

# HERITAGE IMPACT ASSESSMENT

(REQUIRED UNDER SECTION 38(8) OF THE NHRA (No. 25 OF 1999))

FOR THE PROPOSED ACCURATE TRADING 47 (PTY) LTD TRUCK STOP, FILLING  
STATION & ASSOCIATED INFRASTRUCTURE ON ERVEN 425 AND 426,  
PIENAARSRIVIER, BELA-BELA, LIMPOPO

**Type of development:**

Filling Station

**Client:**

Exigent Engineering Consultants

**Environmental Impact Practitioner information:**

**Madeleine Knoetze**

**E – mail:**

madeleine@exigent.co.za

**Applicant:**

**ACCURATE TRADING 47 (PTY) LTD**



**HCAC - Heritage Consultants**

Private Bag X 1049

Suite 34

Modimolle

0510

Tel: 082 373 8491

Fax: 086 691 6461

E-Mail: jaco@heritageconsultants.co.za

Report Author:

Mr. J. van der Walt

Project Reference:

HCAC Project number 2151

Report date:

July 2021

## APPROVAL PAGE

|                                   |                                                                                                 |
|-----------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Project Name</b>               | Pienaarsrivier Filling Station                                                                  |
| <b>Report Title</b>               | Heritage Impact Assessment for the Proposed Pienaarsrivier Filling Station, North West Province |
| <b>Authority Reference Number</b> | TBC                                                                                             |
| <b>Report Status</b>              | Draft Report                                                                                    |
| <b>Applicant Name</b>             | Accurate Trading 47 (Pty) Ltd                                                                   |

|                      | <b>Name</b>       | <b>Qualifications and Certifications</b>  | <b>Date</b> |
|----------------------|-------------------|-------------------------------------------|-------------|
| <b>Archaeologist</b> | Jaco van der Walt | MA Archaeology<br>ASAPA #159<br>APHP #114 | July 2021   |

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**Amendments on Document**

| Date | Report Reference Number | Description of Amendment |
|------|-------------------------|--------------------------|
|      |                         |                          |
|      |                         |                          |
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|      |                         |                          |

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## REPORT OUTLINE

Appendix 6 of the GNR 326 EIA Regulations published on 7 April 2017 provides the requirements for specialist reports undertaken as part of the environmental authorisation process. In line with this, Table 1 provides an overview of Appendix 6 together with information on how these requirements have been met.

**Table 1. Specialist Report Requirements.**

| Requirement from Appendix 6 of GN 326 EIA Regulation 2017                                                                                                                                                                                                                                                                                                                                                                                        | Chapter                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| (a) Details of -<br>(i) the specialist who prepared the report; and<br>(ii) the expertise of that specialist to compile a specialist report including a curriculum vitae                                                                                                                                                                                                                                                                         | Section a<br>Section 12            |
| (b) Declaration that the specialist is independent in a form as may be specified by the competent authority                                                                                                                                                                                                                                                                                                                                      | <i>Declaration of Independence</i> |
| (c) Indication of the scope of, and the purpose for which, the report was prepared                                                                                                                                                                                                                                                                                                                                                               | Section 1                          |
| (cA) an indication of the quality and age of base data used for the specialist report                                                                                                                                                                                                                                                                                                                                                            | Section 3.4 and 7.1.               |
| (cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;                                                                                                                                                                                                                                                                                                              | 9                                  |
| (d) Duration, Date and season of the site investigation and the relevance of the season to the outcome of the assessment                                                                                                                                                                                                                                                                                                                         | Section 3.4                        |
| (e) Description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used                                                                                                                                                                                                                                                                                             | Section 3                          |
| (f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of site plan identifying site alternatives;                                                                                                                                                                                                           | Section 8 and 9                    |
| (g) Identification of any areas to be avoided, including buffers                                                                                                                                                                                                                                                                                                                                                                                 | Section 8 and 9                    |
| (h) Map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers                                                                                                                                                                                                                                                        | Section 8                          |
| (l) Description of any assumptions made and any uncertainties or gaps in knowledge                                                                                                                                                                                                                                                                                                                                                               | Section 3.7                        |
| (j) a description of the findings and potential implications of such findings on the impact of the proposed activity <b>including identified alternatives on the environment</b> or activities;                                                                                                                                                                                                                                                  | Section 9                          |
| (k) Mitigation measures for inclusion in the EMPr                                                                                                                                                                                                                                                                                                                                                                                                | Section 10.1                       |
| (l) Conditions for inclusion in the environmental authorisation                                                                                                                                                                                                                                                                                                                                                                                  | Section 10. 1.                     |
| (m) Monitoring requirements for inclusion in the EMPr or environmental authorisation                                                                                                                                                                                                                                                                                                                                                             | Section 10. 5.                     |
| (n) Reasoned opinion -<br>(i) as to whether the proposed activity, activities or portions thereof should be authorised;<br>(iA) regarding the acceptability of the proposed activity or activities; and<br>(ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan | Section 10.3                       |
| (o) Description of any consultation process that was undertaken during the course of preparing the specialist report                                                                                                                                                                                                                                                                                                                             | Section 6                          |
| (p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto; and                                                                                                                                                                                                                                                                                                                | Refer to BAR report                |
| (q) Any other information requested by the competent authority                                                                                                                                                                                                                                                                                                                                                                                   | Section 13                         |

## Executive Summary

Exigent Engineering Consultants CC were appointed as the Environmental Assessment Practitioner (EAP) to conduct a Basic Assessment (BA) for the proposed Pienaarsrivier Filling Station. The proposed development is to be constructed on Erven 425 and 426 of Pienaarsrivier, located Southeast of the intersection of Catanho Street and the D626, Limpopo Province. HCAC conducted a Heritage Impact Assessment (HIA) for the project as part of the environmental authorization process to assess possible impacts to heritage resources by the proposed development. The study area was assessed on desktop level and by a non-intrusive field survey. Key findings of the assessment include:


- The study area is undeveloped, characterised by dumping in an open area, that has recently been burnt.
- A visual and physical inspection of the proposed site recorded no standing structures older than 60 years or archaeological finds of significance.
- Based on the South African Heritage Resources Information Services (SAHRIS) Palaeontological map, the area is of insignificant paleontological sensitivity and no further studies are required for this aspect.

No significant heritage resources will be affected by the development and the impact of the project on heritage resources are considered to be low. The project can commence based on the implementation of the recommendations in this report and the approval of SAHRA.

## Recommendations:

- Implementation of a chance find procedure for the project.

**Declaration of Independence**

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Specialist Name</b>             | Jaco van der Walt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Declaration of Independence</b> | <p>I declare, as a specialist appointed in terms of the National Environmental Management Act (Act No 108 of 1998) and the associated 2014 Environmental Impact Assessment (EIA) Regulations, that I:</p> <ul style="list-style-type: none"> <li>• I act as the independent specialist in this application;</li> <li>• I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;</li> <li>• I declare that there are no circumstances that may compromise my objectivity in performing such work;</li> <li>• I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;</li> <li>• I will comply with the Act, Regulations and all other applicable legislation;</li> <li>• I have no, and will not engage in, conflicting interests in the undertaking of the activity;</li> <li>• I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;</li> <li>• All the particulars furnished by me in this form are true and correct; and</li> <li>• I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.</li> </ul> |
| <b>Signature</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Date</b>                        | 07/07/2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**a) Expertise of the specialist**

Jaco van der Walt has been practising as a CRM archaeologist for 15 years. He obtained an MA degree in Archaeology from the University of the Witwatersrand focussing on the Iron Age in 2012 and is a PhD candidate at the University of Johannesburg focussing on Stone Age Archaeology with specific interest in the Middle Stone Age (MSA) and Later Stone Age (LSA). Jaco is an accredited member of ASAPA (#159) and have conducted more than 500 impact assessments in Limpopo, Mpumalanga, North West, Free State, Gauteng, KZN as well as he Northern and Eastern Cape Provinces in South Africa.

Jaco has worked on various international projects in Zimbabwe, Botswana, Mozambique, Lesotho, DRC Zambia and Tanzania. Through this, he has a sound understanding of the IFC Performance Standard requirements, with specific reference to Performance Standard 8 – Cultural Heritage.

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**ABBREVIATIONS**

|                                                                                   |
|-----------------------------------------------------------------------------------|
| ASAPA: Association of South African Professional Archaeologists                   |
| BGG Burial Ground and Graves                                                      |
| BIA: Basic Impact Assessment                                                      |
| CFPs: Chance Find Procedures                                                      |
| CMP: Conservation Management Plan                                                 |
| CRR: Comments and Response Report                                                 |
| CRM: Cultural Resource Management                                                 |
| DEFF: Department of Environment, Forestry and Fisheries                           |
| EA: Environmental Authorisation                                                   |
| EAP: Environmental Assessment Practitioner                                        |
| ECO: Environmental Control Officer                                                |
| EIA: Environmental Impact Assessment*                                             |
| EIA: Early Iron Age*                                                              |
| EIA Practitioner: Environmental Impact Assessment Practitioner                    |
| EMPr: Environmental Management Programme                                          |
| ESA: Early Stone Age                                                              |
| ESIA: Environmental and Social Impact Assessment                                  |
| GIS Geographical Information System                                               |
| GPS: Global Positioning System                                                    |
| GRP Grave Relocation Plan                                                         |
| HIA: Heritage Impact Assessment                                                   |
| LIA: Late Iron Age                                                                |
| LSA: Late Stone Age                                                               |
| MEC: Member of the Executive Council                                              |
| MIA: Middle Iron Age                                                              |
| MPRDA: Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) |
| MSA: Middle Stone Age                                                             |
| NEMA National Environmental Management Act, 1998 (Act No. 107 of 1998)            |
| NHRA National Heritage Resources Act, 1999 (Act No. 25 of 1999)                   |
| NID Notification of Intent to Develop                                             |
| NoK Next-of-Kin                                                                   |
| PRHA: Provincial Heritage Resource Agency                                         |
| SADC: Southern African Development Community                                      |
| SAHRA: South African Heritage Resources Agency                                    |

*\*Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

**GLOSSARY**

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

## 1 Introduction and Terms of Reference:

HCAC was appointed to conduct a HIA for the proposed filling station development located to the west of the N1 at the town of Pienaarsrivier in the Limpopo Province (Figure 1.1 to 1.4). The report forms part of Basic Assessment (BA) and Environmental Management Programme Report (EMPr) for the development.

The aim of the study is to survey the proposed development footprint to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves 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. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999). The report outlines the approach and methodology utilized before and during the survey, which includes Phase 1, review of relevant literature; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey, no heritage resources were recorded. General site conditions and features on sites were recorded by means of photographs, GPS locations and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report. SAHRA as a commenting authority under section 38(8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) require all environmental documents, compiled in support of an Environmental Authorisation application as defined by NEMA EIA Regulations section 40 (1) and (2), to be submitted to SAHRA for commenting. Upon submission to SAHRA the project will be automatically given a case number as reference. As such the EIA report and its appendices must be submitted to the case as well as the EMPr, once it's completed by the Environmental Assessment Practitioner (EAP).

### 1.1 Terms of Reference

#### Field study

Conduct a field study to: (a) locate, identify, record, photograph and describe sites of archaeological, historical, or cultural interest; b) record GPS points of sites/areas identified as significant areas; c) determine the levels of significance of the various types of heritage resources affected by the proposed development.

#### Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have 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 studies and results comply with the relevant legislation, SAHRA minimum standards and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999).

## 1.2 Project Description

The project consists of a proposed filling station as described in Table 2 and 3.

**Table 2: Project Description**

|                                               |                                     |
|-----------------------------------------------|-------------------------------------|
| <b>Property</b>                               | Erven 425 and 426 of Pienaarsrivier |
| <b>Magisterial District</b>                   | Bela Bela Local Municipality        |
| <b>Central co-ordinate of the development</b> | 25°12' 19.87"S and 28°17' 56.93"E   |

**Table 3: Infrastructure and project activities**

|                            |                                               |
|----------------------------|-----------------------------------------------|
| <b>Type of development</b> | Filling Station                               |
| <b>Size of development</b> | 1.49 Hectares                                 |
| <b>Project Components</b>  | Filling station and associated infrastructure |

## 1.3 Alternatives

No alternatives were provided to be assessed although the extent of the area assessed allows for siting of the development to minimise impacts to heritage resources.

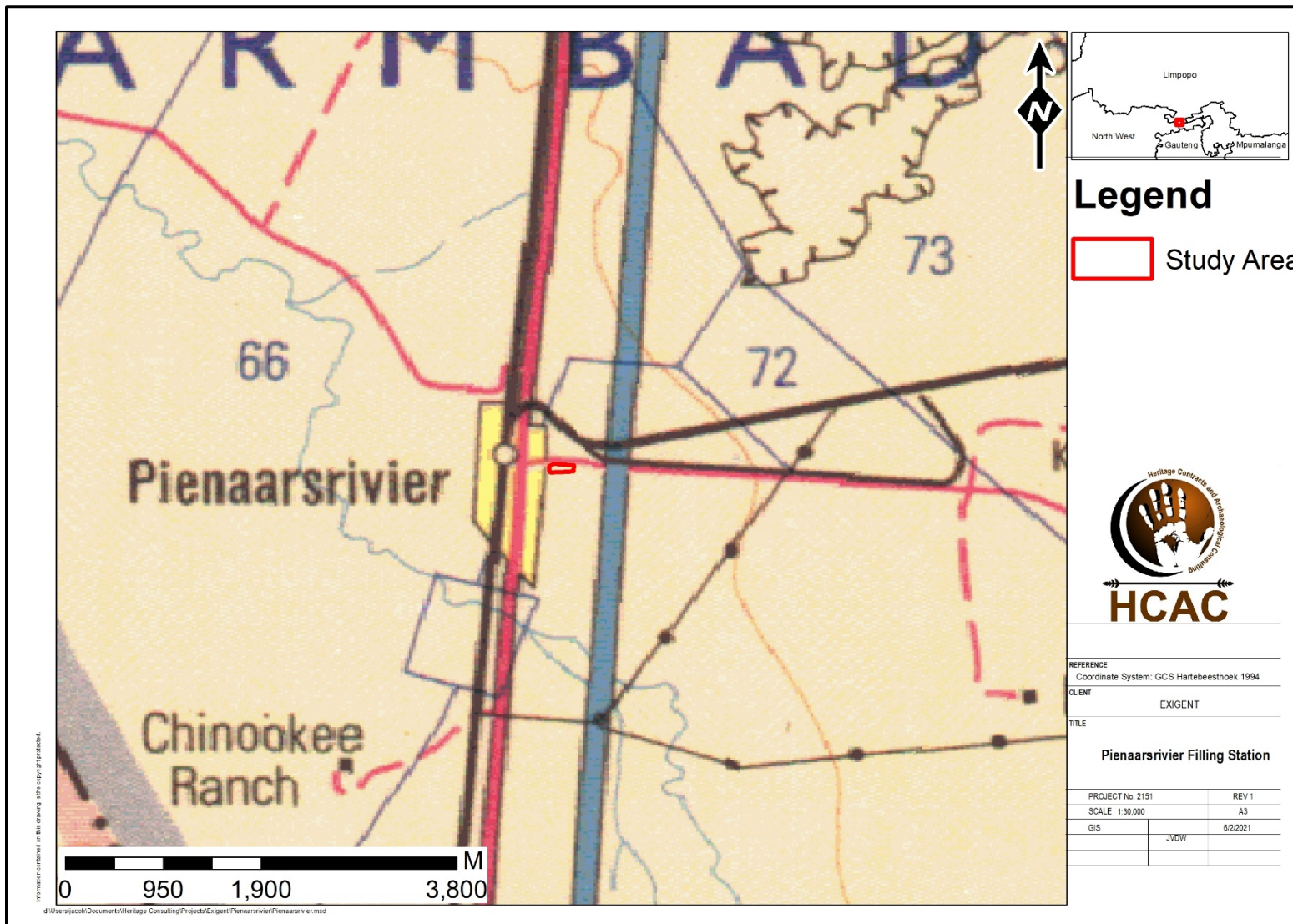


Figure 1-1. Regional setting (1:250 000 topographical map.)



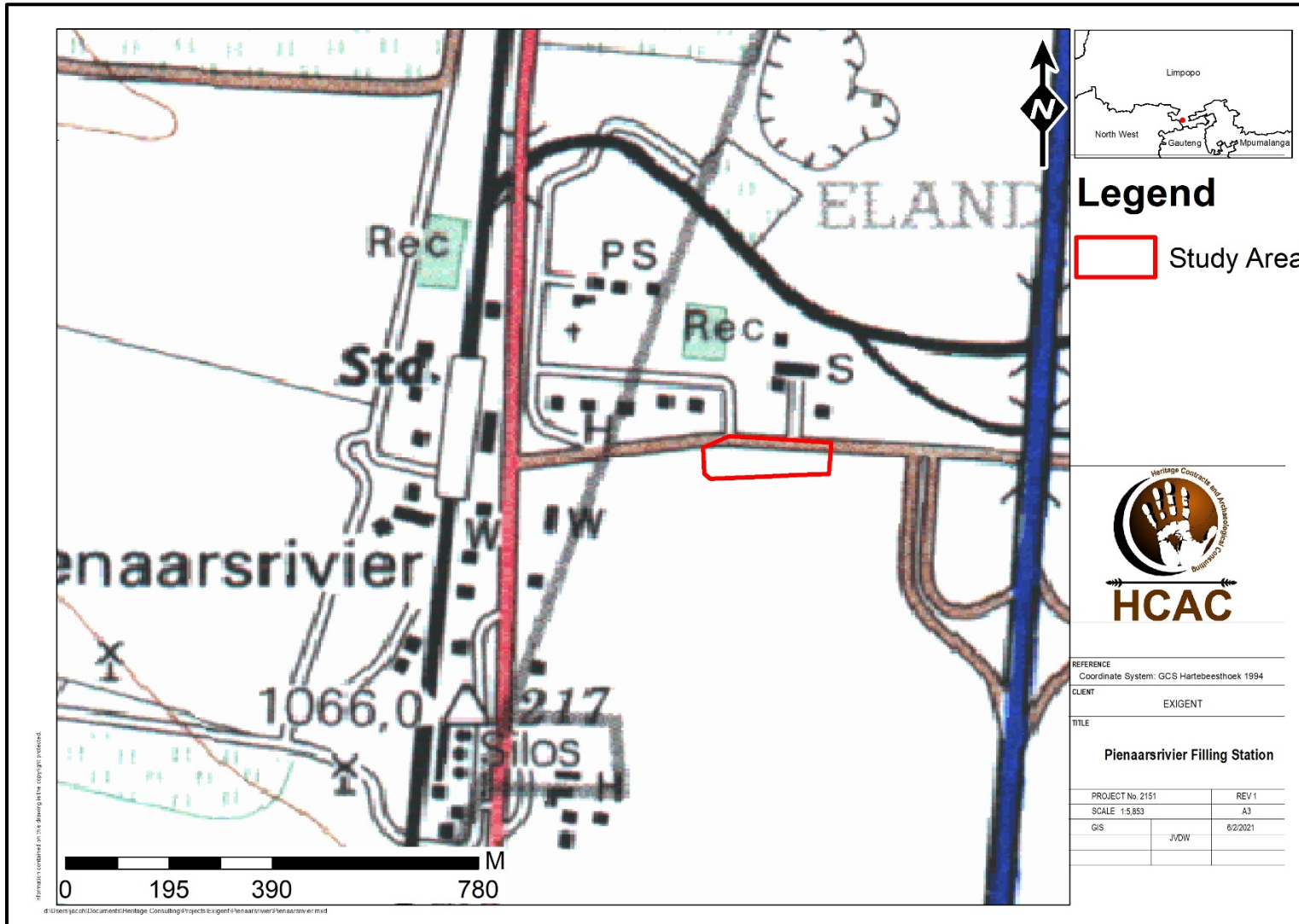


Figure 1-2: Local setting (1:50 000 topographical map) indicating the filling station (red polygon).

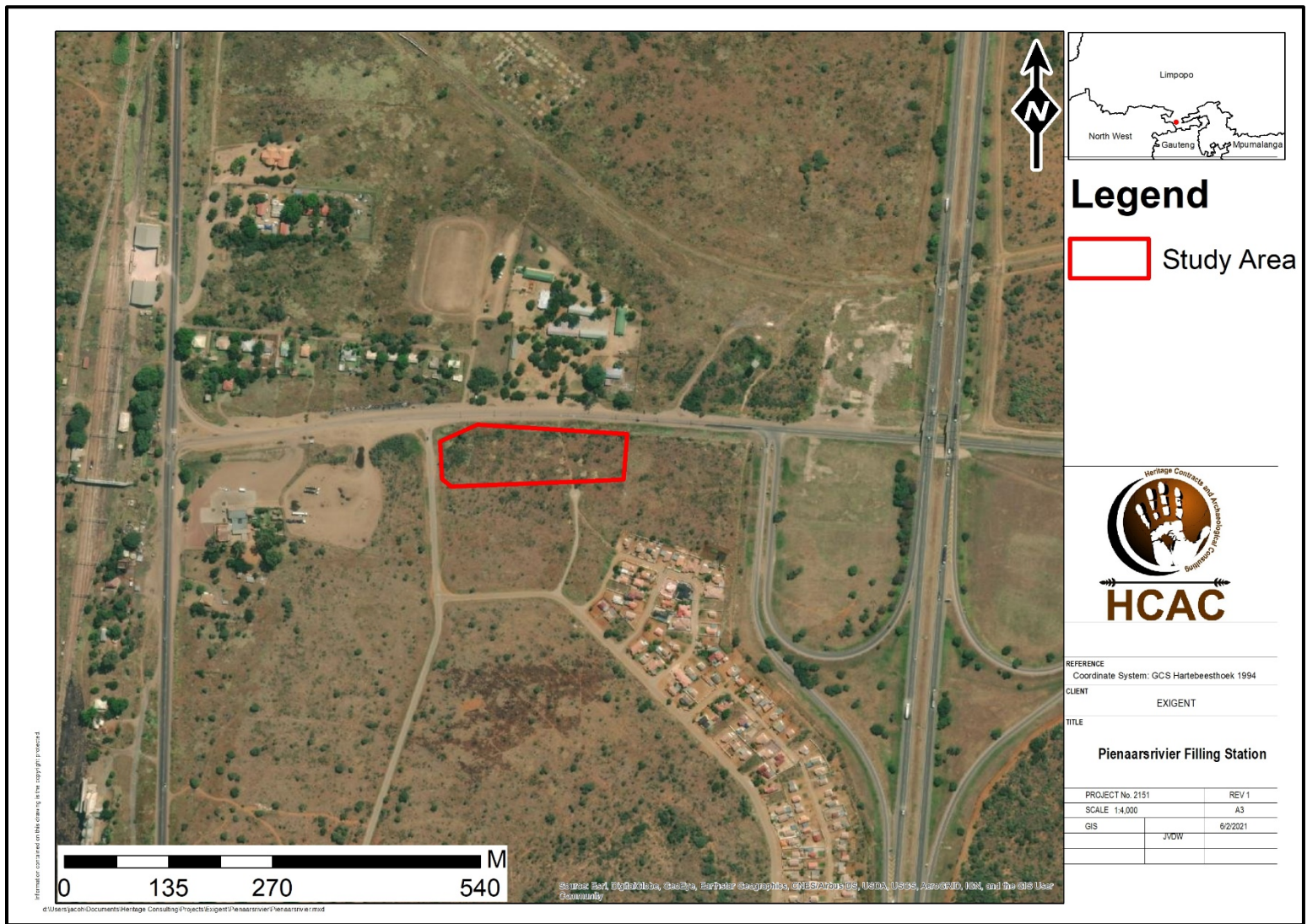


Figure 1-3. Aerial image of the development footprint indicating the proposed location of the filling station.



## 2 Legislative Requirements

The HIA, as a specialist sub-section of the EIA, is required under the following legislation:

- National Heritage Resources Act (NHRA), Act No. 25 of 1999
- National Environmental Management Act (NEMA), Act No. 107 of 1998 - Section 23(2)(b)
- Mineral and Petroleum Resources Development Act (MPRDA), Act No. 28 of 2002 - Section 39(3)(b)(iii)

A Phase 1 HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of 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; and
- Make recommendations for the appropriate heritage management of these impacts.

The HIA should be submitted, as part of the impact assessment report or EMPr, to the PHRA if established in the province or to SAHRA. SAHRA will ultimately be responsible for the evaluation of Phase 1 HIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 HIA reports and additional development information, as per the impact assessment report and/or EMPr, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 HIA reports authored by professional archaeologists, accredited with ASAPA or with a proven ability to do archaeological work.

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 ASAPA in collaboration with SAHRA. ASAPA is based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 HIA's are primarily concerned with the location and identification of heritage sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 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 guidelines 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 can only be conducted with 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 an 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 of a site, a destruction permit must be applied for with SAHRA by the applicant 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 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 this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to 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 reinternment 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. 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).

### 3 METHODOLOGY

#### 3.1 Literature Review

A brief survey of available literature was conducted to extract data and information on the area in question to provide general heritage context into which the development would be set. This literature search included published material, unpublished commercial reports and online material, including reports sourced from the South African Heritage Resources Information System (SAHRIS).

#### 3.2 Genealogical Society and Google Earth Monuments

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located; these locations were marked and visited during the fieldwork phase. The database of the Genealogical Society was consulted to collect data on any known graves in the area.

#### 3.3 Public Consultation and Stakeholder Engagement:

Stakeholder engagement is a key component of any EIA process, it involves stakeholders interested in, or affected by the proposed development. Stakeholders are provided with an opportunity to raise issues of concern (for the purposes of this report only heritage related issues will be included). The aim of the public consultation process was to capture and address any issues raised by community members and other stakeholders during key stakeholder and public meetings. The process involved:

- Placement of advertisements and site notices
- Stakeholder notification (through the dissemination of information and meeting invitations);
- Stakeholder meetings undertaken with I&APs;
- Authority Consultation
- The compilation of Basic Assessment Report (BAR).

### 3.4 Site Investigation

The aim of the site survey was to:

- a) survey the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest;
- b) record GPS points of sites/areas identified as significant areas;
- c) determine the levels of significance of the various types of heritage resources recorded in the project area.

**Table 4: Site Investigation Details**

|        | Site Investigation                                                                                                                                                                                                             |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date   | 12 July 2021                                                                                                                                                                                                                   |
| Season | Winter- Archaeological visibility is high across the study area since the area being partially burned. The development footprint was sufficiently covered to understand the heritage character of the study area (Figure 3.1). |

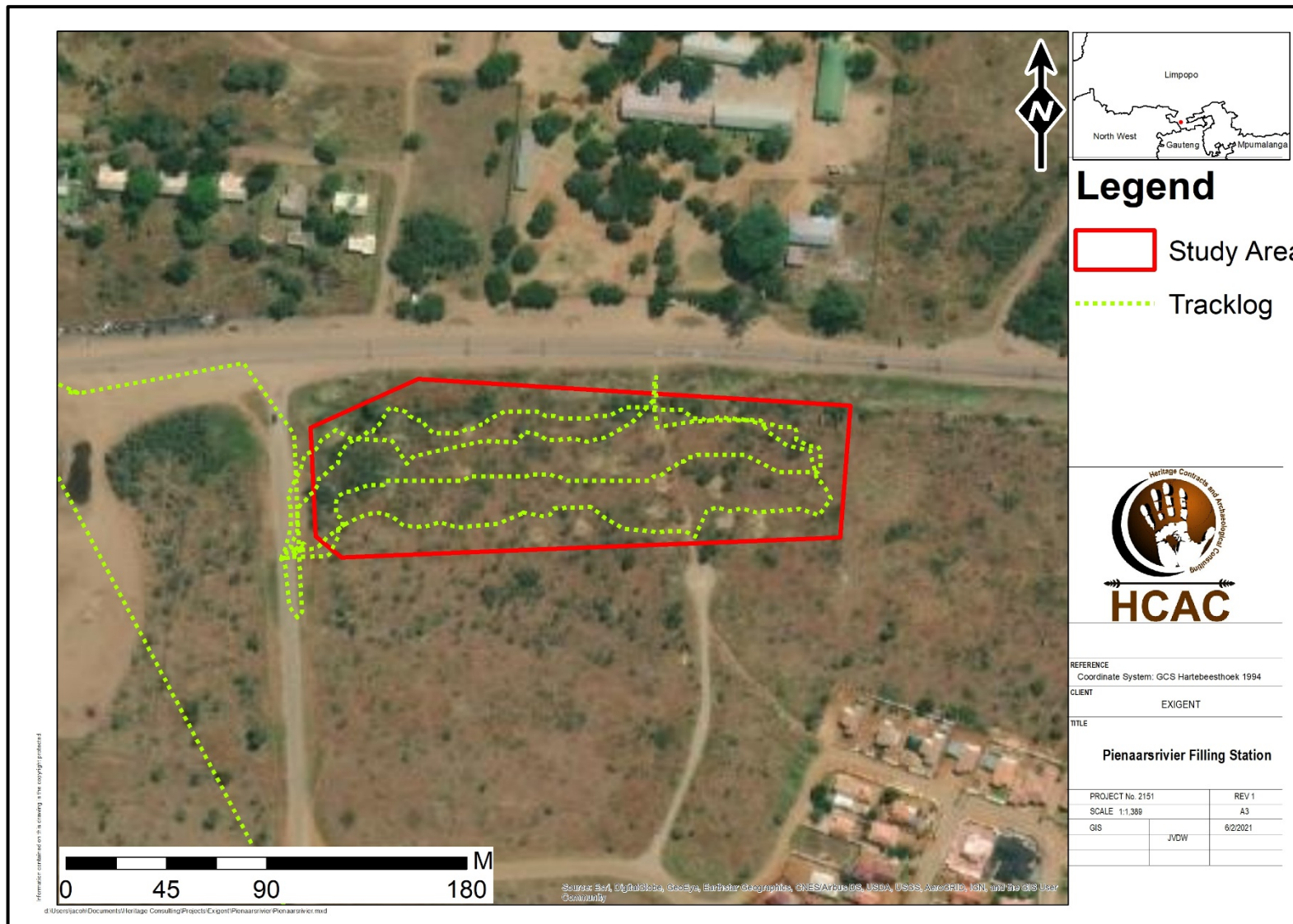


Figure 3-1: Tracklog of the survey in green.

### 3.5 Site Significance and Field Rating

Section 3 of the NHRA distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- Its importance in/to the community, or pattern of South Africa's history;
- Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
- Sites of significance relating to the history of slavery in South Africa.

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed project the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface. This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance with cognisance of Section 3 of the NHRA:

- The unique nature of a site;
- The integrity of the archaeological/cultural heritage deposits;
- 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/is known);
- The preservation condition of the sites; and
- Potential to answer present research questions.

In addition to this criteria field ratings prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 10 of this report.

**Table 5. Heritage significance and field ratings**

| <b>FIELD RATING</b>           | <b>GRADE</b> | <b>SIGNIFICANCE</b>      | <b>RECOMMENDED MITIGATION</b>                |
|-------------------------------|--------------|--------------------------|----------------------------------------------|
| National Significance (NS)    | Grade 1      | -                        | Conservation; national site nomination       |
| Provincial Significance (PS)  | Grade 2      | -                        | Conservation; provincial site nomination     |
| Local Significance (LS)       | Grade 3A     | High significance        | Conservation; mitigation not advised         |
| Local Significance (LS)       | Grade 3B     | High significance        | Mitigation (part of site should be retained) |
| Generally Protected A (GP. A) | -            | High/medium significance | Mitigation before destruction                |
| Generally Protected B (GP. B) | -            | Medium significance      | Recording before destruction                 |
| Generally Protected C (GP.C)  | -            | Low significance         | Destruction                                  |

### 3.6 Impact Assessment Methodology

The criteria below are used to establish the impact rating on sites:

- The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The **duration**, wherein it will be indicated whether:
  - \* the lifetime of the impact will be of a very short duration (0-1 years), assigned a score of 1;
  - \* the lifetime of the impact will be of a short duration (2-5 years), assigned a score of 2;
  - \* medium-term (5-15 years), assigned a score of 3;
  - \* long term (> 15 years), assigned a score of 4; or
  - \* permanent, assigned a score of 5;
- The **magnitude**, quantified on a scale from 0-10 where; 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1-5 where; 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).

- The **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- the **status**, which will be described as either positive, negative or neutral.
- the degree to which the impact can be reversed.
- the degree to which the impact may cause irreplaceable loss of resources.
- the *degree* to which the impact can be mitigated.

The **significance** is calculated by combining the criteria in the following formula:

$$S=(E+D+M) P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

### 3.7 Limitations and Constraints of the study

The authors acknowledge that the brief literature review is not exhaustive on the literature of the area. Due to the nature of heritage resources and pedestrian surveys, the possibility exists that some features or artefacts may not have been discovered/recorded and the possible occurrence of graves and other cultural material cannot be excluded. Similarly, the depth of cultural deposits and the extent of heritage sites cannot be accurately determined due its subsurface nature. This report only deals with the footprint area of the proposed development and consisted of non-intrusive surface surveys. This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components would have been highlighted through the public consultation process if relevant. It is possible that new information could come to light in future, which might change the results of this Impact Assessment.

## 4 Description of Socio-Economic Environment

According to the IDP for the municipality the total size of Bela-Bela's population is currently estimated at **76 296** individuals which has increased by 14.73 % by 2016 compared to Census 2011. Total population growth rate (2011-2016) of **0.031** has been recorded within the Bela Bela Municipal area. This is based on the Census 2016 Community Survey which also estimates that there are approximately **21 354 households** within Bela-Bela municipal area which is 18.9% increase from 2011. The active labour force is estimated at 36 069 in 2013 individuals, between the ages of 18 – 64. Approximately **23%** of the active labour force in Bela-Bela is unemployed of which **30%** is Youth. The unemployment rate in Bela-Bela Municipal Area is similar to unemployment in the province, but the labour force participation rate in the Municipality is considerably higher than that of the Province. This could be the result of labour migration out of Bela-Bela in search of work in Gauteng, particularly among younger adult members of the households.

The 30% unemployment rate of Youth which is unacceptably high is corroborated by the Education figures, where the picture painted is that majority of our Youth are not adequately skilled to be able to actively participate in the job market within the Municipality.



## 5 Results of Public Consultation and Stakeholder Engagement:

### 5.1.1 Stakeholder Identification

Adjacent landowners and the public at large were informed of the proposed activity as part of the BA process. Site notices and advertisements notifying interested and affected parties were placed at strategic points and in local newspapers as part of the process.

## 6 Literature / Background Study:

### 6.1 Literature Review (SAHRIS)

The following CRM reports were consulted for this report as outlined in Table 6. Indicating the range of heritage resources that occur in the region.

Table 6. Studies consulted for the project.

| Author                | Year | Project                                                                                                                                       | Findings                                          |
|-----------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Pistorius, J.C.C.     | 2013 | A Phase I Heritage Impact Assessment (HIA) study for Eskom's proposed customer network centre (CNC) in Pienaarsrivier in the Limpopo Province | No sites                                          |
| Van Schalkwyk, J.A.   | 2007 | Heritage Impact Survey of Portions of the Farm Buffelsdrift 179 JR, Warmbad Magisterial District, Limpopo Province                            | Several MSA occurrences                           |
| Van Vollenhoven, A.C. | 2003 | A report on a Cultural Resources survey done on Portion 8 of the farm Kliprand 76 JR, Limpopo Province                                        | Stone Age artefacts and a historical site         |
| Roodt, H.             | 1999 | Phase 1 AIA Ruimte 74 JR Pienaarsrivier, Limpopo Province.                                                                                    | Stone Age and Iron age artefacts were identified. |

### 6.1.1 Genealogical Society and Google Earth Monuments

No known grave sites are indicated in the study area.

## 6.2 Background to the general area

### 6.2.1 Archaeology of the area

The archaeological record for the greater study area consists of the Stone Age and Iron Age.

#### 6.2.1.1 *Stone Age*

South Africa has a long and complex Stone Age sequence of more than 2 million years. The broad sequence includes the Later Stone Age, the Middle Stone Age and the Earlier Stone Age. Each of these phases contain sub-phases or industrial complexes, and within these we can expect regional variation regarding characteristics and time ranges. The three main phases can be divided as follows;

- \* Later Stone Age; associated with Khoi and San societies and their immediate predecessors. Recently to ~30 thousand years ago
- \* Middle Stone Age; associated with Homo sapiens and archaic modern humans. 30-300 thousand years ago.
- \* Earlier Stone Age; associated with early Homo groups such as Homo habilis and Homo erectus. 400 000-> 2 million years ago.

Stone Age sites are usually associated with stone artefacts found scattered on the surface or as part of deposits in caves and rock shelters. No previously recorded Stone Age sites are on record for the study area and no significant Stone Age sites are expected. A known heritage site in the greater study area is the Wonderboompoort site to the south of the study area and the Tswaing Meteorite Crater to the west of Hammanskraal. The Salt Lake in the crater has been visited by Middle and Stone Age people.

### 6.2.2 The Iron Age (AD 400 to 1840)

Bantu-speaking people moved into Eastern and Southern Africa about 2,000 years ago (Mitchell, 2002). These people cultivated sorghum and millets, herded cattle and small stock and manufactured iron tools and copper ornaments. Because metalworking represents a new technology, archaeologists call this period the Iron Age. Characteristic ceramic styles help archaeologists to separate the sites into different groups and time periods. The first 1,000 years is called the Early Iron Age.

As mixed farmers, Iron Age people usually lived in semi-permanent settlements consisting of pole-and-daga (mud mixed with dung) houses and grain bins arranged around a central area for cattle (Huffman, 1982). Usually, these settlements with the 'Central Cattle Pattern' (CCP) were sited near water and good soils that could be cultivated with an iron hoe. For the project area, archaeological sites such as these may occur.

According to the most recent archaeological cultural distribution sequences by Huffman (2007), the study area falls within the distribution area of various cultural groupings originating out of both the Urewe Tradition (eastern stream of migration) and the Kalundu Tradition (western stream of migration). The facies that may be present are:

Urewe Tradition: Moloko Branch – Icon facies AD 1300 - 1500 (Late Iron Age)

Madikwe facies AD 1500-1700 (Late Iron Age)

Blackburn Branch- Uitkomst facies AD 1650-1820 (Late Iron Age)

Rooiberg facies AD 1650-1750 (Late Iron Age)

Kwale branch- Mzonjani facies AD 450 – 750 (Early Iron Age)

Kalunda Tradition: Benfica sub-branch – Bambata facies AD 150-650 (Early Iron Age)

Happy Rest sub-branch – Diamant facies AD 750-1000 (Early Iron Age)

Eiland facies AD 1000-1300 (Middle Iron Age)

### 6.3 Historical Information

The Difaqane (Sotho), or Mfekane (“the crushing” in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820’s until the late 1830’s. (Bergh 1999: 109-115) It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka’s Zulus to attack other tribes. (Bergh 1999: 14; 116-119) At the beginning of the nineteenth century, the predominant black tribe in the area north of Pretoria was the Manala-Ndebele. The Kgatla were also present to the north of where Pretoria is located today. It seems that, in 1832, Shaka’s Zulu tribe passed by the south of Pretoria from the southeast in a westerly direction. This was in order to attack Mzilikazi’s Ndebele. This group also went on raids in various other areas in order to expand their area of influence. (Bergh 1999: 11)

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa, some already as early as the 1720’s. The Scottish travellers Robert Scoon and William McLuckie passed through the greater study area in 1829. In the same year, Robert Moffat and James Archbell also travelled through this area. (Bergh 1999: 12) In the mid 1830’s, several travellers made their way from the Pretoria area into the inland. These included the travellers Robert Scoon, Dr. Andrew Smith and Captain William Cornwallis Harris. (Bergh 1999: 13)

It was however only by the late 1820’s that a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. (Ross 2002: 39)

#### 7.3.1. Anglo-Boer War

The Anglo-Boer War was the greatest conflict that had taken place in South Africa up to date, and also affected the greater study area. A concentration camp was located at Modimolle and another to the North East of Pretoria. One battle took place at Silkaatsnek, to the northwest of Pretoria, some distance from the study area. Here, General De la Rey’s Boer troops defeated the British army on 11 July 1900. (Bergh 1999: 54, 250) The Boer side however generally lost ground against the British as the war continued, and in June 1900 the Boer military leaders decided that Pretoria would have to be surrendered to the British forces. This decision was inevitable if the war was to be continued. The town was very susceptible to a siege, and its defence would have gravely endangered the lives of its inhabitants. More importantly, the defence of the town would involve such a great number of Boers that the capture of these men would have surely meant the end of the war. Pretoria was therefore occupied by British forces on Tuesday 5 June 1900. (Theron 1984: 273-279).

After the surrender of Pretoria in the Anglo-Boer War, the Republican forces adopted guerilla tactics. The British forces erected a system of blockhouses to divide the combat areas into sectors and one such fort was constructed in Bela Bela. Built by the British authorities during the Anglo-Boer War to protect the railway from destruction by the Boers, it formed a part of a line of blockhouses that extended from Noupoort right across the Orange Free State and through Johannesburg and Pretoria to Polokwane.

#### 6.3.1 Cultural Landscape

Historical maps were sourced and examined to determine how the landscape changed over time. Maps of the area are available from the 1960’s, showing the surrounding area to be rural in character with limited infrastructure and no developments in the study area (Figure 6.1 to 6.4).

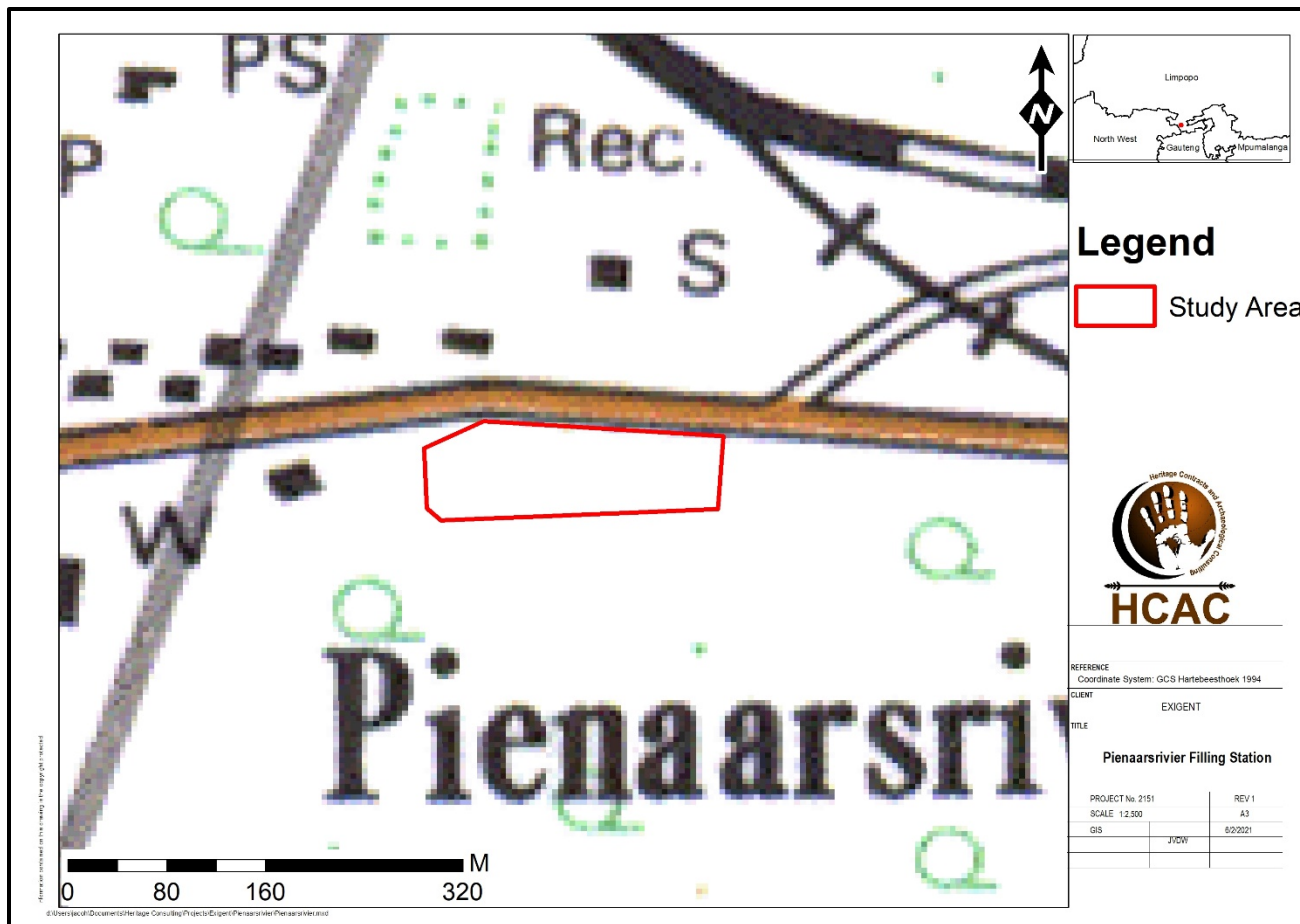


Figure 6-1. 1966 Topographic map of the study area, no developments are indicated.

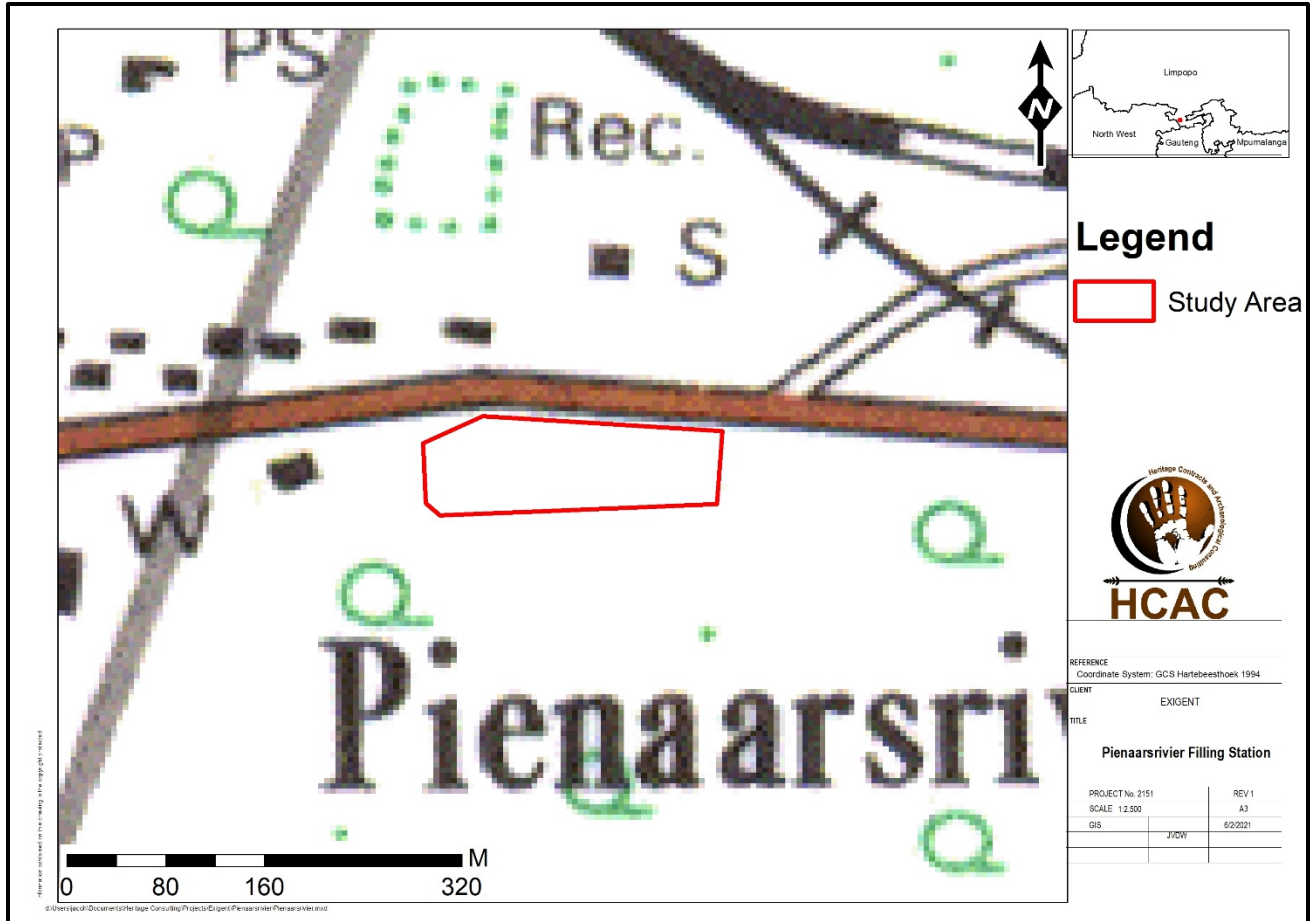


Figure 6-2. 1976 Topographic map indicating no developments in the study area.

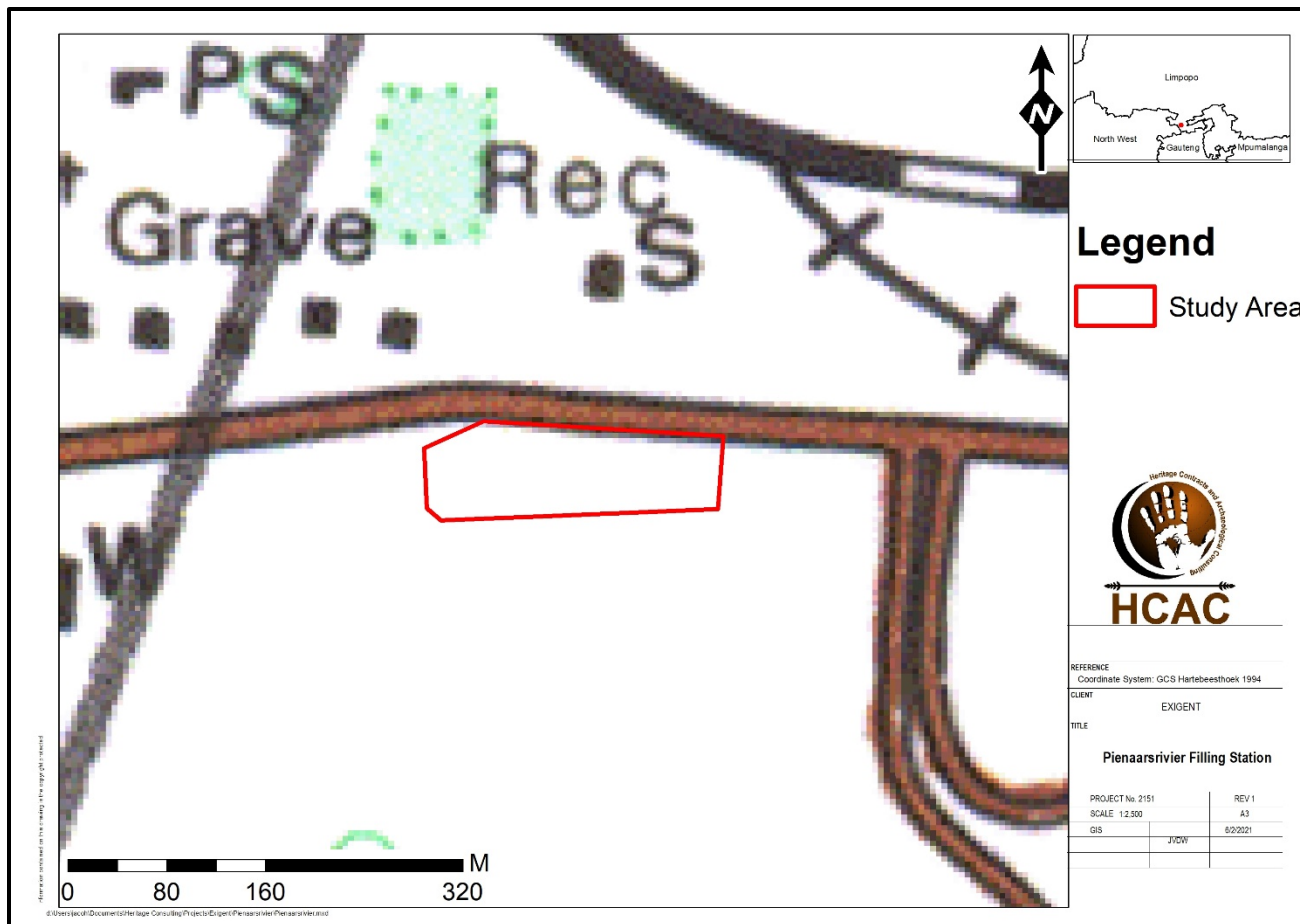


Figure 6-3. 1984 Topographic map – no developments are indicated.

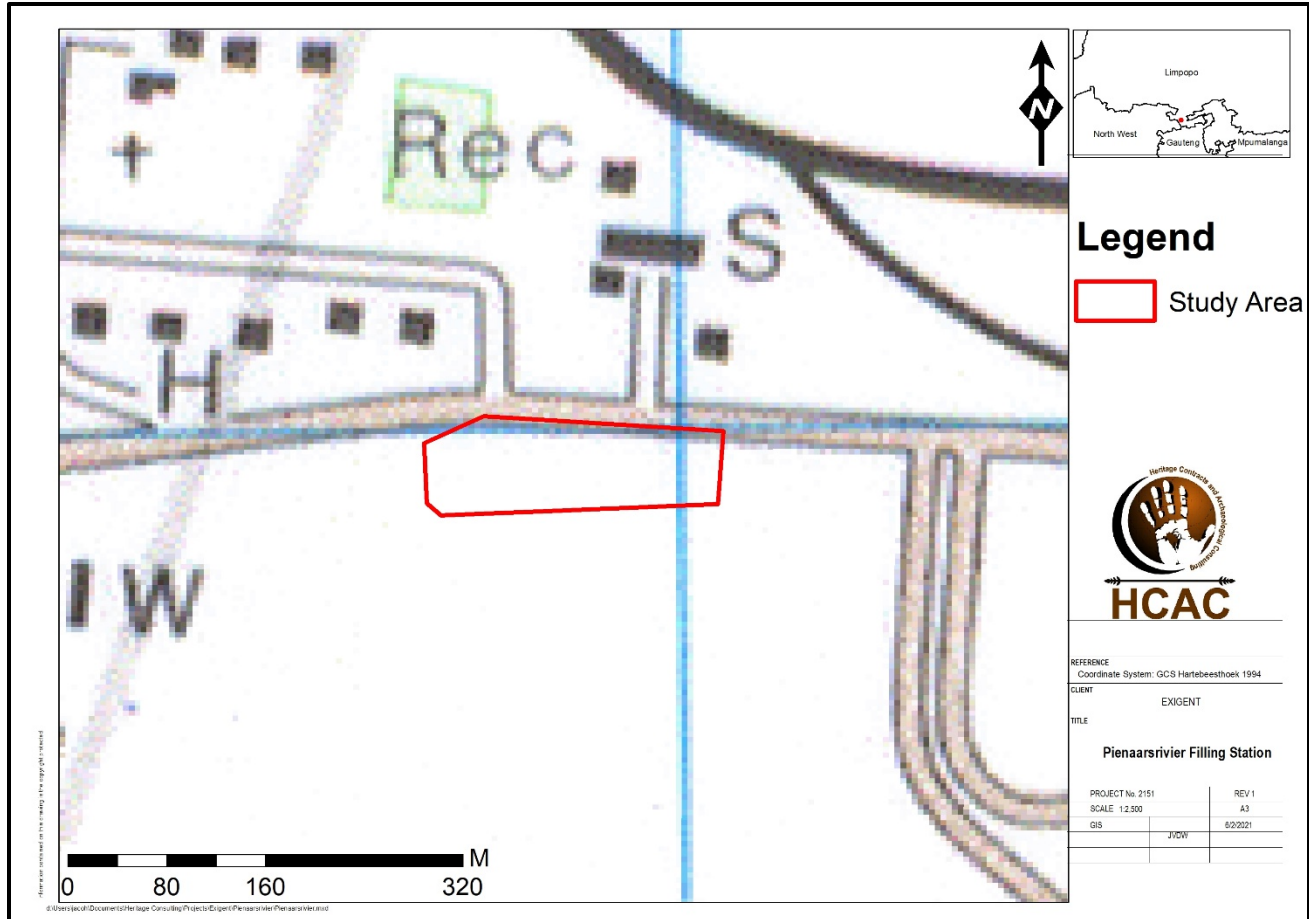


Figure 6-4. 1995 Topographic map indicating no developments in the study area. Road developments and structures are indicated in the surrounding area.

## 7 Description of the Physical Environment

The study area consists of a small open field near the N1 highway, the site is flat with no major topographical features like pans or rocky outcrops. The area has been partially burnt with little to no grass cover left with a few small trees scattered across the area. Illegal dumping is taking place on the sides of the study area along the small, paved road running on the northern and western borders. Building rubble is also being dumped within the study area. General site conditions are illustrated in Figure 7-1 to 7-4.





Figure 7-1. General site conditions viewed from western border facing east.



Figure 7-2. Dumping in the study area.



Figure 7-3. General site conditions with the N1 visible in the background.

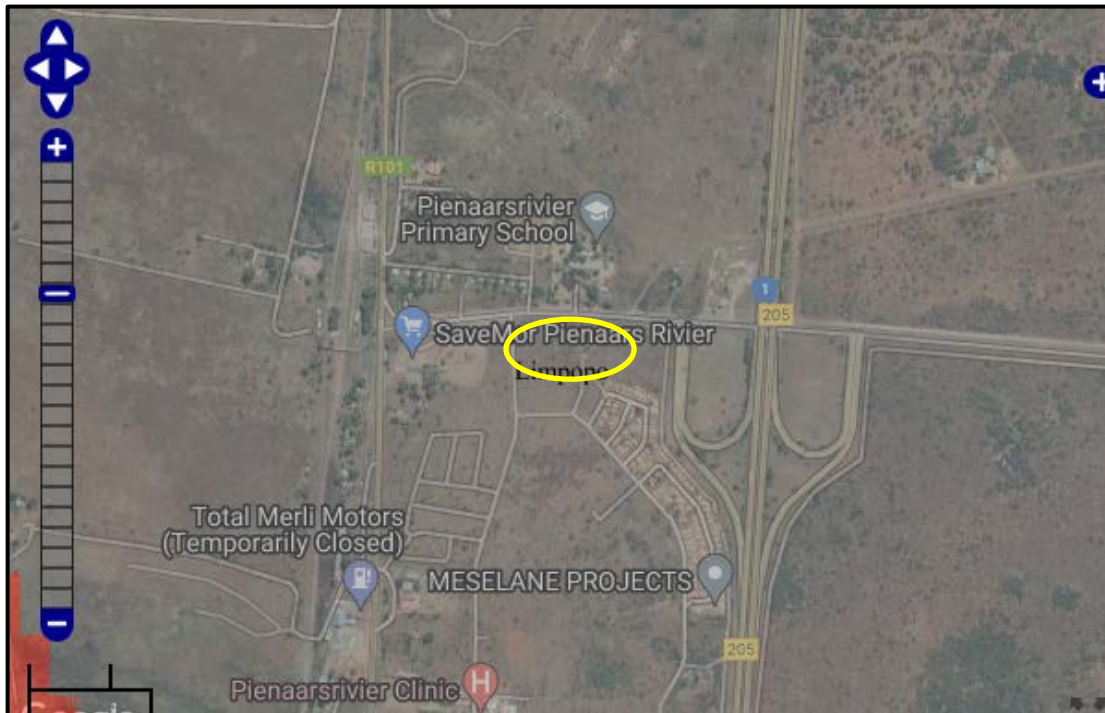


Figure 7-4. Illegal dumping in the study area.

### 8 Findings of the Survey

It is important to note that only the development footprint was surveyed over 1 day. The proposed site for the filling station is open, the topography is flat and the site is undeveloped. The site is currently characterized by the illegal dumping and has recently been burnt. No heritage resources were recorded during the survey.

Based on the SAHRA Paleontological map (Figure 8.1) the area is of insignificant paleontological sensitivity and no further studies are required for this aspect.



| 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 8-1. Paleontological sensitivity of the study area (yellow polygon).

## 9 Potential Impact

Based on the lack of heritage resources within the proposed development footprint the impact on the cultural heritage resources of the area is considered to be low (Table 6).

### 9.1.1 Pre-Construction phase

It is assumed that the pre-construction phase involves the removal of topsoil and vegetation as well as the establishment of infrastructure needed for the construction phase. These activities can have a negative and irreversible impact on heritage features if any occur. Impacts include destruction or partial destruction of non-renewable heritage resources.

### 9.1.2 Construction Phase

During this phase, the impacts and effects are similar in nature but more extensive than the pre-construction phase. Potential impacts include destruction or partial destruction of non-renewable heritage resources.

### 9.1.3 Operation Phase:

**Table 7. Impact assessment of the project**

|                                                                                                                                                                                                                                           |                           |                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------|
| <b>Nature:</b> During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological and paleontological material or objects. |                           |                                                                       |
|                                                                                                                                                                                                                                           | <b>Without mitigation</b> | <b>With mitigation<br/>(Preservation/<br/>excavation<br/>of site)</b> |
| <b>Extent</b>                                                                                                                                                                                                                             | Local (2)                 | Local (2)                                                             |
| <b>Duration</b>                                                                                                                                                                                                                           | Permanent (5)             | Permanent (5)                                                         |
| <b>Magnitude</b>                                                                                                                                                                                                                          | Minor (2)                 | Minor (2)                                                             |
| <b>Probability</b>                                                                                                                                                                                                                        | Improbable (2)            | Improbable (2)                                                        |
| <b>Significance</b>                                                                                                                                                                                                                       | <b>18 (Low)</b>           | <b>18 (Low)</b>                                                       |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                      | Negative                  | Negative                                                              |
| <b>Reversibility</b>                                                                                                                                                                                                                      | Not reversible            | Not reversible                                                        |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                   | Yes                       | Yes                                                                   |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                          | NA                        | NA                                                                    |
| <b>Mitigation:</b><br>Implementation of a chance find procedure for the project.                                                                                                                                                          |                           |                                                                       |
| <b>Cumulative impacts:</b><br>The proposed project will have a low cumulative impact as no known heritage resources will be adversely affected.                                                                                           |                           |                                                                       |
| <b>Residual Impacts:</b><br>Although surface sites can be avoided or mitigated, there is a chance that completely buried sites would still be impacted on, but this cannot be quantified.                                                 |                           |                                                                       |



## **10 Conclusion and recommendations**

The greater study area is rural in character and the proposed site for the filling station is open, the general topography is flat and the site is undeveloped. Easy access to the site resulted in illegal dumping that occurs regularly. During the site visit no standing structures older than 60 years or archaeological finds of significance were noted. Based on the SAHRA Paleontological map the entire area is of insignificant paleontological sensitivity and no further studies are required for this aspect.

No significant heritage resources will be affected by the development and therefore the impact of the project on heritage resources are low and the project can commence based on the implementation of the recommendations in this report and the approval of SAHRA.

### **10.1. Recommendations for condition of authorisation**

The following recommendations for Environmental Authorisation apply and the project may only proceed based on approval from SAHRA:

- Implementation of a chance find procedure for the project (as outlined below).

### **10.2. Chance Find Procedures**

The possibility of the occurrence of subsurface finds cannot be excluded. Therefore, if during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped, and a qualified archaeologist must be contacted for an assessment of the find and therefore chance find procedures should be put in place as part of the EMP. A short summary of chance find procedures is discussed below.

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

### **10.3. Reasoned Opinion**

The overall impact of the project on heritage resources is low, based on the adherence to the recommendations in this report and approval from SAHRA prior to development. The socio-economic benefits also outweigh the possible impacts of the development if the correct mitigation measures are implemented for the project.

**10.4 Potential risk**

Potential risks to the proposed project are the occurrence of intangible features and unrecorded cultural resources (of which graves are the highest risk). This can cause delays during construction, as well as additional costs involved in mitigation, and possible layout changes.

### 10.5 Monitoring Requirements

Day to day monitoring can be conducted by the Environmental Officers (EO). The EO or other responsible persons should be trained along the following lines:

- *Induction training:* Responsible staff identified by the developer should attend a short course on heritage management and identification of heritage resources.
- *Site monitoring and watching brief:* As most heritage resources occur below surface, all earth-moving activities need to be routinely monitored in case of accidental discoveries. The greatest potential impacts are the initial soil removal and subsequent earthworks during construction. The EO should monitor all such activities daily. If any heritage resources are found, the chance finds procedure must be followed as outlined above.

Table 8. Monitoring requirements for the project

| Heritage Monitoring                 |                     |                                          |                                    |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------|---------------------|------------------------------------------|------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aspect                              | Area                | Responsible for monitoring and measuring | Frequency                          | Proactive or reactive measurement | Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Clearing activities and Excavations | Entire project area | EO                                       | Weekly – during construction phase | Proactively                       | <ul style="list-style-type: none"> <li>• If risks are manifested (accidental discovery of heritage resources) the chance find procedure should be implemented:               <ol style="list-style-type: none"> <li>1. Cease all works immediately;</li> <li>2. Report incident to the Sustainability Manager;</li> <li>3. Contact an archaeologist or palaeontologist to inspect the site;</li> <li>4. Report incident to the competent authority; and</li> <li>5. Employ reasonable mitigation measures in accordance with the requirements of the relevant authorities.</li> </ol> </li> <li>• Only recommence operations once impacts have been mitigated.</li> </ul> |

### 10.6 Management Measures for inclusion in the EMPr

The following management measures must be included in the EMPr to ensure the protection of non-renewable heritage resources.

**Table 9. Management measure for inclusion in the EMPr.**

| ACTIVITIES                             | PHASE                             | SIZE AND SCALE | MITIGATION MEASURES   | COMPLIANCE WITH STANDARDS                                | TIME PERIOD FOR IMPLEMENTATION |
|----------------------------------------|-----------------------------------|----------------|-----------------------|----------------------------------------------------------|--------------------------------|
| Construction and Excavation Activities | Pre-Construction and Construction | Entire site    | Chance Find Procedure | Heritage Act NHRA Act 25 of 1999 (Section 35, 36 and 38) | Construction phase             |



### **10.7 Knowledge Gaps**

Due to the subsurface nature of heritage resources, the possibility of discovery of heritage resources during the construction phase cannot be excluded. This limitation can be successfully mitigated with the implementation of a chance find procedure.

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