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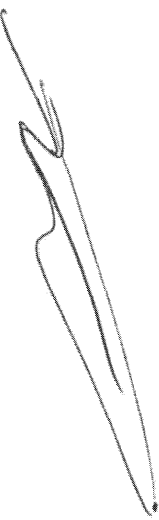
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**The proposed upgrading of the intersection at
Road D 374 and Road D 540 in the Muldersdrift
area**

Cultural Heritage Assessment - Draft



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EXECUTIVE SUMMARY

As we know from legislation the surveying, capturing and management of heritage resources is an integral part of the greater management plan laid down for any major development or historic existing operation. With the proclamation of the National Heritage Resources Act 1999 (Act 25 of 1999) this process has been laid down in no uncertain terms. This legislation aims to underpin the existing legislation, which only addresses this issue at a glance, and gives guidance to developers and existing industries to the management of their Heritage Resources.

The importance of working with and following the guidelines laid down by the South African Heritage Resources Agency cannot be stressed enough.

During the survey no sites of significance were found in the area. It is however highly possible that a layer of topsoil could cover a site, thus we recommend that a specialist be present at the removal of this layer.

If any archaeological sites are recovered they will necessitate further investigation and research in the case of possible development in their vicinity.

Further recommendations made in section 9 of the report must be addressed to facilitate responsible management of the heritage resources in the study area.

Refer to **Appendix 4** for an outline of the proposed archaeological watching brief that is recommended for this project.

The definition of an archaeological watching brief is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposit may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

This definition does not cover chance observations, which should lead to an appropriate archaeological project being designed and implemented, nor do they apply to monitoring for preservation of remains *in situ*.

The purpose of a watching brief is:

- To allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development or other potentially disruptive works
- To provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.
- A watching brief is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

The objective of a watching brief is to establish and make available information about the archaeological resource existing on a site.

It is however recommended that bearing in mind the time frame of the project commencement, further studies be conducted on PL002 that might include test excavations to determine the possibility of a site location.

It is further recommended that this document be seen as a draft up to such a time as the Public Participation process has been completed and all finding pertaining to the Heritage Assessment are updated in the document.

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1. Introduction

Matakoma Consultants was contracted by Teurlings Environmental cc. to conduct a Heritage Assessment for inclusion in the environmental scoping study for the proposed upgrading of the intersection at Road D 374 and Road D 540 in the Muldersdrift area.

The aim of the study is to identify all heritage sites, document and assess their importance within local, provincial and national context. From this we aim to assist the developer in managing the discovered heritage resource in a responsible manner to protect, preserve and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

During consultation with Teurlings Environmental cc. it was decided that the survey would be concentrated on those portions 100m to each side of the referred T-intersection of roads D 374 and D 540.

The report outlines the approach and methodology utilised before and during the survey, which includes in **Phase 1**: Archival research, information collection from various sources, public consultations and aerial photography; **Phase 2**: Physical surveying of the area on foot and vehicle; and **Phase 3**: Reporting the outcome of the study.

During the survey sites of cultural significance were identified. These 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's provincial office for scrutiny.

2. Approach and Methodology

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

2.1 Phase 1

The first phase comprised of an extensive desktop study with the aim of gathering data to compile a background history of the area in a five-kilometre radius. This desktop study covered the following:

Archival research

Utilising data stored in the National as well as Transvaal Archives for information gathering. The aim with this is to compile a data list of archaeological sites, historical sites, graves, architecture, oral history and ethnographical information on the inhabitants of the area.

Information Collection

Data was further gathered from the following sources to provide an account of the history of the area.

- Local Authorities
- South African Heritage Resources Agency (National and Provincial)
- Other Data repositories

Public Consultation

Consultation will also be done in conjunction with the Public Participation Process conducted by Teufings Environmental.

Aerial Photographical Survey

Aerial photographs was utilised to identify possible sites on the study area. Experience has shown this to be a useful tool during surveys.

2.2 Physical Surveying

Due to the nature of cultural remains, the majority that occur below surface, a physical walk through of the study area was conducted.

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. The proposed development area was surveyed over a period of two days, by means of vehicle and extensive surveys on foot by two field surveyors. All sites discovered both inside and bordering the proposed development area were plotted on 1:50 000 maps and their GPS co-ordinates noted. 35mm photographs on ISO 100 colour transparency film were taken at all site and site sketches made.

3. Historical Background of area

Prehistory of the Cradle of Humankind

The aim of this section is to give a broad history of the Cradle of Humankind as found in historical documents and scientific papers. Early history of this area focuses mainly on the area around Sterkfontein, Kromdraai and Plover's Lake, approximately 15 km to the North-west of Krugersdorp. This area is important for its richness in remains of hominid species, Stone Age and Iron Age sites. The following aims to give a short summation of the most important sites recorded in this area.

The 47 000 hectare Cradle of Humankind is a unique location blessed with a greater wealth of prehistory of humankind than almost any other place on earth. Officially called the Sterkfontein, Swartkrans, Kromdraai and Eivrons World Heritage Site, the Cradle contains more than 12 major fossil sites and dozens of minor ones that present us with an intriguing mixture of mystery and revelation about much of our ancient past.

The Cradle of Humankind lies in the Witwatersrand Basin on the edge of the divide between the highveld grasslands and the more vegetative bushveld in the South African province of Gauteng. It is a summer rainfall area where the higher lying reaches are rolling grassland while the well-watered valleys have thick riverine bush and gallery forest thinning into mixed woodlands on the slopes.

Beneath the 2,6 –billion-year-old dolomitic hills found in the Cradle of Humankind lies a series of extensive underground caverns. These geological time capsules have preserved the fossil remnants of tens of thousands of extinct animals, as well as the bones and cultural remains of our own ancestors.

Included in the Cradle of Humankind is the world-famous Sterkfontein Cave, which has become synonymous with the South African search for human origins.

Plover's Lake is one of the closest paleoenvironments sites, and boasts with numerous vertebrate faunal remain finds. Although all the remains found here are that of animal origin, and no artefacts or hominid remains have been recovered, some weathered Middle Stone Age artefacts were recovered during excavations in 1989.

4. Working with legislation.

It is very important that cultural resources be evaluated according to the National Heritage Recourse Act. In accordance with the act we have found the following:

- There are no cultural impacts on any communities in the area, as the communities that are now situated in the area are not related to the community that occurred there in the past.
- These sites are classified as important based on evaluation of the National Heritage Recourses Act 1999 (Act No 25 of 1999) section 3 (3)(a), (3)(d), (3)(c)B and (3)(f). (Refer to **Section 8** of this document for assessment)
- This site should be managed through using the National Heritage Recourses Act 1999 (Act No 25 of 1999) sections 4, 5 and 6 and sections 39-47.
- Please refer to Section 8 for Management Guidelines.

5. Assessment Criteria

This chapter describes the evaluation criteria used for the sites listed below.

The significance of archaeological sites was based on five main criteria:

- **site integrity** (i.e. primary vs. secondary context),
- **amount of deposit, range of features** (e.g., stonewalling, stone tools and enclosures),
- **uniqueness** and

- **potential** to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows:

- A- no further action necessary;
- B- mapping of the site and controlled sampling required;
- C- preserve site, or extensive data collection and mapping of the site; and
- D- preserve site

Impacts on these sites by mining will be evaluated as follows

IMPACT

The potential environmental impacts that may result from mine activities.

NATURE AND EXISTING MITIGATION

Natural conditions and conditions inherent in the project design that alleviate (control, moderate, curb) impacts.

EVALUATION

Significance

The significance rating scale is as follows:

VERY HIGH: Of the highest order possible within the bounds of impacts, which could occur.

In the case of negative impacts, there would be no possible mitigation and/or remedial activity of offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit.

HIGH: Impacts of a substantial order. In the case of negative impacts, mitigation and/or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these.

In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.

MODERATE: Impact would be real but not substantial within the bounds of those, which could occur. In the case of negative impacts, mitigation and/or remedial activity would be both

feasible and fairly easily possible. In the case of positive impacts, other means of achieving these benefits would be about equal, cost and effort.

LOW: Impact would be of low order and with little effect. In the case of negative impacts, mitigation and/or remedial activity would be either easily achieved or little would be required, or both. In case of positive impacts, alternative means of achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.

VERY LOW: Impact would be negligible. In the case of negative impacts, almost no mitigation and/or remedial activity would be needed, and any minor steps which might be needed would be easy, cheap and simple. In the case of positive impacts, alternative means would be almost all likely to be better, in one or a number of ways, than this means of achieving the benefit.

NO EFFECT: There would be no impact at all - not even a very low impact on the system or any of its parts.

Certainty

DEFINITE: More than 90% sure of a particular fact. Substantial supportive data exist to verify the assessment.

PROBABLE: Over 70% sure of a particular fact, or of the likelihood of impact occurring.

POSSIBLE: Only over 40% sure of a particular fact or of the likelihood of an impact occurring.

UNSURE: Less than 40% sure of a particular fact or likelihood of an impact occurring.

Duration

SHORT TERM: 0 to 5 years

MEDIUM: 6 to 20 years

LONG TERM: more than 20 years

DEMOLISHED: site will be demolished or is already demolished

Example

Evaluation

| Significance | Certainty | Duration | Mitigation |
|---------------|------------|------------------|------------|
| high negative | > 90% sure | long: > 20 years | A |

6. Sites of Archaeological Significance

6.1. PL 001

6.1.1. The identification and mapping of all heritage resources in the affected area.

Co-ordinates: 25°58'52.9" S

27°47'23.9" E

This area is disturbed due to cultivation. The area seems to have been part of a historic floodplain. Drainage ditches have been dug within the field and three artefacts were found in one of these ditches. The artefacts that were found were Middle Stone Age lithics not measuring more than 5cm. The artefacts consisted of one flake, a partial blade and a core.

6.1.2. An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 3(3) of the National Heritage Recourses Act 1999 (Act No 25of 1999).

Significance

This site is classified as important based on evaluation of the National Heritage Recourses Act 1999 (Act No 25of 1999)

- Section 3(3)(a) – its importance in the community, or pattern of South Africa's history. **Not applicable.**
- Section 3(3)(b) – its possession of uncommon, rare or endangered aspects of south Africa's natural or cultural heritage. **Not applicable.**
- Section 3(3)(c) – its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage. **Not applicable.**
- Section 3(3)(d) – its importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects. **Not applicable.**
- Section 3(3)(e) – its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group. **Not applicable.**

- Section 3(3)(f) – its importance in demonstrating a high degree of creative or technical achievement at a particular period. **Not applicable.**
- Section 3(3)(g) - its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. **Not applicable.**
- **Section 3(3)(h)** – its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa. **Not applicable.**
- Section 3(3)(i) – sites of significance relating to the history of slavery in South Africa. **Not applicable.**

6.1.3. An assessment of the impact of the development on such heritage recourses.

The lithics found were not in a primary context and was probably washed down from other localities by storm water. The amount of lithics found was not significant and no deposits could be seen. From this the following evaluation is made

Impact Evaluation

| Significance | Certainty | Duration | Mitigation |
|-------------------|-----------|-----------|------------|
| Very Low negative | Possible | Long term | A |

6.1.4. The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources.

Consultation will also be done in conjunction with the Public Participation Process conducted by Teurlings Environmental.

6.1.5. If heritage resources will be affected by the proposed development, the consideration of alternatives.

Refer to section 9.

6.1.6. Plans for mitigation of any adverse effects during and after the completion of the proposed development.

Refer to section 9.

- **Section 3(3)(h)** – its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa. **Not applicable.**
- Section 3(3)(i) – sites of significance relating to the history of slavery in South Africa. **Not applicable.**

6.2.3. An assessment of the impact of the development on such heritage recourses

A prominent dolomite outcrop characterises the area. This type of dolomite outcrop displaying areas of fissure infilling that is consistent with other find sites within the COH. Assuming the area to be a possible site. The site integrity of the area, except for a small portion close to the existing road, is considered to be of primary context. Without further excavations it is impossible to predict the extent of the deposits.

Impact Evaluation

| Significance | Certainty | Duration | Mitigation |
|--------------------------|-----------|-----------|------------|
| Low to moderate negative | Possible | Long term | B |

6.2.2. The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources.

Consultation will also be done in conjunction with the Public Participation Process conducted by Teurlings Environmental.

6.2.4. If heritage resources will be affected by the proposed development, the consideration of alternatives.

Refer to Section 9

6.2.5. Plans for mitigation of any adverse effects during and after the completion of the proposed development.

Refer to Section 9.

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. Although Matakoma Consultants 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. Legal and policy requirements

In areas where there has not yet been a systematic survey to identify conservation worthy places, a permit is required to alter or demolish any structure older than 60 years. This will apply until a survey has been done and identified heritage resources are formally protected.

Archaeological and palaeontological sites and materials and meteorites are the source of our understanding of the evolution of the earth, life on earth and the history of people. In the new legislation, permits are required to damage, destroy, alter or disturb them. People who already possess material are required to register it.

The management of heritage resources are integrated with environmental resources and this means that before development takes place heritage resources are assessed and, if necessary, rescued.

In addition to the formal protection of culturally significant graves, all graves, which are older than 60 years and are not in a cemetery (such as ancestral graves in rural areas), are protected. The legislation protects the interests of communities that have interest in the graves: they may be consulted before any disturbance takes place.

The graves of victims of conflict and those associated with the liberation struggle will be identified, cared for, protected and memorials erected in their honour.

Anyone who intends to undertake a development must notify the heritage resource authority and if there is reason to believe that heritage resources will be affected, an impact assessment report must be compiled at the developer's cost. Thus developers

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

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

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

- a) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, meteorites and rare geological specimens;
- b) visual art objects;
- c) military objects;
- d) numismatic objects;
- e) objects of cultural and historical significance;
- f) objects to which oral traditions are attached and which are associated with living heritage;
- g) objects of scientific or technological interest;
- h) books, records, documents, photographic positives and negatives, graphic material, film or video or sound recordings, excluding those that are public records as defined in section 1 (xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996), or in a provincial law pertaining to records or archives; and
- i) any other prescribed category.

If it is necessary to refer to any of the above-mentioned objects, the National Heritage Act (Act 25 of 1999 Sections 31-38) are included in Appendix 2.

Under the new National Heritage Resources Act (Act No. 25 of 1999), provisions are made that deal with, and offer protection, to all historic and pre-historic cultural remains, including graves and human remains.

Graves younger than 60 years fall under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the Office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning, or in some cases the MEC for Housing and Welfare. Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions,

laws and by-laws must also be adhered to. In order to handle and transport human remains the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

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

Refer to **Appendix 2** for further information on legislation.

9. Assessment and recommendations

During preparations for the survey the main information gathered for the Cradle of Humankind area leaned towards the probability of mammalian and hominid remains and Stone Age discoveries in the study area.

No historical sites were identified during research.

The physical survey of the study area identified one find spot of Stone Age artefacts. Most of these stone tool finds are associated with Middle Stone Age (MSA) technology.

A heritage resources management plan must also be drawn up for managing the resources during construction of the intersection. This must include basic training for construction staff on possible finds, action steps for mitigation measures, surface collections, excavations and communication routes to follow in the case of a discovery.

Refer to **Appendix 4** for an outline of the proposed archaeological watching brief that is recommended for this project.

The definition of an archaeological watching brief is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposit may be disturbed or destroyed.

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The objective of a watching brief is to establish and make available information about the archaeological resource existing on a site.

It is however recommended that bearing in mind the time frame of the project commencement, further studies be conducted on PL002 that might include test excavations to determine the possibility of a site location.

Matakoma Consultants can be contacted on the way forward in this regard.

10. List of prepares

- Wouter Fourie, BA (Hon) Archaeology
- Melissa Ramsden, BA (Hon) Archaeology

11. Personal Communications

The public participation process will be completed in conjunction with Teurings Environmental.

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