	City of Tshwane Metropolitan Municipality
NGT	Nurture, Grow, Treasure
PHRA-G	Provincial Heritage Resources Agency Gauteng
SAHRA	South African Heritage Resources Agency
GDARD	Gauteng Department of Agriculture and Rural Development
<b>DISCIPLINE</b>	
BGG	Burial grounds and graves
CMP	Conservation Management Plan
ICMP	Integrated Conservation Management Plan
HIA	Heritage Impact Assessment
H-PP	Heritage Public Participation
I&APs	Interested and Affected Parties
PIA	Palaeontological Impact Assessment
PSL	Palaeontological Sensitivity Layer
RQC	Review and Quality Control
<b>LEGAL</b>	
NHRA	National Heritage Resources Act, No. 25 of 1999
NEMA	National Environmental Management Act, No. 108 of 1998

## TERMS AND DEFINITIONS

### *Archaeological resources*

These include:

- Material remains resulting from human activities 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;
- 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;
- 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 which are older than 60 years or which SAHRA considers to be worthy of conservation;
- Features, structures and artefacts associated with a military history older than 75 years and the site on which they are found.

### ***Palaeontological***

Palaeontology 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.

### ***Cultural significance***

- Cultural significance means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

### ***Development***

Development 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 influences its stability and future well-being, including:

- Construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- Carrying out any works on or over or under a place;
- Subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- Constructing or putting up for display signs or boards; any change to the natural or existing condition or topography of land;
- And any removal or destruction of trees or removal of vegetation or topsoil.

**Heritage resources:** This means any place or object of cultural significance

### ***Living heritage***

- Living heritage means the intangible aspects of inherited culture and may include cultural tradition; oral history; performance; ritual; popular memory; skills and techniques; indigenous knowledge systems; and the holistic approach to nature, society and social relationship.

## 1. INTRODUCTION

### 1.1. Background Information for Proposed Programme

Mokgope has been appointed by Ikhuhu (Pty) Ltd to manage the EIA process and compile an EMPr for the proposed development of Ikhuhu Poultry Farm on number 154 Katlagter Street within Kutamba Estate in Haningnestkrans, Pretoria Rural within City of Tshwane Metropolitan Municipality (CoTMM), Gauteng Province.

According to the project document shared with NGT Infraco, the proposed Ikhuhu Poultry Farm within the Kutamba Estate will include the development of the following structures (*Figure 1*):

- A Layer House measuring 123m x 15m
- Four Broiler Houses, each measuring 123m x 15m in size

Based on NGT Infraco experience on similar projects, although not defined in the current project scope, poultry farms' development involves developing access roads, water and sanitation systems, stormwater management plans around the facilities, waste storage facilities, and electricity infrastructure support the operations. In addition, depending on the facility's size, a processing facility is often established to process incoming and outgoing goods and resources.

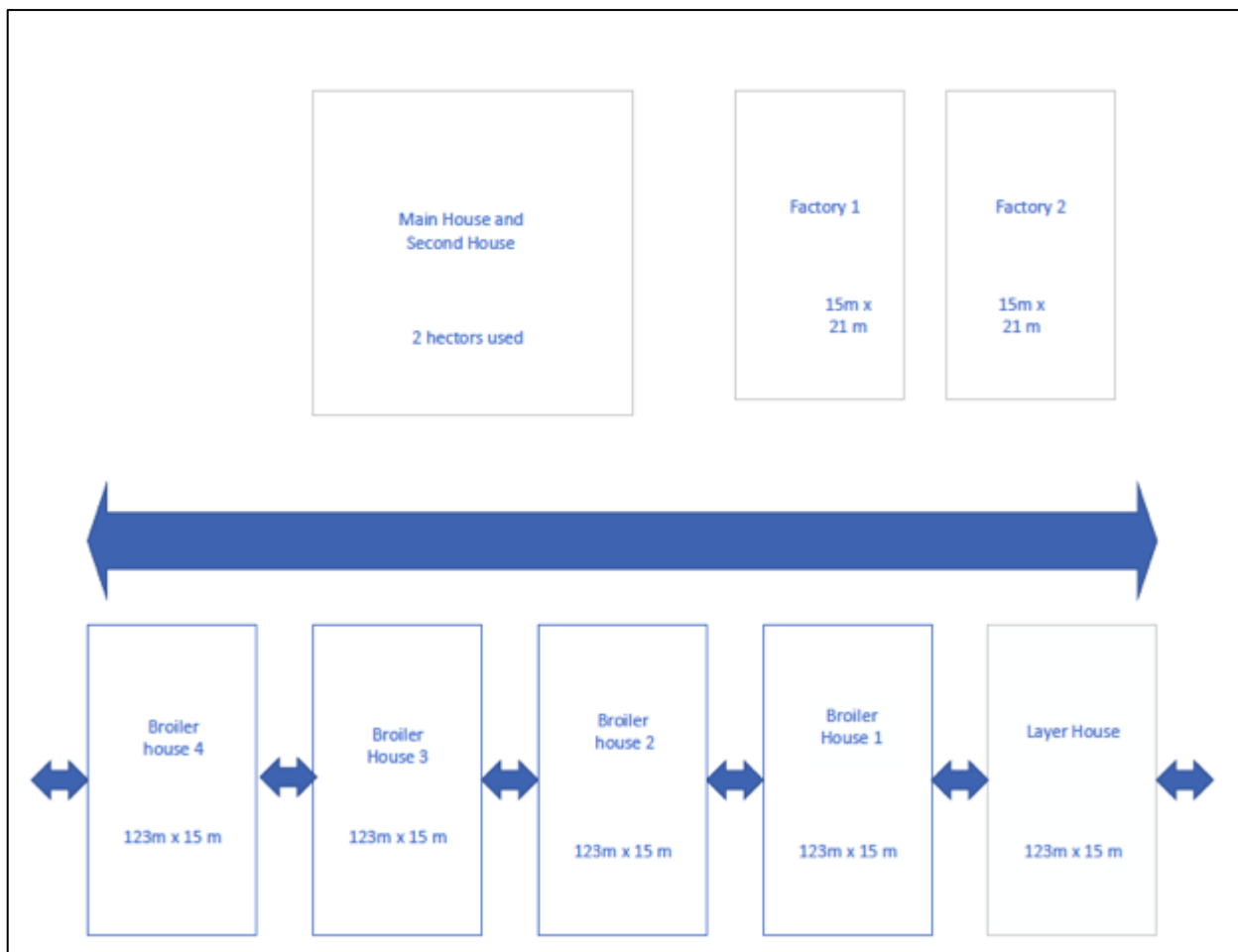


Figure 1- Sketch of the proposed development to the existing main house and two factories

The HIA forms part of the various specialist studies that seek to inform the BAR and the EMPr about the receiving environment's environmental heritage status. NGT Infraco has been appointed to manage the HIA. The study investigates the potential impacts of the proposed project on heritage resources within the receiving environment and the impact on the intangible heritage fabric of the receiving environment. The HIA's objective is to advise on how to manage heritage resources (both the tangible and the intangible) in the study area in terms of known heritage resources management measures in line with the NHRA, No. 25 of 1999.

### **1.2. Proposed Work Scope**

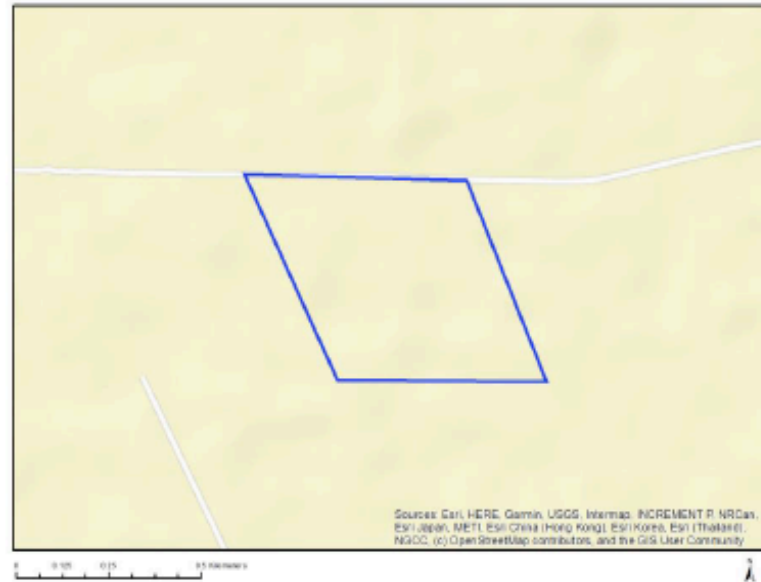
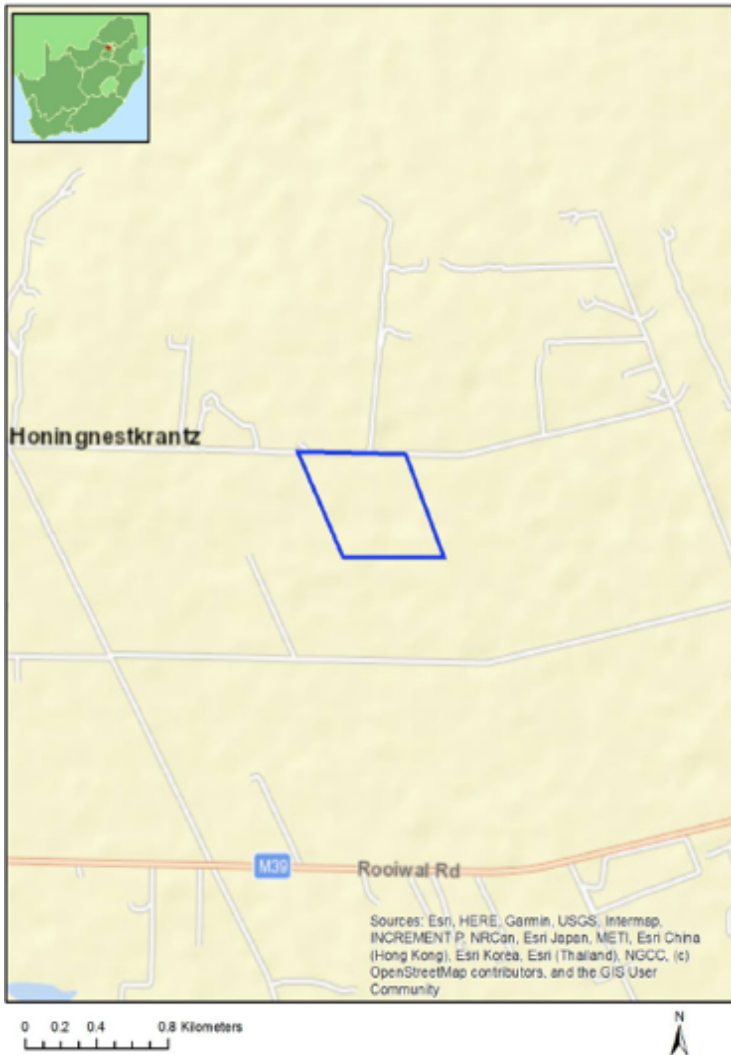
- BAR and EMPr conducted by Mokgope and acquisition of environmental permits
- Specialist inputs to inform the BAR and EMPr

Over and above the compliance requirements for HIA's as part of the BAR and EMPr, this HIA intends to give information on what should be done to enhance further the receiving environment's cultural fabric in all project stages.

### **1.3. Location of the study area**

The study area is on number 154 Katlagter Street in Kutamba Estate on Erf No 269 in Haningnestkrans (i.e. Pretoria Rural). It is located east of Soshanguve Townships within CoTMM, Gauteng Province (Figure 2 and Figure 3). It is nestled between the following major roads (Figure 4):

- Rooiwalpad Road (M19) south of the site
- Koraboom Road (immediate east) and R101 in the far east (Warmbadpad Road) and,
- The M15 Road (Soutpad Road) in the west

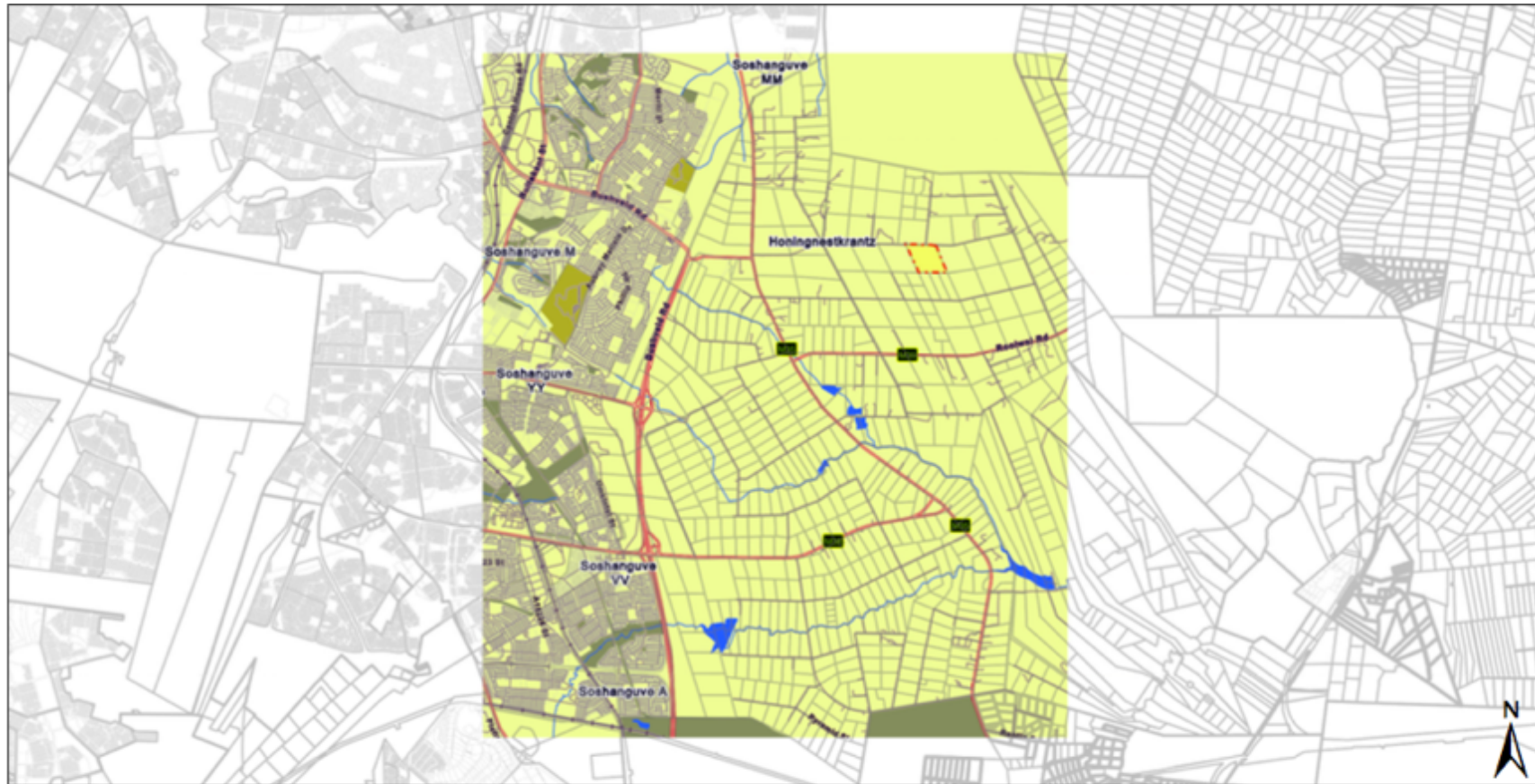


### Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	HONINGNESTKRANS	269	0	25°34'7.84S	28°11'1.8E	Farm
2	HONINGNESTKRANS	269	147	25°31'45.24S	28°9'21.34E	Farm Portion
3	HONINGNESTKRANS	269	155	25°31'59.98S	28°9'11.88E	Farm Portion
4	HONINGNESTKRANS	269	154	25°32'0.32S	28°9'29.81E	Farm Portion
5	HONINGNESTKRANS	269	148	25°31'44.65S	28°9'38.31E	Farm Portion
6	HONINGNESTKRANS	269	153	25°31'59.92S	28°9'47.93E	Farm Portion

Figure 2- No 154 Katlagter Street



3 July 2020

- |   |   |
|---|---|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; border: 1px solid black;"></span> Site Area  | <b>Cadastral</b>  |
| <span style="display: inline-block; width: 15px; height: 15px; border: 2px dashed red;"></span> EIA Application Development Footprint | <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black;"></span> Erven        |
| <span style="display: inline-block; width: 15px; height: 15px; border: 2px solid red;"></span> EIA Application Site                   | <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid gray;"></span> Farm Portion  |
| <span style="display: inline-block; width: 15px; height: 15px; border: 2px dashed green;"></span> National Jurisdiction Area          | <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid gray;"></span> Farm          |
|   | <span style="display: inline-block; width: 15px; height: 15px; border: 1px dashed gray;"></span> Agri Holding |



Figure 3: Map showing the locality of the project area.



Figure 4-Major roads leading to site denoted in red

## 1.4. Condition Description, History and Developmental Context of the Affected Area

### 1.4.1. Spatial Planning and Land Use

The site is zoned an Agricultural – a smallholding. In terms of the environmental sensitivity layer, the site falls within:

- Gauteng Environmental Management Framework Zone with development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmentally sensitive features on the site based on the site sensitivity screening results for the application classification (Figure 5)
- It is within an Air Priority Area (Figure 6); necessary measures will have to be taken into consideration to not contribute significantly to air pollution in terms of the current development
- In terms of Wind and Solar developments study area falls within a place that can be considered for these alternative energy development considerations; however, such developments will have to be approved in terms of Environmental Authorisation or applications under consideration within 30 km of the proposed area (Figure 7)

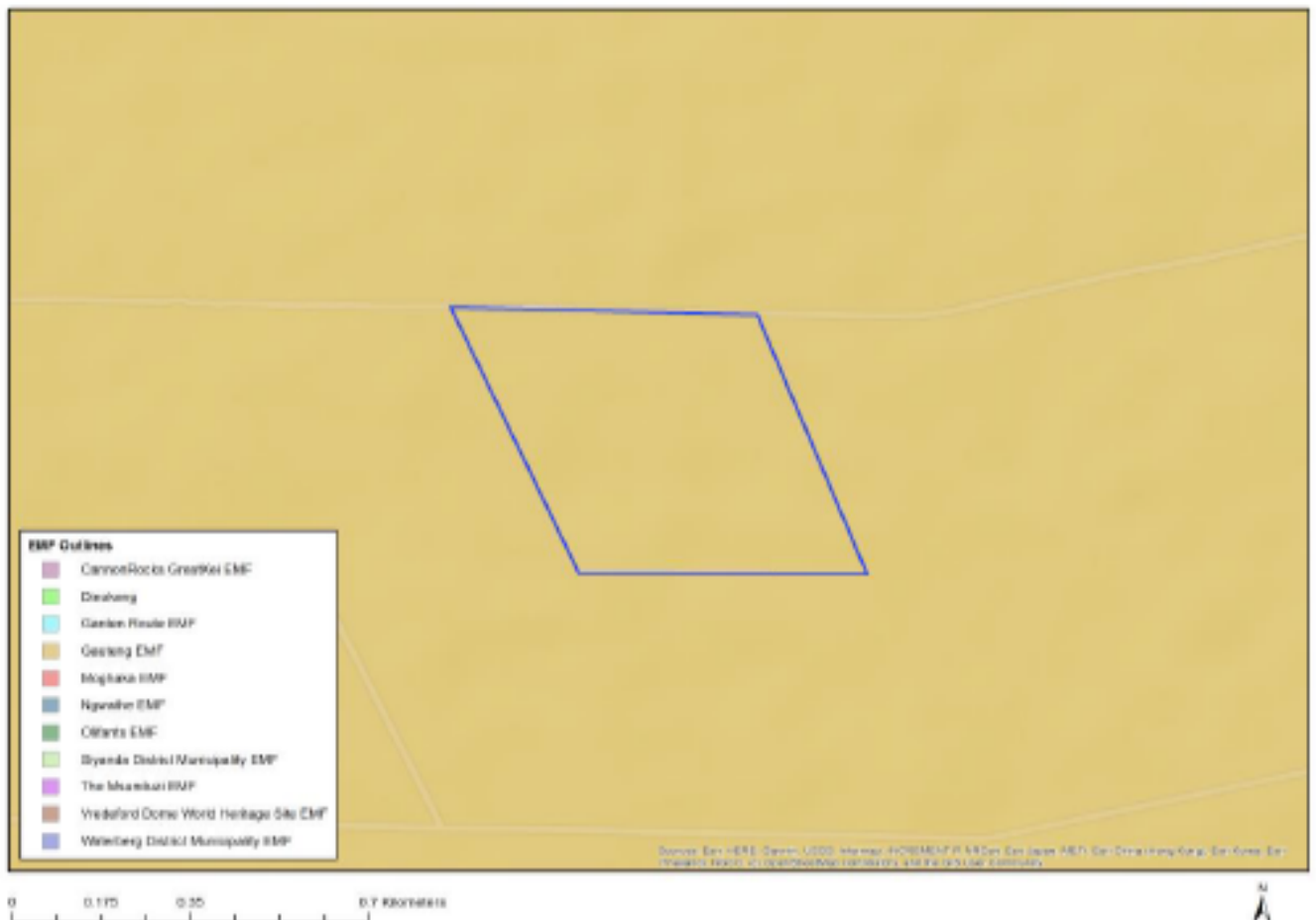
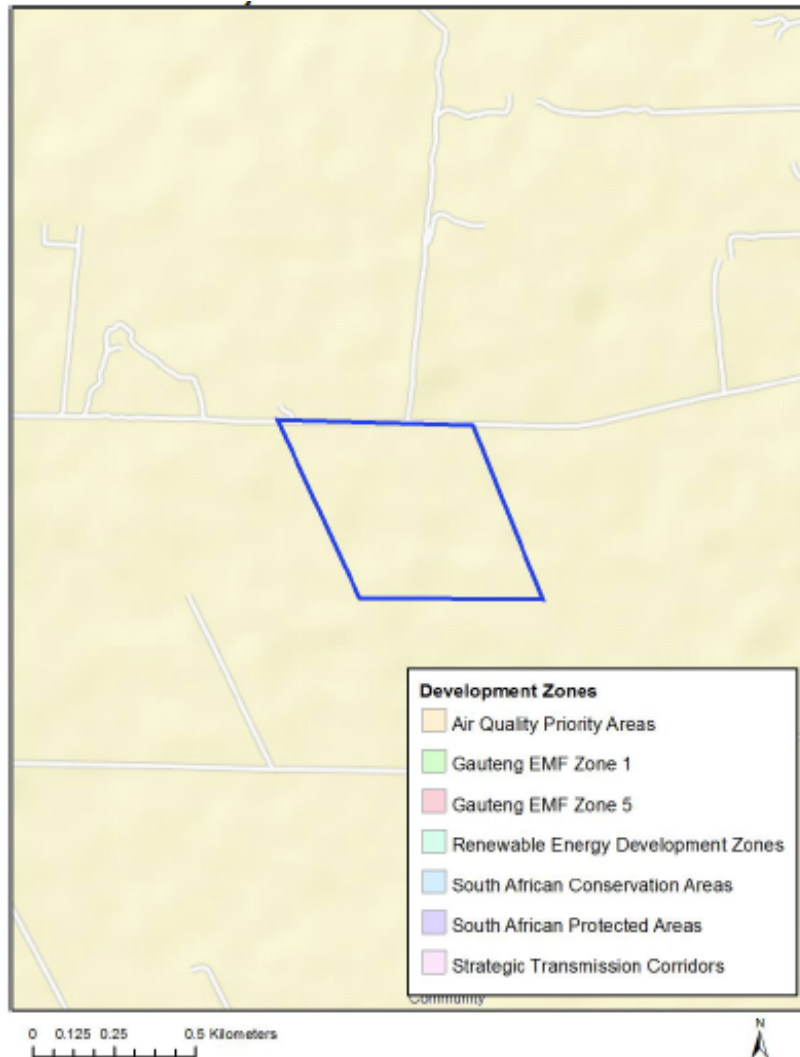


Figure 5-Site within Gauteng EMF





*Figure 6-Site falls within Air Quality Priority Area*

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	12/12/20/2543	Solar PV	Approved	2
2	14/12/16/3/3/1/743	Solar PV	Approved	2
3	14/12/16/3/3/1/491	Solar PV	Approved	18.1
4	14/12/16/3/3/2/423	Solar PV	Approved	23.4
5	14/12/16/3/3/1/492	Solar PV	Approved	18.1
6	12/12/20/2172	Solar PV	Approved	22.5

*Figure 7- Solar development considerations*



*Figure 8- Picture of the site facing Pretoria south*



*Figure 9-Picture of the site from one of the rock outcrops on-site facing the main house situated north of the property*

#### 1.4.2. Accessibility of the Area

- Rooiwalpad Road (M19) south of the site, which joins R101 in the east and M15 in the west
  - R101 in the far east (Warmbadpad Road) from either Pretoria Central Business District in the South or Bela-Bela from the North
- The M15 Road (Soutpad Road) from Pretoria CBD in the south or Soshanguve in the west



*Figure 10-Access routes to the site*

#### 1.4.3. Development Context and History of the Broader Study Area

The study area falls within Gauteng Province, a rich archaeological, heritage and palaeontological landscape.

##### **Stone Age**

The Stone Age refers to humans that mainly used the stone as their technological marker. The Stone Age is divided into the Early Stone Age (ESA) ( $\pm 2$  Ma to  $\pm 300$  ka), the Middle Stone Age (MSA) ( $\pm 300$  ka to  $\pm 40$  ka) and the Later Stone Age (LSA) ( $\pm 40$  ka to  $\pm 2$  ka). The ESA is characterised by two technological industries, which are the Oldowan ( $\pm 2$  Ma to  $\pm 1.5$  Ma) and Acheulean ( $\pm 1.5$  Ma to 300 ka (Klein 2000; Lombard *et al.*, 2012). The Oldowan industry is characterised by flakes produced from pebbles, cobbles and percussive tools (Klein 2000; Roche *et al.* 2009; Birkholtz 2011). In current debates, two species of human ancestors, an early form of *Homo* and *Paranthropus robustus*, have been identified who are thought to have been skilled enough to craft these stone tools (Esterhuysen & Smith 2007).

The Acheulean industry is characterised by large hand axes, cleavers and other bifacial tools (Klein 2000). In South Africa, this stone tool complex is associated with *Homo ergaster*. In South Africa, the Acheulean stone tool complex is often associated with *Homo ergaster*, compared to modern humans in stature, brain size and body, and facial proportions (Esterhuysen & Smith 2007). Unlike most places in South Africa, the Gauteng Province has unearthed significant evidence associated with the ESA period.

The Gauteng Province hosts one of the most significant heritage sites globally (*Table. 2*), the Cradle of Humankind. The site allows researchers to understand past people's heritage, human evolution, palaeoenvironments and paleoclimates. This information can aid in understanding the worlds' social and cultural dynamics and predicting future environments and climates. The sites are namely: Sterkfontein located approximately 30 km away from the study area where some of the prominent skeletal remains such as Mrs Ples and Acheulean and Oldowan stone tools have been found (Mitchell 2002; Reynolds & Kibii 2011); Rising Star Cave, a site where several hominin species such as *Homo Naledi* was found (Berger *et al.*, 2015); Swartkrans where Oldowan stone tools were excavated (Sutton 2012); Roodekop where two ESA sites, as well as mixed MSA/ LSA occurrences, were reported (Van Ryneveld 2015); and Farm Kaalfontein (366JR), near the Willem Prinsloo Agricultural Museum, yielded some of the oldest and largest Stone Age implements in South Africa (Kruger 2016) (*see Table. 2*).

The MSA is widely debated as the phase that marked a change in hominin species to anatomically modern humans (Wadley 2007). Unlike hominin species, these modern humans manufactured a more comprehensive range of tools with technologies more advanced than those from earlier periods. This enabled hunter-gatherer bands to adapt to different environments. Henceforth, rock shelters and caves were used for occupation and reoccupation over very long periods (Van Schalkwyk 2016). Evidence of ochre and ostrich water flasks found in MSA sites across southern Africa inform archaeologists about the emergence of symbolic behaviour and distinctive stone tools. This region is the origin of modern cognitive humans. The MSA period marked a change in stone tool technological techniques from the Prepared Core Technique to the Micro Lithics Technique, which became a dominant feature or trait in the LSA (Wadley 2007; Du Piesanie 2014). A greater variety of tools with diverse sizes and shapes appeared by 250 000 BP. The MSA stone tool assemblage include blades, flakes, scrapers and pointed tools that could have been hafted and used as spears or arrowheads (Wadley 2007; Birkholtz 2011; Du Piesanie 2014). According to Tomose (2013), other archaeological site traits associated with the MSA and modern human behaviour can be seen in the early forms of symbolism in inscriptions or markings, which can be defined as an early form of art in southern Africa. Moreover, the adoption of fire and evidence of fossil bones are other traits that can be associated with the MSA and modern humans (Tomose 2013). In the Gauteng Province, evidence of this period has been excavated at Primrose Ridge area in adjacent Germiston; Henley-On-Klip south of Germiston (Pelser 2015); Swartkrans and at Melville Koppies (Bergh 1999) (*Table 1*)

Table 1: Archaeological sites located in the Gauteng Province

NO.	ARCHAEOLOGICAL SITE	TYPE OF SITE	SAHRIS ID
1.	Arkleton, 852 Schoeman Street, Arcadia, Pretoria	Historical Building	26646
2.	Broederstroon	Iron Age	26950 26955 25266 39395 108214
3.	115 Charles Street, Brooklyn, Pretoria	Historic Dwelling-House	26716
4.	Coopers Cave	Early Stone Age	5528 3042
5.	Drimolen Cave	Early Stone Age	2949
6.	Dutch Reformed Church, Kirkness Street, Pretoria East, Pretoria	Historical Building	26726
7.	145 Eastwood Street, Pretoria	Historical Building	29761
8.	Faerie Glen-Wapadrand Country Estate 01	Iron Age	45093
9.	Farm Kaalfontein (366JR)	Early Stone Age	MAPID_02267
10.	Fort Klapperkop, Groenkloof, Pretoria	Battlefield Building (Historic Building)	26699
11.	Fort Schanskop, Groenkloof, Pretoria	Battlefield Building (Historic Building)	26668
12.	Freedom Park	Memorial (World War I, World War II as well as during the apartheid era)	93204
13.	Gladysvale Cave	Early/ Middle Stone Age	6283
14.	Haasgat	Early Stone Age	3597 4920 6712
15.	Hatherley 311 JR	Iron Age	89624
16.	Henley-On-Klip	Middle Stone Age	105242 34776
17.	Jeppe High School for Boys	Historical building	26923
18.	Klipriviersberg Nature Reserve	Iron Age	2766 5605
19.	Kromdraai	Early Stone Age	4154 4564
20.	Kruger House, Church Street West, Pretoria	Historical building	26718

NO.	ARCHAEOLOGICAL SITE	TYPE OF SITE	SAHRIS ID
21.	Leenhoff House, 799 Schoeman Street, Arcadia, Pretoria.	Historical building	26697
22.	Lion House, 20 Roberts Avenue, Kensington,	Historical building	26892
23.	Magsa Flats, 734 Arcadia Road, Arcadia, Pretoria	Historical building	26652
24.	Malapa	Early Stone Age	4771
25.	Maropeng	Early Stone Age	3035 5143 4937
26.	Mea Vota, 62 Rissik Street, Sunnyside, Pretoria	Historical building	26689
27.	Melville Koppies	Middle/ Late Stone Age, Iron Age	1526
28.	Melrose House, 275 Jacob Mare Street, Sunnyside, Pretoria	Historical building	26717
29.	Meyersdal Nature Estate	Iron Age	44807
30.	Modderfontein	Iron Age	46048
31.	Moerdyk House, 274 Pomona Street, Muckleneuk, Pretoria	Historical building	26698
32.	Mooiplaats 367JR	Iron age	94485
33.	Motsetsi Cave	Early Stone Age	2464
34.	Old Arts Building, University of Pretoria, Pretoria	Historical building	26725
35.	Old Merensky library, University of Pretoria, Lynnwood Road, Pretoria	Historical building	26709
36.	Olifantsvlei	Iron Age	34927
37.	Oost-Eind Primary School, 70 Meintjies Street, Sunnyside, Pretoria	Historical building	26654
38.	Orange Court, Arcadia, Pretoria	Historical building	26712
39.	Pioneer Museum, Silverton, Pretoria	Historical building	26702
40.	Platberg	Late Iron Age	16490- 16508 19181- 19197 26272 32491
41.	Plovers Lake	Middle Stone Age	2462 2262

NO.	ARCHAEOLOGICAL SITE	TYPE OF SITE	SAHRIS ID
42.	Portion 22 of Brakfontein 399 JR, Rooihuiskraal Battlefield, Verwoerdburg, Pretoria	Battlefield (Historical Period)	26710
43.	Primrose Ridge	Middle Stone Age	9066
44.	Redan	Late Stone Age	1599
45.	Rietfontein	Iron age	33792
46.	Rietvlei Nature Reserve	Iron Age	35116
47.	Rising Star Cave	Early Stone Age	11621 11598
48.	Rondegeluk, Pretorius Street, Pretoria	Historical building	26677
49.	Roodekop	Early/ Middle/ Late Stone Age	35099-35106
50.	Sammy Marks and Kynoch Building, Church Street, Pretoria	Historical building	26711
51.	Scott House, Kensington	Historical building	26850
52.	Sterkfontein Caves	Early/Middle Stone Age	6620 4640 2752
53.	Swartkrans Cave	Early/ Middle Stone Age	25281
54.	Suikerbosrand	Iron Age	26932
55.	Swavelpoort	Iron Age	94515
56.	Tweefontein	Iron Age	42339
57.	Vlakfontein	Late Iron Age	24905 25718 32458 32382 41218- 41222 45054 90446
58.	Voortrekker Monument	Historical building	26660
59.	Wonder Caves	Early Stone Age	5014
60.	Zwartkoppies	Iron Age	44785

The Later Stone Age (LSA) is the third phase identified in South Africa's archaeological history. It incorporates the period from 25 000 years B.P. up to the Iron Age, Historical Periods and contact between hunter-gatherers and Iron Age farmers or European colonists. The LSA is associated with modern humans and is characterised by microlithic stone tools, flakes and scrapers from industries such as Smithfield and Robberg (Binneman 1995; Birkholtz 2011; Lombard *et al.*, 2012). Moreover, the LSA is associated with rock engravings and rock paintings (Mitchell 2002; Wadley 2007).

There was also a development of an economic system whereby hunter-gatherers inland hunted fauna and gathered plants which can be seen by seed remains in archaeological assemblages. Furthermore, evidence of symbolic behaviour has been found in southern African archaeological sites during this time. Symbolic behaviour of the LSA period is shown by deliberate burial (Hall 1990), decorating using ostrich eggshell beads and ochre (Hall & Binneman 1987). Within the Gauteng Province, LSA sites have been recorded in Melville Koppies; and LSA rock art sites are found across the landscape of the Magaliesberg area, to the north and east of Mamelodi, and in Redan (Bergh 1999; Tomose 2013; Kruger 2016).

### **Iron Age**

The Iron Age is divided into the Early Iron Age (EIA) (AD 200 – 900), the Middle Iron Age (MIA) (AD 900 – 1300), and the Late Iron Age (LIA) (AD 1300 – 1840). The Iron Age is characterised by farming communities that domesticated animals, cultivated plants, produced various ceramic vessels, smelted iron for weapons and manufactured tools (Tomose 2013; Kruger 2016). There is also evidence of small-scale mining of copper, iron and gold in the northern areas of Southern Africa (Freide 1980). The Iron Age groups migrated with their material culture, which can be observed in the archaeological record. The material culture expresses the identity of the groups as it forms part of the Group's distinct patterns and cultural symbols (Huffman 2002, 2007; Kruger 2016). Ceramic style is used in Iron Age archaeology to distinguish the different Iron Age groups in the southern African landscape.

The EIA is characterised by the first settlements of Bantu farming communities in southern Africa (Badenhorst 2010). These farmers mainly cultivated plants, herded domestic animals, primarily sheep and goats, and produced metal and ceramic vessels. Furthermore, these farmers lived in houses located on valley floors in the eastern regions of the country (Badenhorst 2010; Tomose 2013) to cater to subsistence for their crops and livestock mainly. Other Iron Age traits include stonewalls, pits and burials, and cattle dung (Tomose 2013). During the EIA, three streams of pottery are identified in Africa: the Kalundu Tradition, which is referred to as the western stream. The Kwale Branch, the eastern stream, and the Nkope Branch, the central stream (Huffman 2007a). The Bope and Kwale streams form part of the Urewe Tradition (Mitchell 2002; Huffman 2002, 2007a), traced back to east Africa (Boeyens 2003). Several ceramics associated with the EIA have been found in areas surrounding Pretoria and Johannesburg and the region between Musina and Nelspruit, such as the Mzonjani facies (AD 450 – 740), the Ke Branch and Urewe Tradition. These facies are characterised by punctuates on the rim and spaced motives on the shoulder (Evers 1975, 1977; Huffman 2007b).

The MIA is a period that is mainly focused on the Mapungubwe region in southern Africa. The inhabitants that lived in the Mapungubwe region were primarily farmers and traders of gold. The MIA saw an increase in the population size of the southern African communities, such as those who settled

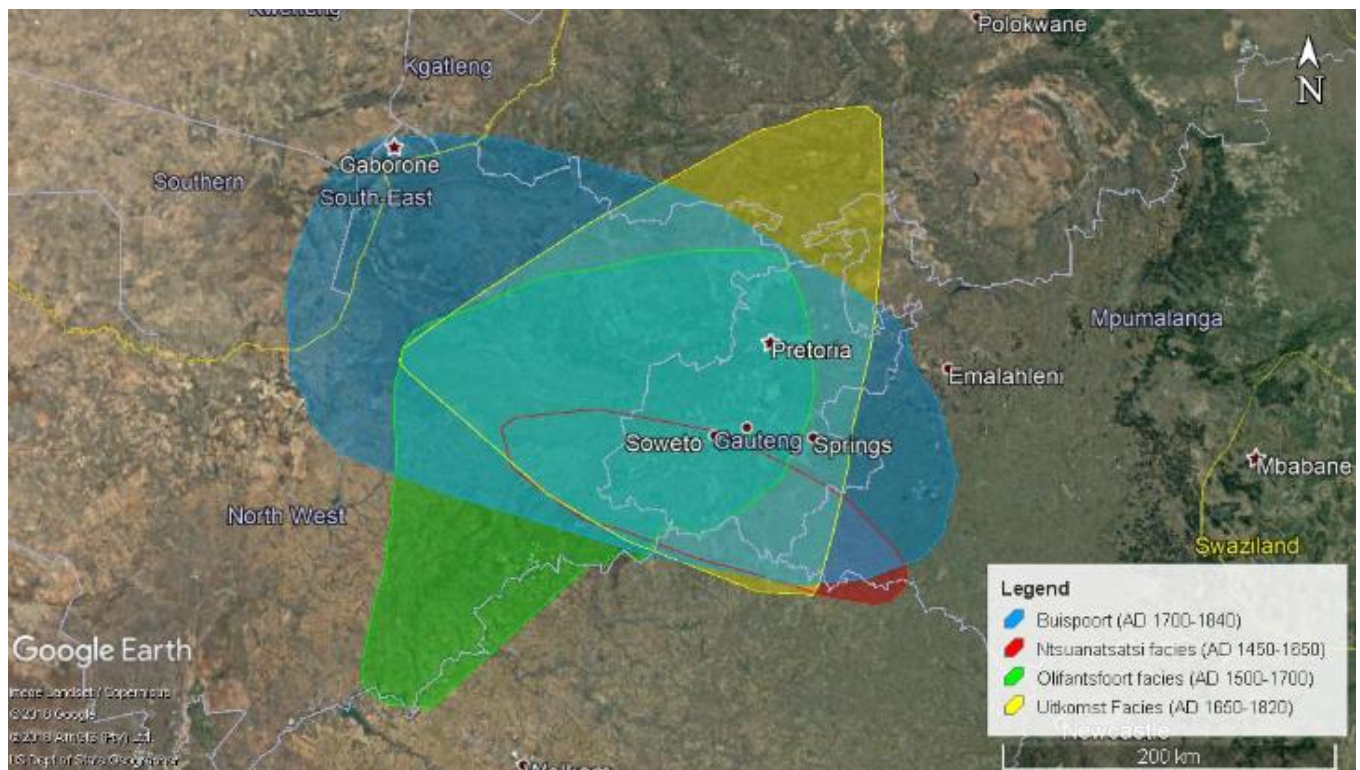


at Mapungubwe (Badenhorst 2010). It was brought on by the success of the established trading networks of ivory and gold for goods such as beads and cloth in the trans-Indian Ocean (Badenhorst 2010).

The LIA is mainly characterised by the domestication of cattle, hilltop settlements and the making of ceramics. Studies conducted on the LIA classification of stone wall settlement patterns have been done by Maggs (1976), Mason (1986), and Huffman (2002). Mason (1968) focused his research on stone wall sites in the Magaliesberg and Johannesburg region; in this area, the 19th-century Tswana town, Marothodi, is located (Anderson 2009). Mason (1986) published a review of his stone wall settlement types following more research conducted in the area. It is believed to be the peri-Tswana speaking groups migrated from east Africa to southern Africa due to climatic conditions in the region (Boeyens 2003). Ceramics of the Moloko Branch are associated with the Sotho-Tswana groups (Evers 1983; Huffman 2002; Mitchell & Whitelaw 2005; Anderson 2009). The abundance of Moloko ceramic style of the Sotho-Tswana groups found in the Limpopo Province and Botswana regions indicates that this ceramic style replaced the earlier Eiland ceramics around A.D. 1000-130 (Mitchell 2002); Boeyens 2003; Huffman 2007b). It is evidenced by tracing the Moloko ceramics back to the EIA of the Urewe Tradition (Boeyens 2003; Huffman 2007b).

Huffman (2002) was able to identify three Stone Settlement basic types of LIA sites, all of which being of the Central Cattle Pattern (CCP). These include, firstly, Group I- which is associated with the southern Sotho-Tswana BaFokeng group and dates to tD1500-1650. Huffman (2002) calls these types of sites Type N settlements, identified by circular periphery stone walls. Secondly, Group II-is associated with the western Sotho-Tswana BaKwena group and dates to tD1650-1820. These sites are identified by circular periphery stone walls and are complemented by single homestead and cattle outpost sites. Lastly, Group III- like Group I is associated with the southern Sotho-Tswana BaFokeng group but dates to AD1650-1820. These sites are also called Type N settlements and are also identified by circular periphery stone walls. However, unlike Group I, Group III's sites are larger and more complex. Similar to Group II, Group III's Stone Settlement sites have single homestead and cattle outpost sites (Huffman 2002). Group III sites dominate in the Klipriviersberg Nature Reserve area in the Gauteng Province, with a few Group II sites identified (Van Ryneveld 2015).

The finds of stone walls and ceramics associated with Sotho-Tswana groups showed that the central highveld was Sotho-Tswana people occupied the central highveld (Anderson 2009). Moloko ceramics were found in Vlakkfontein, south of Johannesburg. Furthermore, stone wall sites were found in Magaliesburg, the area where Marothodi, a 19th-century Tswana town, was located (Anderson 2009). Several LIA ceramic styles have been found throughout the Gauteng Province (*Figure. 6*). Ceramics of the Ntsuanatsatsi facies (AD 1450 to 1650) of the Blackburn Branch and Urewe Tradition have been found near the Potchefstroom and Johannesburg regions (Mason 1986; Huffman 2007b). Ntsuanatsatsi facies are characterised by broadband stamping in the neck with stamped arcades on the shoulder (Huffman 2007b). The Uitkomst facies (AD 1650 – 1820) of the same branch is seen as the successors to the Ntsuanatsatsi facies and contains elements of both Nguni (Ntsuanatsatsi facies) and Sotho-Tswana speakers (Olifantspoort facies) pottery styles (Huffman, 2007b). They are characterised by stamped arcades and blocks of parallel incisions and cord impressions, representing contact between these two groups.



*Figure 11-Iron age ceramic sequences found throughout the Gauteng Province.*

Uitkomst ceramics are located north of the Potchefstroom region and in the Gauteng region (Huffman, 2007). The Olifantspoort facies (AD 1500-1700) of the Moloko Branch has been found around the Potchefstroom, Rustenburg and Pretoria regions (Mason 1986; Mitchell 2002; Huffman 2007). Mason (1974) has also found pottery similar to the Olifantspoort facies on the slopes of Platberg, near Klerksdorp. Olifantspoort pottery is characterised by “multiple bands of fine stamping and narrow incision separated by colour” (Huffman 2007b). Buispoort ceramics (AD 1700 – 1840) of the Moloko Branch have been found to the north of Potchefstroom and Gauteng Province (Mason 1962, 1986; Boeyens 2000; Huffman 2007). Buispoort ceramics are characterised by “rim notching, broadly incised chevrons and white bands” (Huffman 2007a).

In Gauteng Province, evidence of Iron Age habitation can be found at various places. They include stonewalled sites in Klipriviersberg Nature Reserve (i.e. more than 100 individual sites), Melville Koppies and Suikerbosrand (see *Table 2*), Lonehill, Bruma Lake and Hearn Drive (Van Schalkwyk 2016). Moreover, there is evidence of LIA iron smelting in the Broederstroom, a site near Hartbeespoort Dam (Friede 1980).

### **Historical Period**

The Historical Period dates from AD 1600 and is generally with colonial settlements in South Africa. During the Anglo-Boer war, several battles took place in and around the Pretoria region. During 1815 to 1840, Mzilikazi, a Zulu who departed from Shaka Zulu, migrated with his followers north and invaded the interior of South Africa. Mzilikazi move resulted in a series of battles and wars between the Zulu’s, Voortrekkers and Sotho-Tswana communities in the Orange Free State and southern

Transvaal (Gutteridge 2008). The chaos of these battles displaced many indigenous communities in the interior of Southern Africa. In October 1836, the Voortrekkers engaged in a battle with 3000 of Mzilikazi's warriors on Vegkop hill (Zvobgo 2009). The Voortrekkers, assisted by the Sotho-Tswana and Griqua groups defeated, Mzilikazi's Matabele, who fled to the Limpopo Province and settled in Zimbabwe (Zvobgo 2009).

Following disputes with the British, the Dutch-speaking Voortrekkers migrated north into the interior of southern Africa from the Cape Colony in 1836's in search of creating a homeland, independent of British rule. This migration of approximately 12000 – 140000 Voortrekkers is referred to as the Great Trek. The Voortrekkers migrated north and east into a region called the Orange Free State (Hodge 2008). By 1841 Lukas Corneluis Badenhorst settled in the Pretoria region on a farm that was called Elandspoort and later renamed to Groenkloof (Preller 1938; Van Schalkwyk *et al.*, 1992). Other white settlers settled on the farm Hartebeestpoort in Silverton and Doors Erasmus settled in Wonderboom (Van Schalkwyk 2012). The area the Voortrekkers settled on was later called Pretoria, after A. H. Pretorius (Miller 2013). Pretoria was officially proclaimed as a town in the 1850's and surveyed in in the 1850s by F. du Toit (Van Schalkwyk *et al.*, 1992; Van Schalkwyk 2009; Miller 2013; Paterson 2014). As a result of the expansion and developments that took place in Pretoria several were incorporated into the city, including Arcadia which was incorporated into Pretoria during 1889 (Paterson 2014).

### ***Conclusions on Literature Review***

In conclusion the background information search has shown the broader study area of the CoTMM and Gauteng Province. However, there is limited information on archaeological or heritage resources within the proposed development area. The townships situated in the west were also established in the 1970s and do not contain any significant cultural heritage resources.

## **2. TERMS OF REFERENCE FOR THE APPOINTMENT OF HERITAGE SPECIALIST**

The HIA is conducted in terms of Sections 38 (1) and 3 (3) of the NHRA, No. 25 of 1999. NGT Infraco is appointed as the lead cultural resources management (CRM) consultant to conduct and manage the HIA and the associated heritage public participation process (H-PPP). The appointment of NGT Infraco is based on NGT experience and expertise in **conservation**. One of the three pillars of NGT Infraco is expertise and experience in **Infrastructure** and **Built Environment** planning, construction, and maintenance. Heritage and environment resources conservation form the core of its business. But it is also based on its understanding of the socio-economic benefits associated with conservation efforts.

### **2.1. NGT Infraco and Its Experience**

#### **2.1.1. Who We Are**

NGT Infraco was a through the line Planning, Construction and Maintenance company established in 2013 ([www.ngtinfraco.co.za](http://www.ngtinfraco.co.za)). We provide services in the infrastructure and property development and conservation sectors. We operate in all three South Africa regions, which include:

- Northern Regions: Gauteng Province, Limpopo, Mpumalanga and the North West Province
- Central Regions: Free State Province and KwaZulu-Natal
- Cape Regions: Eastern Cape Province, the Western Cape and the Northern Cape

#### **2.1.2. How We Operate**

NGT is a collaborative platform for specialists across the planning, construction, maintenance and conservation space. Our process objective is to offer a seamless, streamlined experience to our clients and stakeholders.

#### **2.1.3. Our Management**

The Company Executive Director and Principal Consultant has 13 years of experience in the following field:

- Infrastructure development - planning, permitting, design and management
- Built environment – feasibility, planning, permitting, design and build
- Conservation - feasibility, planning, permitting and conservation management plans for both cultural and natural heritage resources
- Project and programme management – from inception to handover

In addition to his vast South African experience, he has extensive international experience and expertise. International project experience in countries such as the Democratic Republic of Congo, scientific exchange programmes with countries such as the United States of America, the Peoples Republic of China and France

Together with his creative mind and entrepreneurial zeal, the above gives NGT Infraco a competitive edge over its competitors and the work it delivers on. With each project and programme uniquely conceptualised, structured and delivered to exceed client expectations. At NGT Infraco, we continuously challenge ourselves to supersede conventional thinking in providing on projects and programmes.

## 2.2. Legal Requirements for Completion of the Study

The NHRA, No. 25 of 1999 sets norms and standards for the management of heritage resources in South Africa. Section 35 and 38 (3) of the NHRA, No. 25 of 1999 informs the current HIA study. Table 4 below gives a summary of all the relevant legislations that informed the current study.

*Table 2: Legislation and relevance to this HIA Study*

<b>LEGISLATION (INCL. POLICIES, BILLS AND FRAMEWORK)</b>	
<b>Heritage</b>	<ul style="list-style-type: none"> <li>• Heritage resources in South Africa are managed through the National Heritage Resources Act (NHRA), No. 25 of 1999. This Act sets guidelines and principles for the management of the <i>nation estate</i>.</li> <li>• Section 34 becomes relevant in terms of structures.</li> <li>• Section 35 becomes relevant in terms of archaeology and palaeontology.</li> <li>• Section 36 becomes relevant for the management of burial grounds and graves.</li> <li>• Section 38 of the Act becomes relevant to this development based on the nature and character of the programme</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• The NEMA, No. 107 of 1998.</li> <li>• The cultural environment in South Africa is managed through Section 24 of the NEMA, No. 107 of 1998.</li> </ul>

### 3. METHODOLOGY

#### 3.1. Approach to the Study

Nkosinathi Tomose is responsible for compiling the HIA report and the H-PPP, including its Review and Quality Control (RQC) process. The work involved reviewing the First Draft HIA (Revision 01) and revising the Second Draft (Revision 02). The RQC is a standard process at NGT Infraco and forms part of its quality management systems. This process considers if:

- The Study addresses project objectives in line with the project work scope
- The Study follows the necessary steps in conducting and completing the work in terms of the required legislation
- The quality of the content of the Study
- The work is conducted, concluded and delivered to the client and the project proponent within the prescribed timeframes and schedule of works:
  - An important factor in project management is that it can result in significant project risks such as financial escalations and unrest due to delayed service delivery, especially in public projects.
  - Reputation risks to the appointed Principal Agent
- That document management systems include compliance to non-disclosures and document pathway between the consultant, the Principal-Agent, stakeholders and authorities.

##### 3.1.1. Step I – Literature Review (Desktop Phase)

Background information search for the proposed development took place following the client's receipt of an appointment letter. Sources used included, but not limited to, published HIA studies, academic books, academic journal articles and the internet about the site and the broader area in which it is located. Interpretation of legislation (the NHRA, No. 25 of 1999) and local by-laws forms form the study's backbone.

##### 3.1.2. Step II – Physical Survey

- The survey of the project area was conducted in May 2020
  - Nkosinathi Tomose conducted it
- The survey of the proposed development area was conducted on foot, and the site was accessed using a bakkie;
- The surveys aimed to identify archaeological, burial grounds and graves, and built environment heritage sites and features in and around the area proposed for development area;
- To record and document the sites using applicable tools and technology;
- The survey also paid attention to the exposed area and rock outcrops within the estate (e.g. *Figure 12 and 13*)

The following technological tools were used for documenting and recording identified resources on site:

- Garmin GPS (i.e. Garmin 62s) – to take Latitude and Longitude coordinates of the identified sites and track the site.
- Canon SLR – to take photos of the affected environment and the identified sites.



*Figure 12- Stone outcrops on site near the existing house*



*Figure - Stone outcrop*

### 3.1.3. Step III - Site Grading and Impact Significance Ratings

The following site significance classification minimum standards as prescribed by the SAHRA (2006) and approved by ASAPA for the Southern African Developing Community (SADC) region were used to grade the identified heritage resources or sites (*Table. 3*).

#### 3.1.3.1. Site Grading

*Table 3: Site significance classification standards as prescribed by SAHRA*

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (N.S.)	Grade 1	High Significance	Conservation; National Site nomination
Provincial Significance (P.S.)	Grade 2	High Significance	Conservation; Provincial Site nomination
Local Significance (L.S.)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (L.S.)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP. A)	-	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP. B)	-	Medium Significance	Recording before destruction
Generally Protected C (GP. A)	-	Low Significance	Destruction

#### 3.1.3.2. Ratings in terms of Section 3 (3) of the NHRA, No. 25 of 1999

Cultural and natural landscape rating including architectural and archaeological resources in terms of the importance (*Table 4*)

*Table 4: Significance criteria in terms of Section 3(3) of the National Heritage Resources Act.*

No	Criteria Used
1	The importance of the cultural heritage in the community or pattern of South Africa's history (Historic and political significance)
2	Possession of uncommon, rare or endangered aspect of South African natural and cultural heritage significance
3	Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage (Research/scientific significance)
4	Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group (Aesthetic significance)
5	What is the state of the architectural and structural integrity of the street and streetscape?
6	Importance in demonstrating a high degree of creative or technical achievement at a particular period (Scientific significance)
7	Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (Social significance)
8	Strong or special association with the life and work of a person, group or organisation of importance in the history of South Africa (Historic significance)
9	The significance of the site relating to the history of slavery in South Africa.



### 3.1.3.3. Historical Significance Rating

Table 5- Rating in terms history of the area

No	Criteria Used
1	Is the street or streetscape associated with a historical person or group?
2	Is the street or streetscape associated with a historical event?
3	Is the street or streetscape associated with a religious, economic, social, political or educational activity?
4	Is the street or streetscape of archaeological significance? Are any of the buildings on the site older than 60 years?

### 3.1.3.4. Landscape Architectural Significance Rating (artefactual significance)

Table 6- Landscape and landscape features rating

No	Criteria Used
1	Is the street and streetscape an important example of a Pretoria streetscape precinct?
2	Is the street or streetscape an outstanding example of a particular style or period?
3	Does the street or streetscape contain fine landscaping details and reflect exceptional craftsmanship?
4	Is the street or streetscape an example of an exceptional industrial, engineering or technological development?
5	What is the state of the architectural and structural integrity of the street and streetscape?
6	Is the street or streetscape's current and future use in sympathy with its original use (for which they were designed)?
7	Were the alterations to the street or streetscape done in sympathy with the original design?

### 3.1.3.5. Spatial Significance Rating

Table 7- Spatial Rating

No	Criteria Used
1	Can the street be considered a landmark in the city?
2	Does the street or any of the adjacent buildings contribute to the character of the neighbourhood?
3	Do any of the buildings contribute to the character of the streetscape?
4	Does the street relate to the urban network of adjacent streets and streetscapes?

## 3.2. Limitations and Assumptions

Although a comprehensive survey of the site took place; some archaeological material and unmarked graves are subterranean and may have been missed. As such, they may have not been identified during the survey. If the proposed development activities bring these materials to the surface, they should be treated as **Chance Finds**. Should construction activities unearth such resources, the development activities should immediately stop, and an archaeologist is contacted to conduct a site visit, assess the resources and recommend the finds' mitigation measures. SAHRA and PHRA-G should also be informed immediately of such discoveries. In this case, no archaeological material of graves should be moved from the site until the heritage specialist has been able to assess the site's significance and archaeological material, subject to SAHRA approval.

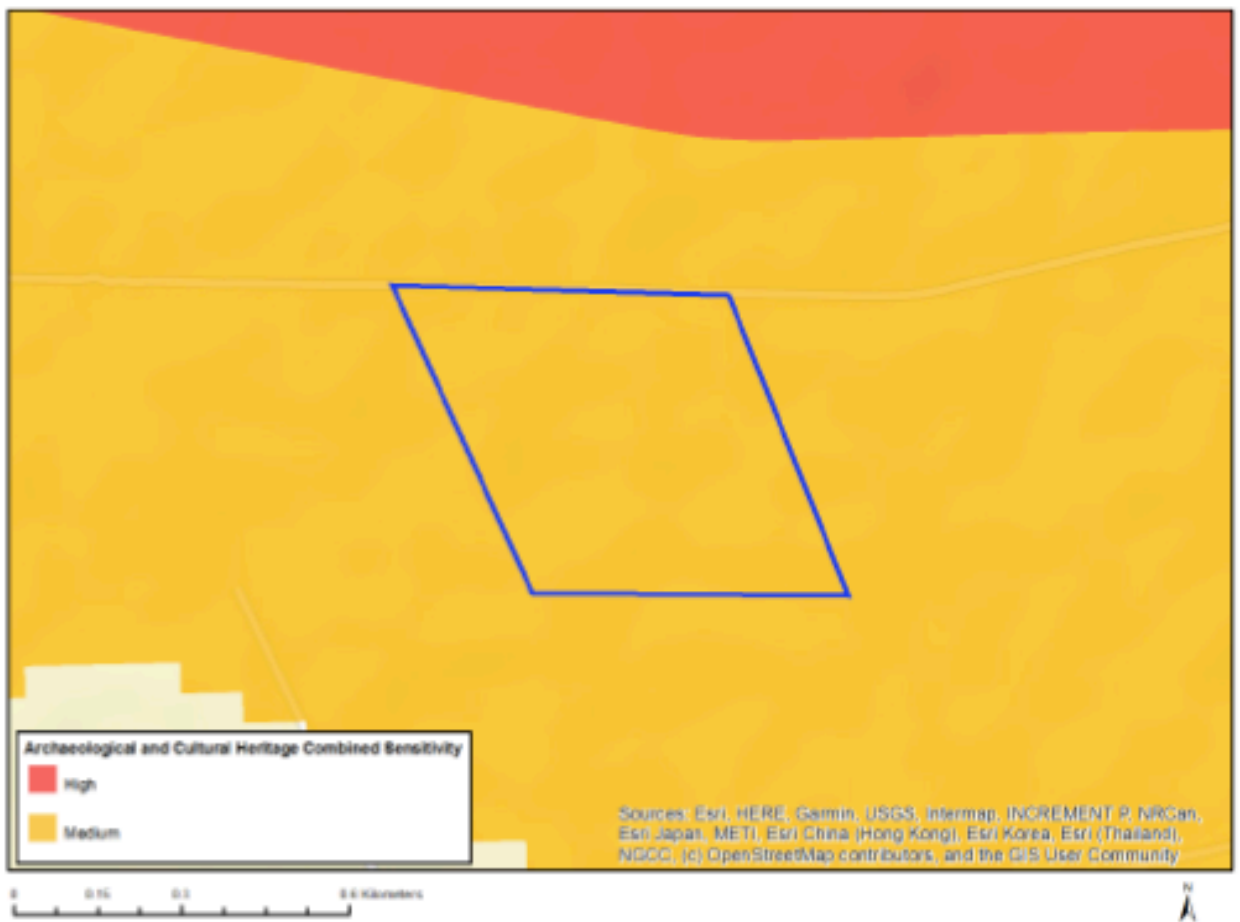
Some areas of the site were covered in high thatch grass; as such, should any stone tool material be discovered during site clearance – they should be reported to the SAHRA APM unit. Construction activities should be stopped until a qualified Stone Age Archaeologist conducts an assessment of the discovered resources. The resources are mitigated following the receipt of the mitigation permit by the SAHRA APM Unit.

**4. RESULTS**

The background information yielded information about the history and heritage of the study area. The survey confirmed some of the known heritage resources and other forms, such as the material culture associated with the stone enclosure, were discovered. Below is the list of heritage resources found on site:

**4.1. Archaeological and Cultural Heritage Combined Sensitivity**

The National Environmental Toolkit identifies the study area to be on Medium Heritage Sensitivity. However, no archaeological or cultural heritage site or resources were identified on-site. The site also falls within an area of Low Palaeontological Sensitivity.

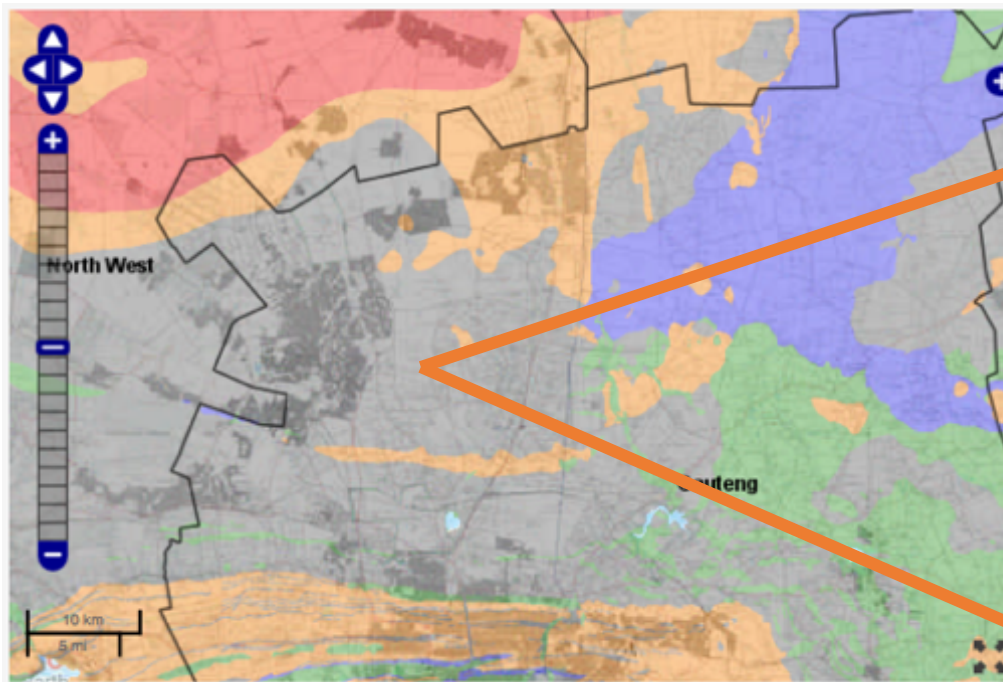


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

**Sensitivity Features:**

Sensitivity	Feature(s)
Medium	Mountain or ridge

Figure 13- Heritage Sensitivity



1 in 250 000 geological formation layers are courtesy of the Council for GeoScience  
 For more information, go to [How to Use the Palaeontological \(fossil\) Sensitivity Map](#)

Colour	Sensitivity	Required Action
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

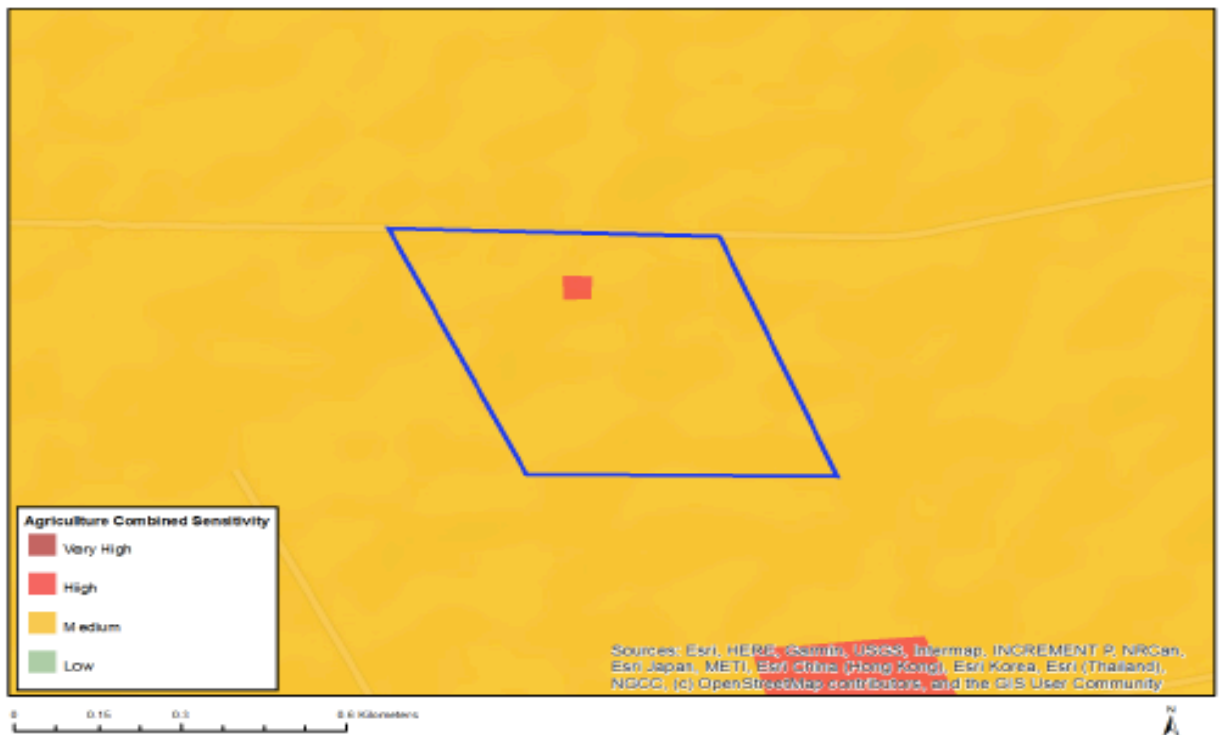
*Figure 14-Palaeontological Layer*

**4.1.1. Conclusions Archaeology, Heritage and Palaeontology**

Although the site is assessed as Medium Archaeological and Heritage Sensitivity, the survey did not yield any archaeological and heritage resources. The Council of GeoScience and SAHRA's Palaeontological Layer shows the site to be situated in an area that does not contain fossiliferous rock materials. Therefore, there is no need for further palaeontological studies.

**4.2. Site in Terms of its Natural Setting and the Potential to Contribute to Cultural Landscape**

- The site falls within a Medium Agricultural Sensitive area with the existing farmhouse in high agricultural potential (Figure 15). The proposed development is in line with the agricultural potential of the site.
- It is Medium in terms of Animal Combine Sensitivity (Figure 16)
- It is of Low Sensitivity in terms of Aquatic Biodiversity Sensitivity; there are no water bodies in the receiving environment that would contain aquatic biodiversity (Figure 17)
- It is Highly Sensitive in terms of Terrestrial Biodiversity Sensitivity and may contain certain plant species that are protected (Figure 18)
- It is Medium in terms of Plant Combined Sensitivity (Figure 19)

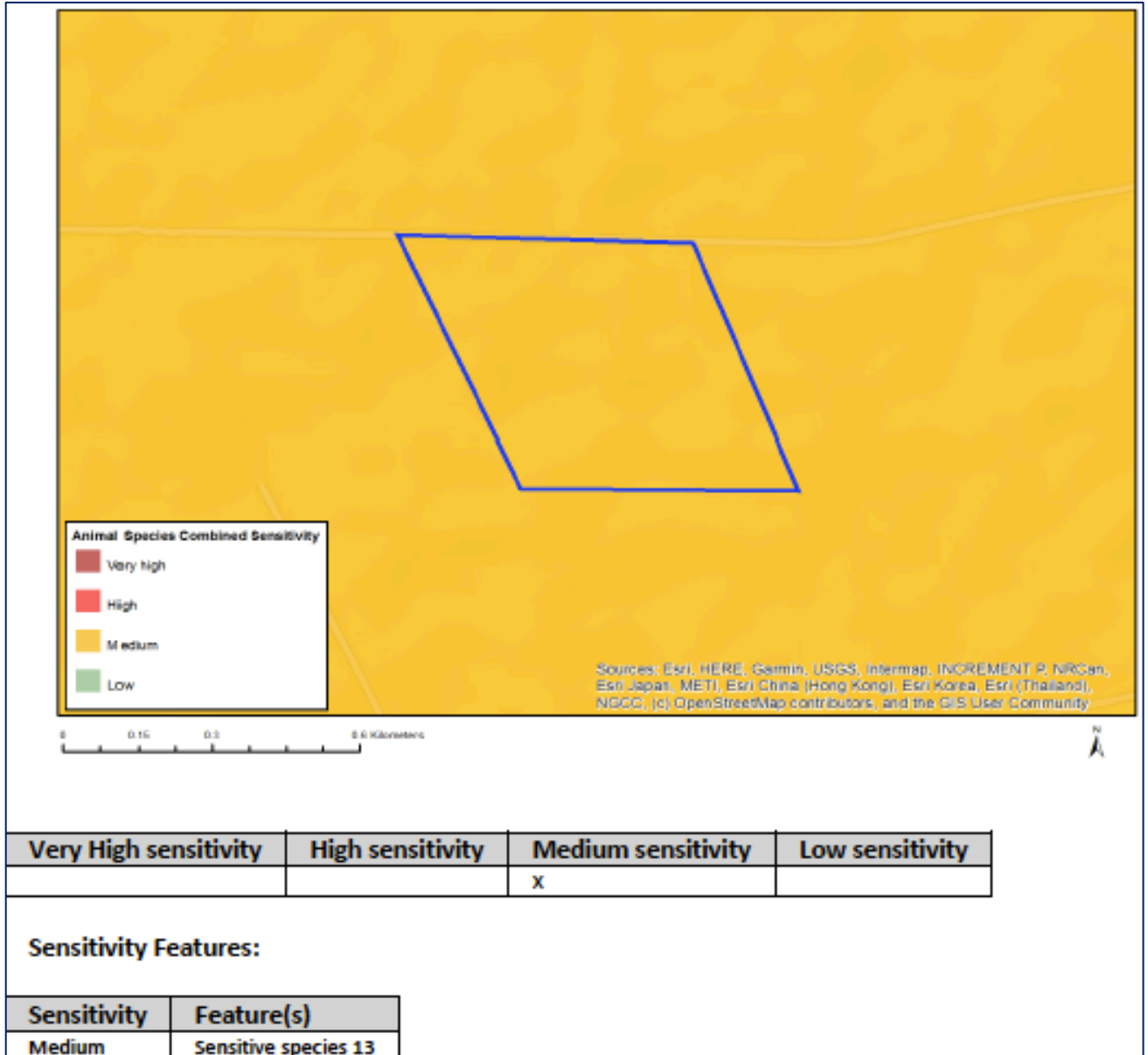


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

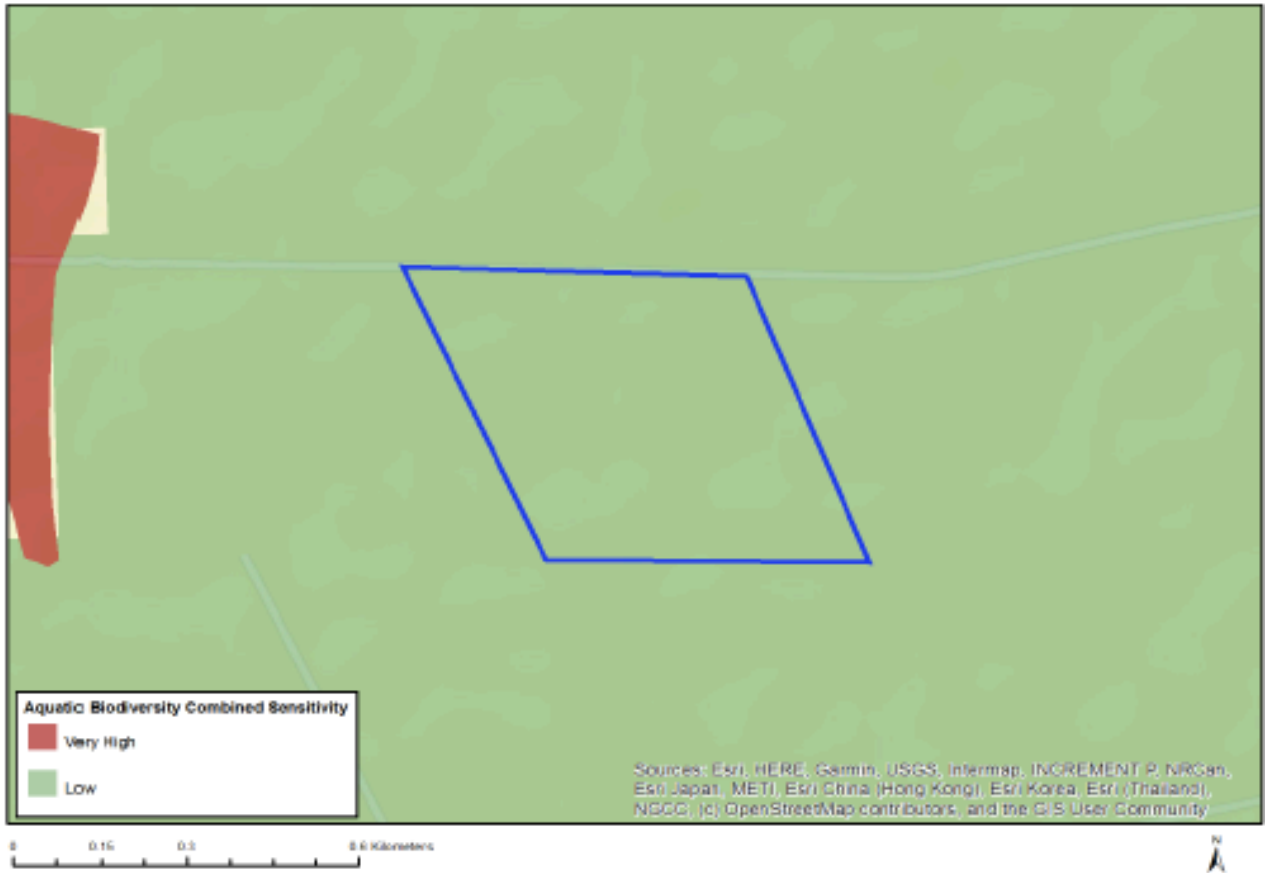
**Sensitivity Features:**

Sensitivity	Feature(s)
High	Small Holdings; Land capability; 06. Low-Moderate/07. Low-Moderate/08. Moderate
Medium	Land capability; 06. Low-Moderate/07. Low-Moderate/08. Moderate

*Figure 15-Site agricultural sensitivity*



*Figure 16- Animal Sensitivity*

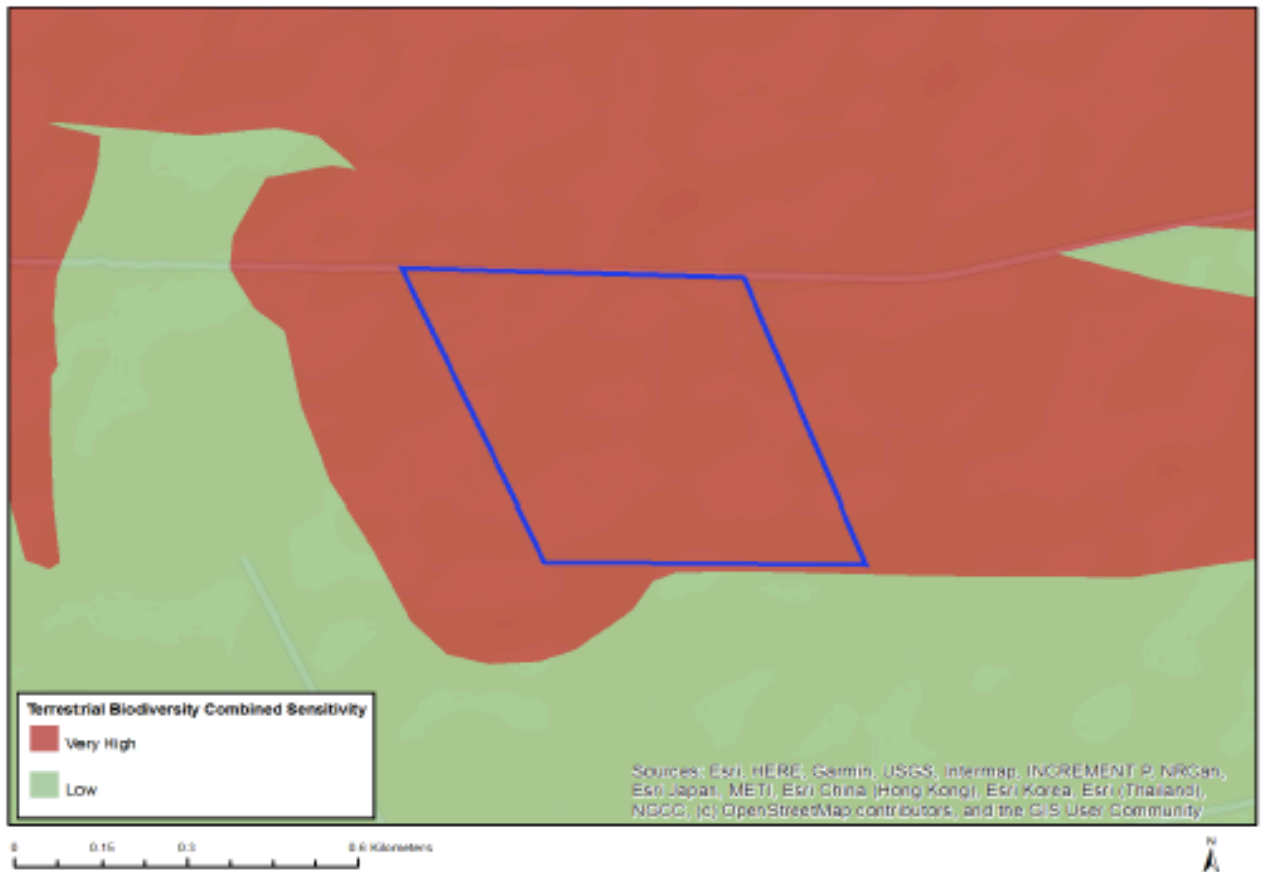


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			<b>X</b>

**Sensitivity Features:**

Sensitivity	Feature(s)
Low	Low sensitivity

*Figure 17-Aquatic Biodiversity Sensitivity*



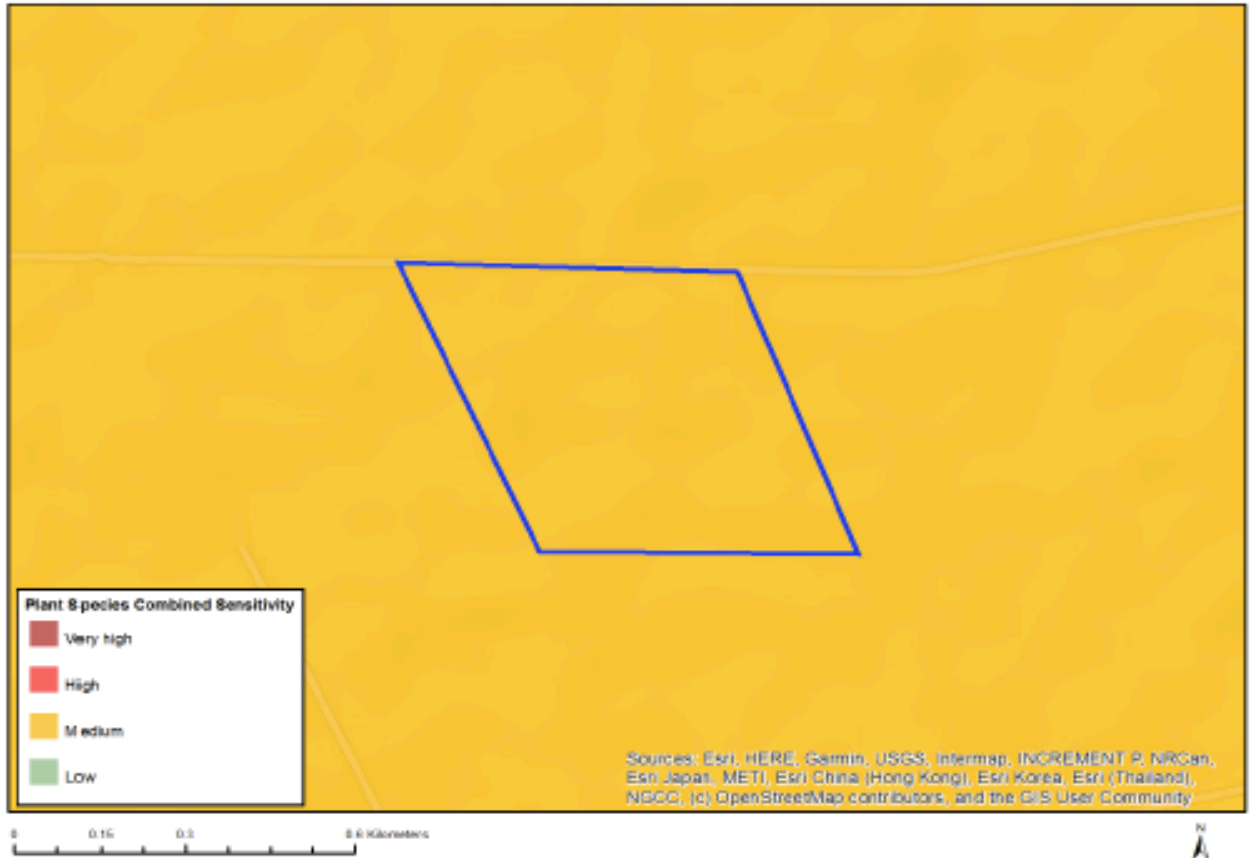
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

**Sensitivity Features:**

Sensitivity	Feature(s)
Very High	Ecological Support Area

*Figure 18-Terrestrial Biodiversity*





Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

**Sensitivity Features:**

Sensitivity	Feature(s)
Medium	<i>Brachycorythis conica subsp. transvaalensis</i>

*Figure 19-Plant species combined sensitivity*

**4.2.1. Conclusions in Terms Natural Setting and Potential to Contribute Cultural Landscape:**

Although varying between High and Medium in terms of plant diversity, no plant species with medicinal potential were identified during the survey. There were also no trees that are of cultural significance, such as morula trees.

**4.3. Significance of the site and associated heritage resources in terms of Section 3 (3)**

This section of the Act states that without limiting the generality of subsections (subsection (1) and (2) of the NHRA, No. 25 of 1999 a place or object is to be considered part of the national estate if it has cultural significance or other unique 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 30 natural or cultural heritage;

- (c) it's potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects; 35
- (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 unique association with a particular community or cultural group 40 for social, cultural or spiritual reasons;
- (h) its strong association with the life, 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.

The assessment of the site (Kloofendale Nature Reserve with all its heritage resources) heavily relied on this section of the Act since the evaluation did not only look at heritage features and objects in isolation but as a collective forming part of the broader cultural landscape (*Table 8*).

**Table 8: Significance criteria in terms of Section 3(3) of the National Heritage Resources Act.**

No	Criteria Used	Site Grading	Site Significance Rating	Definition of Site Significance	Impact Significance from Activities (negative or positive impact)	Nature of Impact (Direct vs Indirect impact)	Mitigation Measures to be Considered
1	The importance of the cultural heritage in the community or pattern of South Africa's history (Historic and political significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	• The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of Positive Impacts:</b> • N/A	
2	Possession of uncommon, rare or endangered aspect of South African natural and cultural heritage significance	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	• The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A.	
3	Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage (Research/scientific significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	• The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> N. A	
4	Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group (Aesthetic significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	• The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.
					<b>Positive Impacts:</b> N/A	<b>Nature of positive Impacts:</b> N.	
5	What is the state of the architectural and structural integrity of the street and streetscape?	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	• The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.
					<b>Positive Impacts:</b> N	<b>Nature of positive Impacts:</b>	

No	Criteria Used	Site Grading	Site Significance Rating	Definition of Site Significance	Impact Significance from Activities (negative or positive impact)	Nature of Impact (Direct vs Indirect impact)	Mitigation Measures to be Considered
6	Importance in demonstrating a high degree of creative or technical achievement at a particular period (Scientific significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A.	
7	Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (Social significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A.	
8	Strong or special association with the life and work of a person, group or organisation of importance in the history of South Africa (Historic significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A.	
9	The significance of the site relating to the history of slavery in South Africa.	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A.	

## 4.2. Historical Significance Rating

***The significance criteria is evaluated in terms of historical, artefactual and spatial significance.***

As the criteria set out in the National Heritage Resources Act, tend to approach heritage from the level of 'national' significance, and few heritage sites and features fall within this category, the second set of criteria is used to determine the regional and local importance of heritage sites. Three sub-categories are used to determine this significance:

- Historical significance – this category determines the social context in which a heritage site and resource need to be assessed. These criteria focus on the history of the 'place', its significance in time and its role in a particular community (human context).
- Architectural significance – This set of criteria aims to assess the artefactual importance of the heritage resource, its physical condition and meaning as an 'object'.
- Spatial significance – focuses on the physical context in which the object and place exist and how it contributed to the landscape, the region, the precinct and neighbourhood.

As the criteria set out in the National Heritage Resources Act tend to approach heritage from the level of 'national' significance, and few heritage sites and features fall within this category. The second set of criteria are used to determine the regional and local importance of heritage sites. Three sub-categories are used to determine this significance (*Table 9*)

Table 9-Assessment of impacts on the history of the area

No	Criteria Used	Site Grading	Significance Rating	Definition of Site Significance	Impact Significance from Proposed Activities (negative or positive impact)	Nature of Impact (Direct vs Indirect impact)	Mitigation Measures to be Considered
1	Is the site associated with a historical person or group?	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A.	
2	Is the site associated with a historical event?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A.	
3	Is the site associated with a religious, economic, social, political or educational activity?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A.	
4	Is the site of archaeological significance? Are any of the buildings or built environment features on the site older than 60 years?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A.	

### 4.3. Landscape Architectural Significance Rating (artefactual significance)

This section assesses the impact significance on the receiving environment landscape and associated landscape feature such as streets and streetscapes (Table 10)

Table 10- Assessment of impact on the receiving environment landscape and landscape features such as streets and streetscapes

No	Criteria Used	Site Grading	Significance Rating	Definition of Site Significance	Impact Significance from Proposed Activities (negative or positive impact)	Nature of Impact (Direct vs Indirect impact)	Mitigation Measures to be Considered
1	Is the street and streetscape an important example of a CoJMM or Roodepoort streetscape or precinct?	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	N/A
					<b>Positive Impacts:</b> • N/A	<b>Nature of Positive Impacts:</b> • N/A	
2	Is the street or streetscape an outstanding example of a particular style or period?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	
					<b>Positive Impacts:</b>	<b>Nature of Positive Impacts:</b>	
3	Does the street or streetscape contain fine landscaping details and reflect exceptional craftsmanship?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	N/A
					<b>Positive Impacts:</b> N/A	<b>Nature of Positive Impacts:</b> N/A	
4	Is the street or streetscape an example of an exceptional industrial, engineering or technological development?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	N/A
					<b>Positive Impacts:</b>	<b>Nature of Positive Impacts:</b>	
5	What is the state of the architectural and structural integrity of the street and streetscape?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	N/A
					<b>Positive Impacts:</b>	<b>Nature of Positive Impacts:</b>	
6	Is the street or streetscape's current and future use in sympathy with its original use (for which they were designed)?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	N/A
					<b>Positive Impacts:</b>	<b>Nature of Positive Impacts:</b>	
7	Were the alterations to the street or streetscape done in sympathy with the original design?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	N/A
					<b>Positive Impacts:</b>	<b>Nature of Positive Impacts:</b>	

#### 4.4. Spatial Significance Rating

In this selection of the impact assessment, the focus is not on heritage features such as buildings, monuments, memorials and other characteristics as single units. The evaluation focuses on evaluating significance in terms of spatial pattern in the landscape, city, town, village, neighbourhood or precinct, forming part of the broader cultural landscape. The assessment is for the following features, not as the single units in the landscape (Table 11):

Table 11- Assessment of spatial pattern of heritage resources in the landscape

No	Criteria Used	Site Grading	Significance Rating	Definition of Site Significance	Impact Significance from Proposed Activities (negative or positive impact)	Nature of Impact (Direct vs Indirect impact)	Mitigation Measures to be Considered
1	Can the site be considered a landmark in the local community, city and region (province)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	• The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.
					<b>Positive Impacts:</b> N/A	<b>Nature of positive Impacts:</b> • N. A	
2	Does the street or any of the adjacent buildings contribute to the character of the neighbourhood?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	• The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> N. A	
3	Do any of the buildings, features and objects contribute to the character of the landscape or streetscape?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	• The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N. A	
4	Does the street relate to the urban network of adjacent streets and streetscapes?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	• The proposed development will not impact on any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N. A	



## 5. DISCUSSION

The study area's physical survey did not yield any archaeological and heritage resources, contrary to the National Environmental Toolkit assessment of the study area showing Medium Archaeological and Heritage Sensitivity. The reason could be because the layer considers data from a much broader study area. For example, the literature review of the region in which the study area is situated is known for archaeological and heritage resources. In addition, the survey of rock outcrops did not yield any material or rocks that may contain palaeontological resources; this is in line with the GeoScience and SAHRA Palaeontological Sensitivity Layer.

The assessment in terms of Section 3 (3) of the NHRA, No. 25 of 1999 for spatial, landscape, architectural significance and the site in terms of the natural setting, its potential to contribute to the cultural landscape the following results are yielded (*Figure 20*):

- Kutamba Estate is situated in an area with High Terrestrial Biodiversity and Medium Combined Plant Sensitivity; however, when assessed in terms of plant species that can contribute to the cultural landscape – no medicinal or cultural significance vegetation was identified in the survey.
- The site also did not contain any natural features that may contribute to the cultural landscape, such as a mountain, forest, cave, or water bodies such as springs often used for traditional healers and churches' associated cultural rituals.
- Regarding Agricultural Sensitivity, the site is in line with the proposed development activities – ideal for agricultural activities with Medium Animal Sensitivity.

Based on these findings, the following conclusions and recommendations are made about Ikhuhu Poultry Farm in Kutamba Estate.



*Figure 20- General images of the site*

*The HIA was developed by NGT Infraco on behalf of Mokgope Consulting CC for Ikhuhu (Pty) Ltd*

## 6. CONCLUSIONS AND RECOMMENDATIONS

- It is concluded that Kutamba Estate, where Ikhuhu Poultry Farm is proposed, does not contain any archaeological and heritage resources. It also falls within an area that is of Low Sensitivity in terms of the Council of Geoscience and SAHRA palaeontological sensitivity layer.
- In terms of the natural environment setting and its potential to contribute to the cultural landscape, Kutamba Estate does not contain any special environmental features important in terms of their cultural heritage significance. These include mountains, forests, caves or water bodies such as wetlands and springs with a cultural association. It also does not contain trees of cultural significance, such as Morula trees or plant species that are of medicinal importance in terms of terrestrial biodiversity, which includes some of the essential terrestrial biodiversity species. Based on these conclusions made about the site, the following recommendation is made.

It is recommended that PHRA-G and SAHRA exercise their discretion and grant the project a **Positive Review Comment** and allow the proposed development to continue as planned.

### **Disclaimer:**

Although a comprehensive survey of the site took place, some archaeological material and unmarked graves are subterranean and may have been missed. As such, they may not have been identified during the survey. If the proposed development activities bring these materials to the surface, they should be treated as **Chance Finds**. Should construction activities unearth such resources, the development activities should immediately stop. An archaeologist is contacted to conduct a site visit, assess the resources and recommend the finds' mitigation measures. SAHRA and PHRA-G should also be informed immediately of such discoveries. No archaeological material or graves should be removed from the site until a heritage specialist has assessed the significance of archaeological materials or identified graves. Then, a permit should be applied with the relevant heritage authority.

Some areas of the proposed development area were covered in high thatch grass; as such, should any stone tool material be discovered during site clearance – they should be reported to the SAHRA APM unit. Construction activities should be stopped until a qualified Stone Age Archaeologist conducts assesses the discovered resources. The resources are mitigated following the receipt of the mitigation permit by the SAHRA APM Unit.

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