Archaeological Impact Assessment

FOR THE PROPOSED DEVELOPMENT ON PORTION 83 OF THE FARM VLAKPLAAS 183 JR, KNOWN AS MAPLETON EXT 15, VOSLOORUS, GAUTENG PROVINCE

Prepared For

Lokisa Environmental Consultants

By

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VERSION 1.0
13 APRIL 2009

KNOWLEDGEMENT OF RECEIPT

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Executive summary

Site name and location: Proposed establishment of industrial, commercial, wholesale trade, speciality retailers, factory outlets, motor trade and related workshops, and related subservient uses known as Mapleton Extention 15, on portion 83 of the farm Vlakplaats 183 JR, Vosloorus, Gauteng.

EIA Consultant: Lokisa Environmental Consultants

Developer: Star Base Properties

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Date of Report: 13 April 2009

1:50 000 map: 2628 AC

Findings of the Assessment: No archaeological significant sites were identified during the survey. During the palaeontological study poorly preserved stromatolites were noted, but no evidence of Quaternary cave deposits. As stromatolites are plentiful in the outcrop area of the Malmani Subgroup in other parts of the country, there is no need to protect these very poorly preserved examples. It is unlikely that Quaternary cave infill will be exposed during excavation procedures, but in order to ensure that no heritage is destroyed a palaeontologist should visit the site if bedrock is exposed by building excavations, but prior to any building being erected.

If these recommendations are adhered by there is from a heritage point of view no reason why the development can not commence.

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

Disclaimer: *Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites like graves could be overlooked during the study. Wits Heritage Contracts Unit and its*

personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.

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- The results of the project;
- The technology described in any report
- Recommendations delivered to the Client.

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.1. INTRODUCTION

Wits Heritage Contracts Unit was contracted by Lokisa Environmental Consultants to conduct an Archaeological Impact Assessment for the proposed establishment of industrial, commercial, wholesale trade, speciality retailers, factory outlets, motor trade and related workshops, and related subservient uses known as Mapleton Extention 15, on portion 83 of the farm Vlakplaats 183 JR, Vosloorus, Gauteng.
The report forms part of the BA for the proposed project. The aim of the study is to identify all heritage sites, document, and assess their importance within Local, Provincial and national context. To assess the impact of the proposed project on non renewable heritage resources and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes in Phase 1: Information collection from various sources and consultations; Phase 2: Physical surveying of the area on foot and by vehicle; and Phase 3: Reporting the outcome of the study.

During the survey, no cultural heritage sites of significance were identified that needs further mitigation. General site conditions and features on sites were recorded by means of photos, GPS location, and description. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to SAHRA provincial office for peer review.

1.2 TERMS OF REFERENCE

Conduct brief desktop study to:

Review available literature, previous heritage studies and other relevant information sources. Gather data and compile a background history of the area. Identify all known and recorded archaeological and cultural sites; and determine whether the area is renowned for any cultural and heritage resources, such as Stone Age sites, Iron Age sites, informal graveyards or historical homesteads.

Conduct a field study to:

Consult with locals (where possible) to gather information on oral history, local history, possible informal graves, cemeteries, and other areas of cultural significance. Systematically survey the proposed project area to locate, identify record, photograph and describe sites of archaeological, historical or cultural interest; and record GPS points of significant areas identified. Determine the levels of significance of the various types of heritage resources recorded in the project area;

Reporting

Identify the anticipated impacts, as well as cumulative impacts, of the operational units of the proposed project activity on the identified heritage resources for all 3 phases of the project, i.e. construction, operation and decommissioning phases. Consider alternatives should any significant sites be impacted adversely by the proposed project. Ensure that all requirements of the local South African Heritage Resources Agency (SAHRA) are met; and ensure that all studies and results are sufficient to comply with ALL the relevant requirements of the Equator Principles, World Bank Standards and IFC Principles and Performance Standards and National legislation. To assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

1.3 Nature of the development

The application is for the establishment of a development for business uses including the establishment of industrial, commercial, wholesale trade, speciality retailers, factory outlets, motor trade and related workshops, and related subservient uses.

1.4 Description of study area

The proposed development area is disturbed by agricultural activities and is vacant at the moment. Refer to main EIA report for geographical, environmental and demographic issues.

2. APPROACH AND METHODOLOGY

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

2.1 PHYSICAL SURVEYING

Due to the nature of cultural remains, the majority that occurs below surface, a physical walk through of the study area was conducted. Wits Heritage Contract Unit was appointed to conduct a survey of the proposed development footprint on portion 83 of the farm Vlakplaats 183 JR. The study area was surveyed over a period of one day, by means of vehicle and extensive surveys on foot by the author and a palaeontologist Prof Bruce Rubidge.

Aerial photographs and 1:50 000 maps of the area were consulted and literature of the area were studied before undertaking the survey. The purpose of this was to identify topographical areas of possible historic and pre-historic activity. All sites discovered both inside and bordering the proposed development area was plotted on 1:50 000 maps and their GPS co-ordinates noted. 35mm photographs on digital film were taken at all the sites.

3. Abbreviations and definitions

3.1 Abbreviations

ASAPA: Association of South African Professional Archaeologists	*BPEO:* Best Practicable Environmental Option
CRM: Cultural Resource Management	*DEA&DP:* Department of Environmental Affairs and Development Planning
DEAT: Department of Environmental Affairs and Tourism	*DWAF:* Department of Water Affairs and Forestry
EIA practitioner: Environmental Impact Assessment Practitioner	*EIA:* Environmental Impact Assessment
EIA: Early Iron Age	*ESA:* Early Stone Age
GPS: Global Positioning System	*HIA:* Heritage Impact Assessment
I&AP: Interested & Affected Party	*IDP:* Integrated Development Plan
LSA: Late Stone Age	*LIA:* Late Iron Age
MSA: Middle Stone Age	*MIA:* Middle Iron Age
NEMA: National Environmental Management Act	*NHR Act:* National Heritage Resources Act
PHRA: Provincial Heritage Resources Agency	*PSSA:* Palaeontologic Society of South Africa
ROD: Record of Decision	*SACLAP:* South African Council for the Landscape Architect Profession
SAHRA: South African Heritage Resources Agency	*SAIA:* South African Institute of Architects
SAPI: South African Planning Institute	*SDF:* Spatial Development Framework

3.2 Definitions

Archaeological resources:

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

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 therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;

Military:

Features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance:

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

Development:

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

•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 hoardings;

•any change to the natural or existing condition or topography

of land;

• any removal or destruction of trees, or removal or vegetation

or topsoil

Heritage resources:

This means any place or object of cultural significance

Stakeholders:

A subgroup of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term includes the proponent, authorities and all interested and affected parties.

4. ARCHAEOLOGICAL LEGISLATION AND BEST PRACTICE

Phase 1 Archaeological Impact Assessments or Heritage Impact Assessments are a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a heritage specialist input is to:

- Identify any heritage resources, which may be affected;
- Assess the nature and degree of significance of such resources;
- Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- Assess the negative and positive impact of the development on these resources;
- Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the Environmental Impact Assessment [EIA] is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999)., Section 38(1), Section 38(8) the National Environmental Management Act (NEMA) and the Mineral and Petroleum Resources Development Act (MPRDA).

The AIA should be submitted, as part of the EIA, BIA or Environmental Management Plan [EMP], to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and required additional development information, as per the EIA, BIA / EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA. Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level).

Minimum standards for reports, site documentation and descriptions are set by the Association of Southern African Professional Archaeologists [ASAPA] in collaboration with SAHRA. ASAPA is a legal body, based in South Africa, representing professional archaeology in the Southern African Development Community [SADC] region. ASAPA is primarily involved in the overseeing of archaeological ethical practice and standards. Membership is based on proposal and secondment by other professional members.

Phase 1 AIA's are primarily concerned with the location and identification of sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidance in the developer's decision making process:

Phase 2 archaeological projects are primarily based on salvage / mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations should be done under a permit issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes as minimum requirements reporting back strategies to SAHRA and deposition of excavated material at a accredited repository.

In the event of a site conservation option being preferred by the developer a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation is conducted on a site, a destruction permit must be applied for from SAHRA before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the South African Heritage Resource Agency (SAHRA). The procedure for Consultation Regarding Burial Grounds and Graves (Section 36(5) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in the category located inside a formal cemetery administrated by a local authority will also require the same authorisation as set out for graves younger than 60 years over and above SAHRA authorisation. If the grave is not situated inside a formal cemetery but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws set by the cemetery authority must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the Office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning, or in some cases the MEC for Housing and Welfare. Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. In order to handle and transport human remains the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

.5. ASSESSMENT CRITERIA

5.1 Evaluation of Heritage sites

This chapter describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance:

- The unique nature of a site
- The integrity of the archaeological deposit
- The wider historic, archaeological and geographic context of the site
- The location of the site in relation to other similar sites or features
- The depth of the archaeological deposit (when it can be determined or is known)
- The preservation condition of the site
- Uniqueness of the site and
- potential to answer present research questions.

5.1.1 Heritage Site Significance and Mitigation Measures

Site significance classification standards prescribed by the South African Heritage Resources Agency (2007) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used for the purpose of this report.

FIELD RATING	***GRADE***	***SIGNIFICANCE***	***RECOMMENDED MITIGATION***
National Significance (NS)	Grade I1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade III A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade III B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	Field Rating IV A	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	Field Rating IV B	Medium Significance	Recording before destruction
Generally Protected C (GP.C)	Field Rating IV C	Low Significance	No further action necessary before destruction

.5. Archaeological Context of study area

The historical background and timeframe of the study area can be divided into the Stone Age, Iron Age and Historical timeframe. These can be divided as follows:

Stone Age

The Stone Age is divided in Early; Middle and Late Stone Age and refers to the earliest people of South Africa who mainly relied on stone for their tools.

Early Stone Age: The period from ± 2.5 million yrs - ± 250 000 yrs ago. Acheulean stone tools are dominant.

Middle Stone Age: Various lithic industries in SA dating from ± 250 000 yrs – 25 000 yrs before present. This period is first associated with archaic *Homo sapiens* and later *Homo sapiens sapiens.* Material culture includes stone tools with prepared platforms and stone tools attached to handles.

Late Stone Age: The period from ± 25 000-yrs before present to the period of contact with either Iron Age farmers or European colonists. This period is associated with *Homo sapiens.* Material culture from this period includes: micro lithic stone tools; ostrich eggshell beads and rock art.

Iron Age

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the Pre-Historic and Historic periods. Similar to the Stone Age it to can be divided into three periods:

The Early Iron Age: Most of the first millennium AD.

The Middle Iron Age: 10th to 13th centuries AD

The Late Iron Age: 14th century to colonial period.

Historic Timeframe

17th Century to present AD (1600 – 2000)

The historic timeframe intermingles with the later parts of the Stone and Iron Age, and can loosely be regarded as times when written and oral recounts of incidents became available.

Archival Map

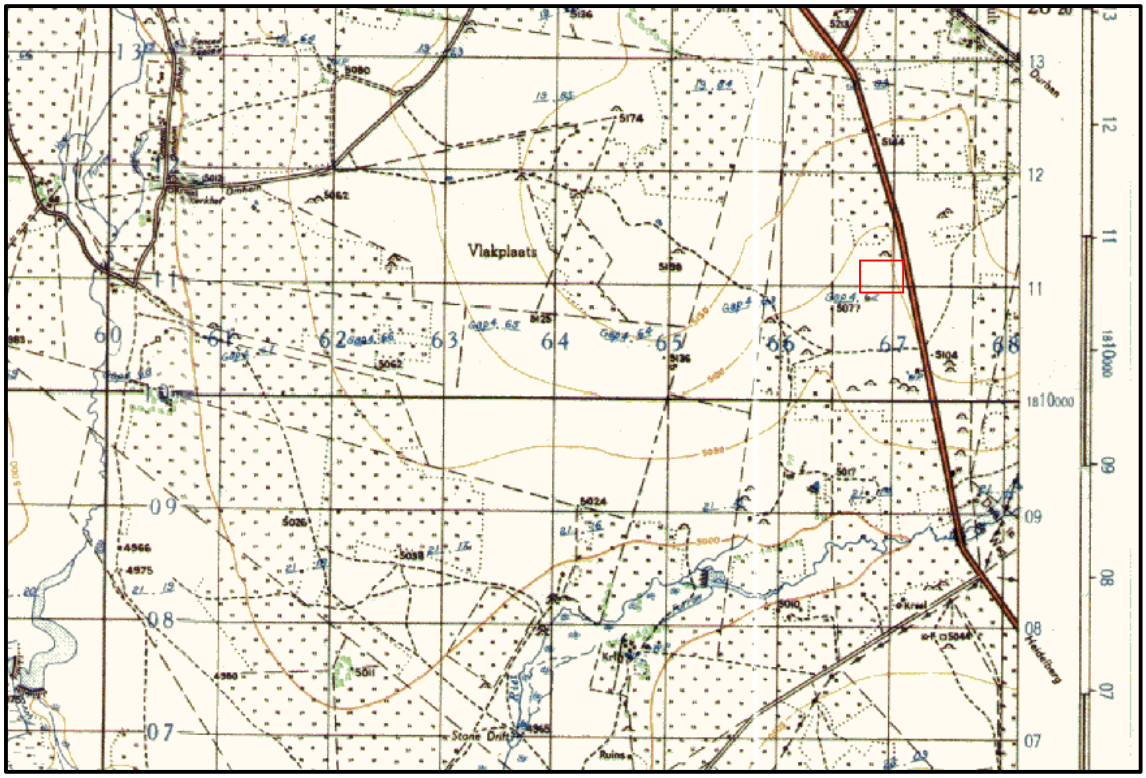

Figure 1: *The depicted map represents an enlarged section of the 2628 AC 1:50 000 topographical Map. The map was surveyed in 1939 and drawn by the Trigonometrical Survey Office in 1945.*

The approximate location of the study area is marked in red. No structures are indicated within the study area. A single hut is marked to the north of the area.

Wits Database

No previously recorded sites are in close proximity to the study area. How ever since the study area is underlined by dolomite the possibility of the occurrence of palaeontlogical sites can not be excluded.

Public consultation

Mr. Elias Mashego who resides on the neighbouring property was consulted, he is not aware of any heritage sites or graves within the study area.

5.2 Probability of occurrence of sites

From the above information it is clear that a medium possibility of the occurrence of cultural heritage sites could be expected in the study area.

A. PALAEONTOLOGICAL LANDSCAPE

CONTEXT

Fossil remains. Such resources are typically found in specific geographical areas, e.g. the Karoo and are embedded in ancient rock and limestone/calcrete formations. Exposed by road cuttings and quarry excavation: *Medium Probability*

B. ARCHAEOLOGICAL LANDSCAPE

CONTEXT

NOTE: *Archaeology is the study of human material and remains (by definition) and is not restricted in any formal way as being below the ground surface*.

*Archaeologica*l remains dating to the following periods can be expected with in the study area:

Stone Age finds

- ESA: *MSA Probability*
- MSA: *Medium Probability*
- LSA: *Medium Probability*
- LSA –Herder: *Low Probability*

Iron Age Finds

- EIA: *Low Probability*
- MIA: *Low Probability*
- LIA: *Medium Probability*

Historical finds

- Historical period: *Low Probability*
- *Historical dumps*: *Low Probability*
- *Structural remains*: *Low Probability*

Military Finds

- *Battle and military sites*: *Low Probability*

Burial/Cemeteries

- *Burials over 100 years*: *Low Probability*
- *Burials over 60 years*: *Low Probability*
- *Burials younger than 60 years: Low Probability*

Subsurface excavations including ground levelling, landscaping, and foundation preparation can expose any number of these.

.6. ARCHAEOLOGICAL SITES OF SIGNIFICANCE

No sites of significance were identified during the survey. The area is disturbed by agricultural activity and more suitable locations for Iron Age Settlements and Stone Age sites occur towards the Suikerbosrand area. Some stromatolites were identified during the paleantological survey. Refer to full report Annexure B

Figure 2: General site conditions

7. ASSUMPTIONS AND LIMITATIONS

Due to the nature of cultural remains that occur, in most cases, below surface, the possibility remains that some cultural remains may not have been discovered during the survey. Low ground visibility is present on parts of the site due to exceptional high vegetation growth and the possibility of the occurrence of unmarked graves can not be excluded. Although Wits Heritage Contracts unit surveyed the area as thorough as possible, it is incumbent upon the developer to inform the relevant heritage agency should further cultural remains be unearthed or laid open during the process of development.

8. ASSESSMENT AND RECOMMENDATIONS

A locality map is provided in ***Annexure A***

From the archival map it is clear that no dwellings older than 60 years occur within the study area and no heritage significant sites were identified during the survey. A search on the archaeological Wits data base yielded no known sites within the study area.

From a archaeological point of view there is no reason why the development can not commence.

.9. LIST OF PREPARES

Jaco van der Walt, Archaeological report

Professor Bruce Rubidge, Paleontological Report

.10. REFERENCES

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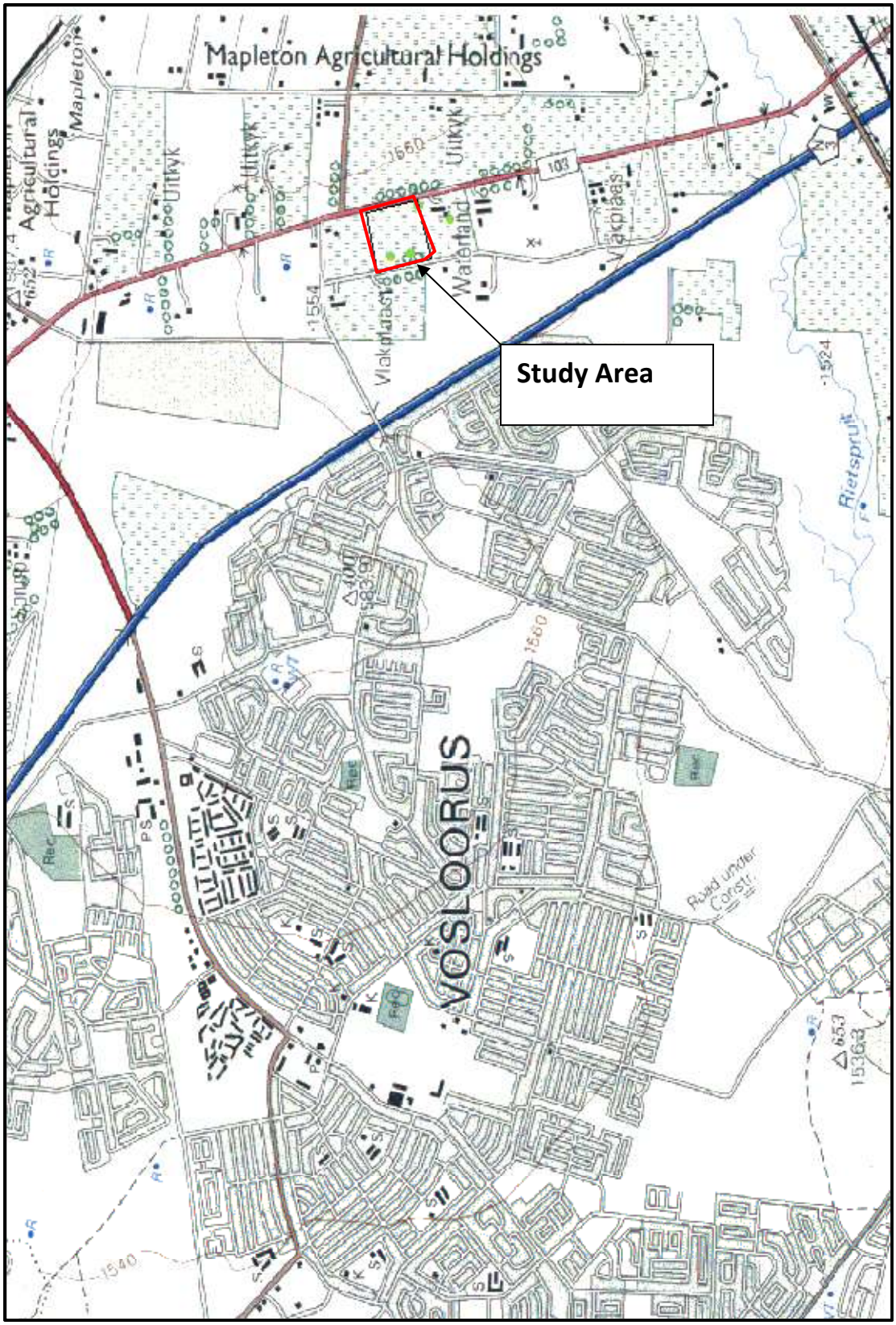
ANNEXURE A: Locality Map


Mapleton Agricultural Holdings
Study Area
VOSLOORUS
Rietspruit
Road under Constr.

PROPOSED DEVELOPMENT; MAPLETON 15 PORTION 83 OF THE FARM VLAKPLAATS 183JR–PALAEONTOLOGICAL IMPACT ASSESSMENT

Introduction

An EIA was undertaken to determine the effect on palaeontological heritage which could result from the proposed establishment of industrial, commercial, wholesale trade, speciality retailers, factory outlets, motor trade and related workshops, business purposes,
retail and related subservient uses on the 8.5653 ha property of Mapleton 15 Portion 83 of the Farm Vlakplaats 183JR on the East Rand.

Generalised Geology of the route traversed

The area surrounding the proposed development is underlain by rocks of the Transvaal Supergroup and Karoo dolerites which are respectively Precambrian and Jurassic in age.

Specific geology of the area to be developed

The entire development will take place on ground underlain by rocks of the Malmani Subgroup of the Transvaal Supergoup which comprises quartzite, chert and dolomite.

Figure 1: View showing the entire property is covered by grassveld

The entire area is covered by grassland (Figure 1) and underlying the grass fields are very small isolated outcrops of dolomite (Figure 2) and quartzite (Figure 3). Most of the area underlain by grassland appears to be covered by thick soil cover, as seen in a few holes which have been dug on the property.

Figure 2: Small outcrop of dolomite

Figure 3: Small isolated outcrop of quartzite

Palaeontological Heritage

The rocks of the Transvaal Supergroup, which are of Late Archaean to Early Proterozoic age (Precambian), are known to have extensive stromatolite fossils in the dolomite rich stratigraphic units of the Malmani Subgroup (Erikssson et al. 2006; Mc Carthy and Rubidge 2005) and in the study area one of the small dolomite exposures does exhibit poorly preserved stromatolitic structures (Figure 4).

Figure 4: Poorly preserved stromatolitic structures in dolomite

Of particular importance in sinkholes and caves, within the dolomitic units of the Malmani Subgroup, are Quaternary-aged sedimentary infill which do contain a variety of mammalian and fossil hominin fossils which have been discovered in the Cradle of Humankind Word Heritage site (Mc Carthy and Rubidge 2005; Partridge et al. 2006). No evidence of sinkholes and sedimentary cave infill were noted in the study area.

Recommendation

The entire area is underlain by rocks of the Malmani Subroup of the Transvaal Supergroup. Poorly preserved stromatolites were noted, and there is no evidence of Quaternary cave deposits. As stromatolites are plentiful in the outcrop area of the Malmani Subgroup in other parts of the country, there is no need to protect these very poorly preserved examples. It is unlikely that Quaternary cave infill will be exposed during excavation procedures, but in order to ensure that

no heritage is destroyed a palaeontologist should visit the site if bedrock is exposed by building excavations, but prior to any building being erected

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Professor Bruce Rubidge