

ARCHAEOLOGICAL SITE SELECTION REPORT

FOR THE PROPOSED KHULU TSF PROJECT, LIMPOPO PROVINCE

Client:

Envirogistics (Pty) Ltd

Client information:

Tanja Bekker

Email: tanja@envirogistics.co.za



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:

21907


Report date:

February 2019

Revised June 2021

DOCUMENT PROGRESS
Heritage Site Screening Report

Document status

Document Version	v1.0		
Report Purpose	Draft for review Envirogistics (Pty) Ltd		
Report Ref. No.	21907		
	Name	Signature	Date
Document Compilation	Mr. J. van der Walt		February 2019 June 2021

Distribution List

Date	Report Reference number	Document Distribution	Number of Copies
2019/02/08 2021/06/18	21907	Envirogistics (Pty) Ltd	Electronic copy

Indemnity and Conditions Relating to this Report

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. The report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken and Heritage Contracts and Archaeological Consulting (HCAC) CC and its staff reserve the right to modify aspects of the report including the recommendations if and when new information becomes available from ongoing research or further work in this field, or pertaining to this investigation.

Although all possible care is taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. HCAC CC and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of this report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

Copyright

Copyright on all documents, drawings and records, whether manually or electronically produced, which form part of the submission and any subsequent report or project document, shall vest in HCAC CC.

The Client, on acceptance of any submission by HCAC CC and on condition that the Client pays to HCAC CC the full price for the work as agreed, shall be entitled to use for its own benefit:

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

Should the Client wish to utilise any part of, or the entire report, for a project other than the subject project, permission must be obtained from HCAC CC to do so. This will ensure validation of the suitability and relevance of this report on an alternative project.

EXECUTIVE SUMMARY

Site name and location: Khulu TSF located at the Dwarsrivier Mine, Steelpoort, Limpopo Province

1: 50 000 Topographic Map: 2430 CC

EIA Consultant: Envirogistics (Pty) Ltd .

Developer: Dwarsrivier Chrome Mine

Heritage Consultant: HCAC (Heritage Contracts and Archaeological Consulting).

Contact person: Jaco van der Walt, Tel: +27 82 373 8491, Email: jaco@heritageconsultants.co.za

Date of Report: 8 February 2019. Revised with additional option – TSF option B.

Findings of the Assessment:

The scope of work comprises a preferred site selection process for the Khulu TSF Project. Dwarsrivier Chrome Mine identified 7 sites but due to Environmental constrains four potential sites (Site B, C, D and F) were selected and assessed in this report. This screening report was conducted based on a desktop study of available data regarding cultural heritage resources of the area as well as a walkdown of the proposed impact areas

Based on the findings of this screening report Site D is from a heritage point of view the preferred site. Site D has previously been disturbed and no heritage resources were identified inside the footprint area of the proposed TSF. It should be noted that a cemetery occurs on the periphery of the site, and this area should be demarcated and avoided.

Site F is also considered to be acceptable if the correct management and mitigation measures are implemented. Site F is however located in a pristine Greenfields area and therefore less suitable than Site D.

The stone wall foundations of a ruin and a possible Early Iron Age site was recorded within Site B. The study area is how ever disturbed, possibly by previous cultivation reducing the significance of the recorded finds. The recorded sites will require limited mitigation and Site B are therefore the third option from a heritage point of view

From a heritage point of view the heritage sensitivity associated with Site C are considered to be high due to the high number of Iron Age sites in the impact area and this option is not recommended for the proposed development.

Contents

Indemnity and Conditions Relating to this Report3

Copyright.....4

GLOSSARY7

1. INTRODUCTION8

1.1 Terms of Reference 10

1.2 The receiving environment 11

2. APPROACH AND METHODOLOGY 11

2.1 Literature review 11

2.2 Information collection..... 11

2.3 Public consultation..... 11

2.4 Google Earth and mapping survey 11

2.5 Genealogical Society of South Africa 11

2.6. Heritage Walk Down 11

3. LEGISLATION 12

3.1 Heritage Site Significance and Mitigation Measures 13

4. REGIONAL OVERVIEW 14

4.1 General Information 14

4.1.1. Known Sites 14

4.1.2. Paleontological Sensitivities 14

4.1.3. Public consultation..... 15

4.1.4. Google Earth and mapping survey 15

4.1.5. Genealogical Society of South Africa 16

5. ASSUMPTIONS AND LIMITATIONS 16

6. FINDINGS 16

7 OCCURRENCES OF SITES 17

8. CONCLUSIONS AND RECOMMENDATIONS 17

9. PLAN OF STUDY 19

10. LIST OF PREPARERS 19

11. STATEMENT OF COMPETENCY..... 20

12. STATEMENT OF INDEPENDENCE 20

13. REFERENCES 21

Figures

Figure 1. Locality map of the sites under investigation also indicating the heritage resources identified in each area..... 9

Figure 2. Known sites in relation to the study area. 14

Figure 3. Paleontological Sensitivity of the approximate study area (red polygon) is indicated as insignificant and low. 15

Tables

Table 1. Limitations considered in the site selection process..... 17

ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
EAP: Environmental Assessment Practitioner
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
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
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency
SAHRIS: South African Heritage Resources Information System

**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 million to 300 000 years ago)

Middle Stone Age (300 000 to 30 000 years ago)

Late Stone Age (30 000 years ago until recent)

Historic (approximately AD 1840 to 1950)

Historic building (over 60 years old)

Lithics: Stone Age artefacts

1. INTRODUCTION

HCAC was contracted by Envirologistics (Pty) Ltd to conduct a heritage screening study for the proposed Khulu TSF. The Project is located close to Steelpoort and currently four sites (TSF Option B, C, D & F) are considered. Heritage resources were recorded in all of the sites apart from Option D and F (Figure 1). The heritage screening report forms part of the Environmental Impact Assessment (EIA) process for the project and will be followed by a Heritage Impact Assessment conducted on the preferred site.

The aim of the screening report is to conduct a desktop study to identify possible heritage resources within the potential project sites in order to select a preferred project site. The study furthermore aims to assess the impact of the proposed project on non - renewable heritage resources and to submit appropriate recommendations with regards to the responsible cultural resources management measures that might be required to assist the developer in choosing the best possible development site with the lowest impact on heritage resources.

This report outlines the approach and methodology utilised for the screening phase of the project. The report includes information collected from various sources and consultations. Possible impacts are identified and mitigation measures are proposed in the following report.

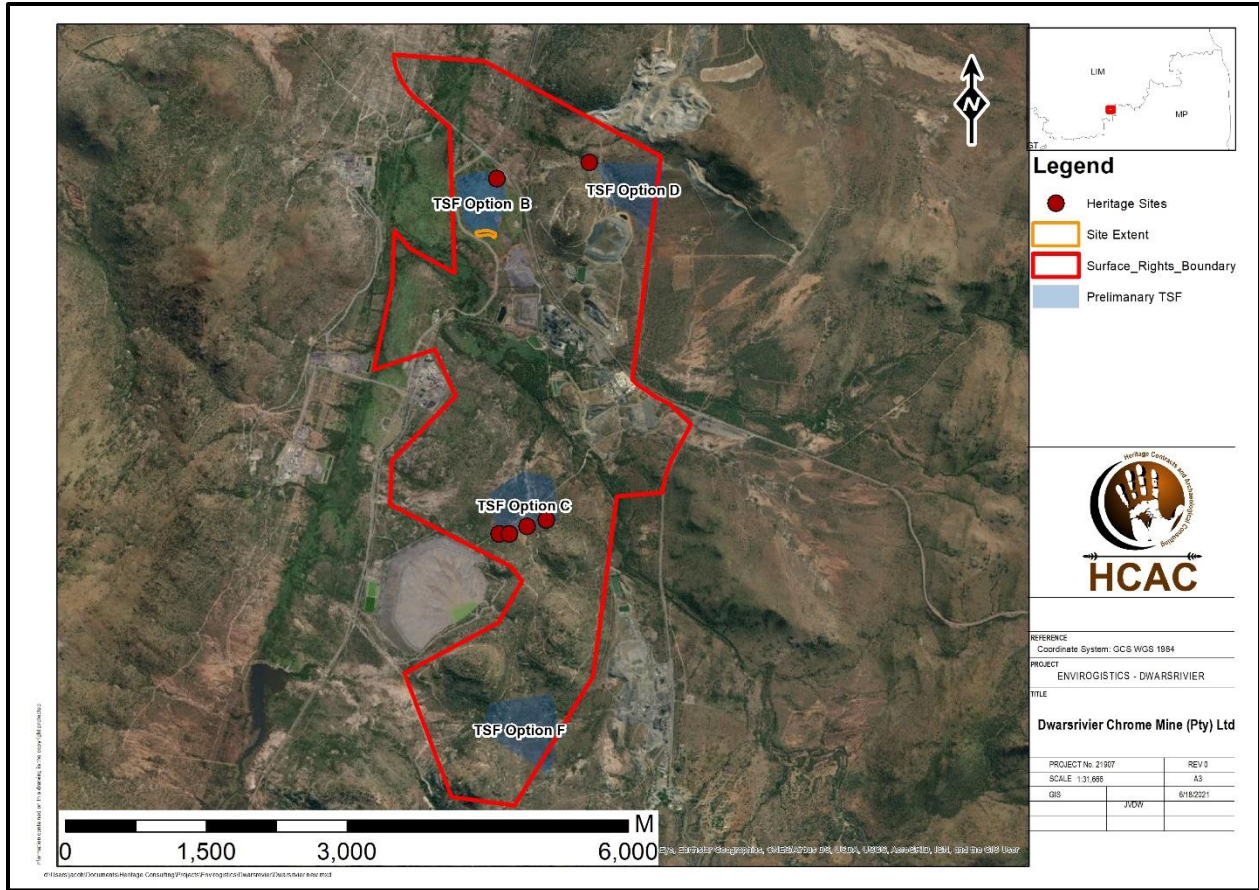


Figure 1. Locality map of the sites under investigation also indicating the heritage resources identified in each area.

1.1 Terms of Reference

The main aim of this screening report is to determine if any known heritage resources occur within the potential project sites and to determine which site would be most suitable from a heritage point of view. The objectives of the screening report were to:

- » Conduct a desktop study:
 - * Review available literature, previous heritage studies and other relevant information sources to obtain a thorough understanding of the archaeological and cultural heritage conditions of the area;
 - * Identify known and recorded archaeological and cultural sites; and
 - * Determine whether the area is renowned for any cultural and heritage resources, such as Stone Age sites, Iron Age sites, informal graveyards or historical homesteads.
- » Conduct a walkdown of the proposed areas.

- » Compile a specialist Heritage Screening Report in line with the requirements of the EIA Regulations, 2014.

The reporting of the screening component is based on the results and findings of the desktop study and a site visit, wherein potential issues associated with the proposed project will be identified, and those issues requiring further investigation through the subsequent impact assessment Phase's highlighted.

1.2 The receiving environment

The study area is situated approximately 60km northwest of Lydenburg, 25km south of Steelpoort and 63km northeast of Roosenekal in the Limpopo Province. The study area forms part of the Dwarsrivier Valley part of the Bushveld Igneous Complex. The greater area has been transformed over the years firstly by agricultural fields and more recently by mining related activities including infrastructure like roads, water pipelines and power lines.

2. APPROACH AND METHODOLOGY

The scope of work comprises a preferred site selection process based on experience working in the area as well as available data regarding archaeological and cultural heritage resources in order to identify a preferred site in terms of potential impacts to known heritage resources.

This was accomplished by means of the following phases (the results are represented in section 4 and 6 of this report):

2.1 Literature review

A review was conducted utilising data for information gathering from published articles on the archaeology and history of the area. The aim of this is to extract data and information on the area in question, looking at archaeological sites, historical sites and graves of the area.

2.2 Information collection

Data from the South African Heritage Resources Information System (SAHRIS) was consulted to further collect data from Cultural Resource Management (CRM) practitioners who undertook work in the area to provide the most comprehensive account of known sites where possible.

2.3 Public consultation

No public consultation was conducted during this phase.

2.4 Google Earth and mapping survey

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological sites might be located.

2.5 Genealogical Society of South Africa

The database of the genealogical society was consulted to collect data on any known graves in the area.

2.6. Heritage Walk Down

The identified areas were subjected to a heritage walkdown to identify heritage sites in the impact areas.

3. LEGISLATION

For this project the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) is of importance and the following sites and features are protected:

- a. Archaeological artefacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The national estate includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

Section 34 (1) of the Act deals with structures that are older than 60 years. Section 35(4) of this Act deals with archaeology, palaeontology and meteorites. Section 36(3) of the Act, deals with human remains older than 60 years. Unidentified/unknown graves are also handled as older than 60 years until proven otherwise.

3.1 Heritage Site Significance and Mitigation Measures

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. 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. National and Provincial Monuments are recognised for conservation purposes. The following interrelated criteria were used to establish site significance:

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

The criteria above will be used to place identified sites within the South African Heritage Resources Agency's (SAHRA's) (2006) system of grading of places and objects that form part of the national estate. This system is approved by the Association of South African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
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

4. REGIONAL OVERVIEW

4.1 General Information

4.1.1. Known Sites

Based on the desktop study a number of known sites were identified and mapped in relation to the proposed sites. None of the previously known sites occur within the proposed site alternatives (Figure 2).

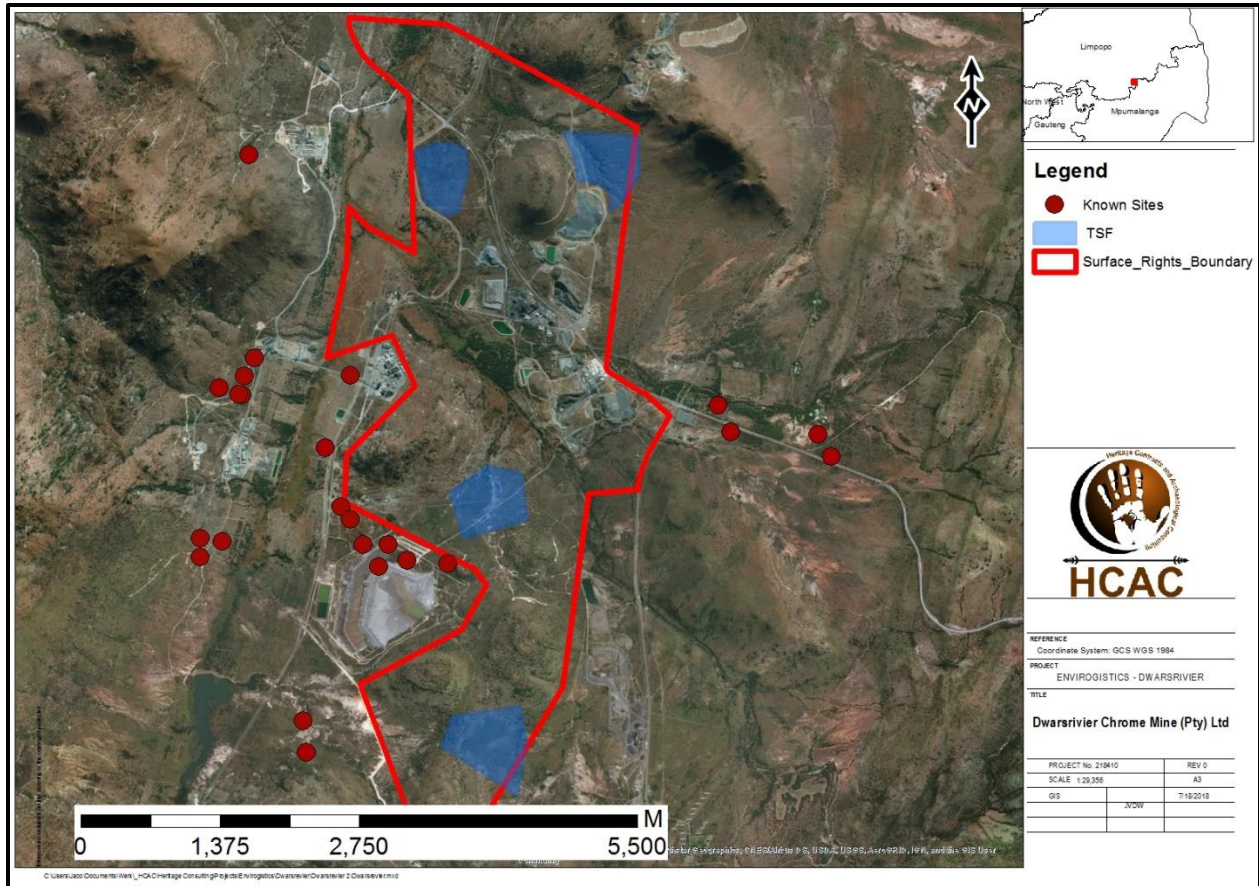
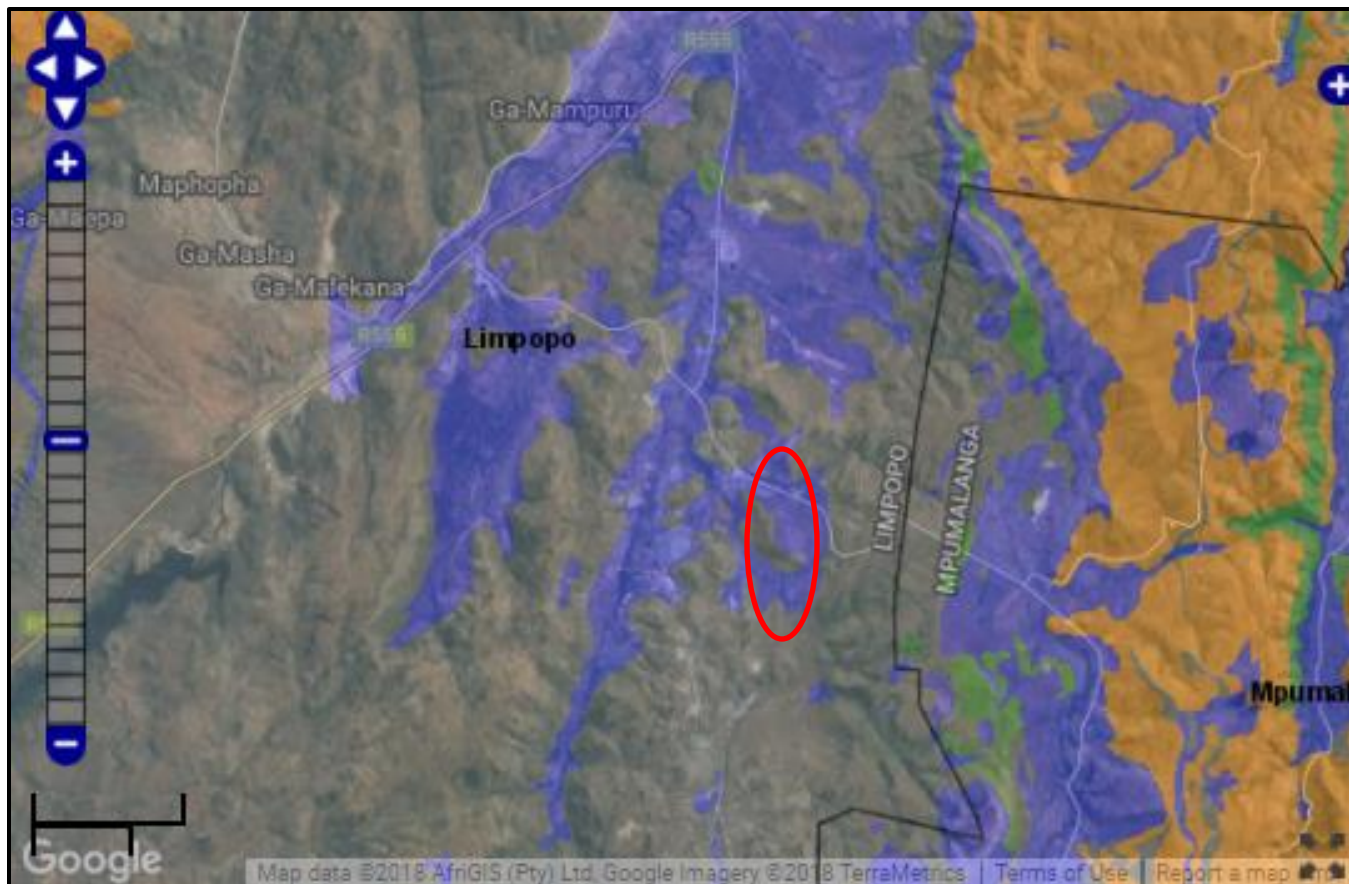


Figure 2. Known sites in relation to the study area.

4.1.2. Paleontological Sensitivities

The area is indicated as of insignificant and low paleontological sensitivity on the SAHRA paleontological sensitivity map (Figure 3).



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 paleontological 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 3. Paleontological Sensitivity of the approximate study area (red polygon) is indicated as insignificant and low.

4.1 3. Public consultation

No public consultation was conducted by the heritage consultant during the screening phase.

4.1.4. Google Earth and mapping survey

Google Earth and 1:50 000 maps of the area was utilised to identify possible places where archaeological sites might be located.

4.1.5. Genealogical Society of South Africa

No grave sites are indicated within the study area.

5. ASSUMPTIONS AND LIMITATIONS

This study did not assess the impact on intangible resources of the project. Additional information could become available in future that could change the results of this report.

6. FINDINGS

The mine identified seven (7) sites initially, which have been reduced to four (4) (Site B, C, D and F), with site D being the most favourable for the mine. Based on the initial review by the Environmental Assessment Practitioner, Site B was found to be fatally flawed due to the potential future Eskom substation but has now been included.

The potential heritage constraints relating to each site were evaluated to determine the best suited site for the proposed development from a heritage perspective as outlined below:

TSF Option	Approximate size of area	Heritage constraints and numerical rating based on preference
Site B	25.8 ha	The stone wall foundations of a ruin and a possible Early Iron Age site was recorded within Site B. The study area is however disturbed, possibly by previous cultivation reducing the significance of the recorded finds. The recorded sites will require limited mitigation and Site B is therefore the third option from a heritage point of view (3).
Site C	21 ha	From a heritage point of view the heritage sensitivity associated with Site C is high due to the Iron Age sites recorded in the impact area and this option is therefore the least suitable for the proposed development (4).
Site D	19 ha	Site D is from a heritage point of view the preferred site (1). Site D has previously been disturbed and no heritage resources were identified inside the footprint area of the proposed TSF. It should be noted that a cemetery occurs on the periphery of the site, and this area should be demarcated and avoided.
Site F	17 ha	Site F is also considered to be acceptable if the correct management and mitigation measures are implemented (2). Site F is however located in a pristine Greenfields area and therefore less suitable than Site D.

7 OCCURRENCES OF SITES

From a heritage point of view a number of factors were considered including the occurrence of heritage sites and whether the site has been previously disturbed (Table 1)

Table 1. Limitations considered in the site selection process

	Site B	Site C	Site D	Site F
Heritage Sites within Footprint	X	X		
Graves/ Cemeteries within footprint				
Paleontological Sensitivity				
Pristine Area				X
Rating	3	4	1	2

8. CONCLUSIONS AND RECOMMENDATIONS

The scope of work comprises a preferred site selection process for the Khulu TSF Project. Dwarsrivier Chrome Mine identified 7 sites but due to Environmental constrains four potential sites (Site B, C, D and F) were selected and assessed in this report. This screening report was conducted based on a desktop study of available data regarding cultural heritage resources of the area as well as a walkdown of the proposed impact areas.

Based on the findings of this screening report Site D is from a heritage point of view the preferred site. Site D has previously been disturbed and no heritage resources were identified inside the footprint area of the proposed TSF. It should be noted that a cemetery occurs on the periphery of the site, and this area should be demarcated and avoided.

Site F is also considered to be acceptable if the correct management and mitigation measures are implemented. Site F is however located in a pristine Greenfields area and therefore less suitable than Site D.

The stone wall foundations of a ruin and a possible Early Iron Age site was recorded within Site B. The study area is how ever disturbed, possibly by previous cultivation reducing the significance of the recorded finds. The recorded sites will require limited mitigation and Site B are therefore the third option from a heritage point of view

From a heritage point of view the heritage sensitivity associated with Site C are considered to be high due to the high number of Iron Age sites in the impact area and this option is not recommended for the proposed development.

It is recommended that the preferred site should be subjected to a Heritage Impact Assessment.

9. PLAN OF STUDY

With cognisance of the recorded archaeological sites in the wider area and in order to comply with the National Heritage Resources Act (Act 25 of 1999) it is recommended that a Phase 1 heritage impact assessment must be undertaken for the preferred site. During the study sites of archaeological, historical or places of cultural interest must be located, identified, recorded, photographed and described. During this study the levels of significance of recorded heritage resources must be determined and mitigation proposed should any significant sites be impacted upon, ensuring that all the requirements of SAHRA are met.

10. LIST OF PREPARERS

Jaco van der Walt (Archaeologist and project manager)

11. STATEMENT OF COMPETENCY

The author of the report is a member of the Association of Southern African Professional Archaeologists and is also accredited in the following fields of the Cultural Resource Management (CRM) Section, member number 159: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. Jaco is also an accredited CRM Archaeologist with SAHRA and AMAFA.

Jaco has been involved in research and contract work in South Africa, Botswana, Mozambique, Zimbabwe, Tanzania and the DRC and conducted well over 300 AIAs since he started his career in CRM in 2000. This involved several mining operations, Eskom transmission and distribution projects and infrastructure developments. The results of several of these projects were presented at international and local conferences.

12. STATEMENT OF INDEPENDENCE

I, Jaco van der Walt as duly authorised representative of Heritage Contracts and Archaeological Consulting CC, hereby confirm my independence as a specialist and declare that neither I nor the Heritage Contracts and Archaeological Consulting CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which the client was appointed as Environmental Assessment practitioner, other than fair remuneration for work performed on this project.



SIGNATURE:

13. REFERENCES

Archaeological Database Wits University Referenced 2009

National Heritage Resources Act NHRA of 1999 (Act 25 of 1999)

SAHRA Report Mapping Project Version 1.0, 2009

SAHRIS (Cited 2019)