ARCHAEOLOGICAL IMPACT ASSESSMENT

CHROME SMELTER, BRITS, NORTH WEST PROVINCE

Prepared For

Quanto Environmental Solutions

By

wits enterprise

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I, Jaco van der Walt as duly authorised representative of Wits Heritage Contract Unit, University of the Witwatersrand, hereby confirm my independence as a specialist and declare that neither I nor the Heritage Contract Unit have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which Quanto Environmental Solutions was appointed as Environmental Assessment practitioner in terms of the National Environmental Management Act, 1998 (Act No.107 of 1998), other than fair remuneration for worked performed on this project.

SIGNATURE: _____

Executive Summary

Site name and location: Brits Ferrochrome Project located outside of the Brits Industrial area, Brits, North West Province

Provincial district: Bojanala Platinum District and Madibeng Local Municipality

Developer: Beneficiation Company of Southern Africa (Pty) Ltd ("BenficoSA")

Environmental Consultant: Quanto Environmental Solutions cc

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National grid reference: The proposed project is located on the 1:50 000 topographical map sheet 2527 DB

Date of field work: 26 May 2009

Date of Report: 15 September 2009

Findings of the Assessment: Three sites of heritage significance were identified during the survey of the footprint of the proposed development. Some impact on these sites can be expected during the course of the development. If the recommendations, as made in section 5 of this report, are adhered to there are, from a Heritage point of view, no reasons why the project cannot commence.

General

Low ground visibility is present on parts of the sites due to high vegetation growth and the possibility of the occurrence of unmarked graves and subsurface finds cannot be excluded. If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

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

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1. INTRODUCTION

Wits Heritage Contracts Unit was contracted by Quanto Environmental Solutions to conduct an Archaeological Impact Assessment focusing, but not limited to, Archaeological resources of the proposed Brits Ferrochrome Project. The project area is located just east of the Brits Industrial area, within the North West Province. The report forms part of the EIA for the proposed project.

The aim of the study is to identify heritage sites, to document, and to assess their importance within Local, Provincial and national context. The aim is further to assess the impact of the proposed project on non renewable heritage resources and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes:

- Phase 1: Information collection from various sources and consultations;
- Phase 2: Physical surveying of the area on foot and by vehicle; and
- Phase 3: Reporting the outcome of the study.

During the survey, three sites of low to medium heritage significance were identified. General site conditions and features on these sites were recorded by means of photos, GPS location, and description. Possible impacts were identified and mitigation measures are proposed in the following report.

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

1.2 TERMS OF REFERENCE

The terms of reference (ToR) for the particular study is outlined below

Conduct brief desktop study to:

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

Conduct a field study to:

- Systematically survey the proposed footprint of the study area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; and record GPS points of significant areas identified; and
- Determine the levels of significance of the various types of heritage resources recorded in the project area.

Reporting:

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

1.3 NATURE OF THE DEVELOPMENT

The project entails the smelting of chrome concentrate by means of a DC Furnace to produce a ferrochrome (FeCr) product. This is not a mining project, the chrome concentrate will be transported to site from an existing mine in the area. The project also caters for internal access roads as well as lay down areas for the chrome concentrate, raw materials and the product (FeCr)

1.4 DESCRIPTION OF STUDY AREA

The project area is located approximately 3 km east from Brits Industrial area, North West Province. The study area has been extensively disturbed in the past by earth moving activities and the partial construction of a railway line. These activities would also have impacted negatively on any visible evidence of heritage resources. Refer to main EIA report for geographical, environmental and demographic issues.

2. APPROACH AND METHODOLOGY

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

2.1 PHYSICAL SURVEYING

- Due to the nature of cultural remains, with the majority that occurs below surface, a physical walk through of the study area was conducted. The study area was surveyed over a period of one day, by means of vehicle and extensive surveys on foot.
- Aerial photographs and 1:50 000 maps of the area were consulted and literature of the area were studied before undertaking the survey. The purpose of this was to identify topographical areas of possible historic and pre-historic activity.
- All sites discovered, both inside and bordering the proposed development area, was plotted on 1:50 000 maps and their GPS co-ordinates noted. 35mm digital photographs were taken at all the sites.

3. BASELINE ASSESSMENT

3.1 ABBREVIATIONS

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

3.2 DEFINITIONS

Archaeological resources:

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

Rock art:

Being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation.

Wrecks:

Being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation.

Military:

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

Cultural significance:

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

Development:

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

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or hoardings;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil.

Heritage resources:

This means any place or object of cultural significance

Stakeholders:

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

3.3. ARCHAEOLOGICAL LEGISLATION AND BEST PRACTICE

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

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

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

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

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

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

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

Phase 2 archaeological projects are primarily based on salvage / mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations should be done under a permit issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and include as a minimum report back strategies to SAHRA and submission 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 a minimum requirement.

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

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

authority is required and all regulations, laws and by-laws set by the cemetery authority must be adhered to.

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

3.4. ASSESSMENT CRITERIA

3.4.1 Evaluation of Heritage sites

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

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

3.4.2 Heritage Site Significance and Mitigation Measures

Site significance classification standards prescribed by the SAHRA (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used for the purpose of this report. The recommended mitigation needed, as prescribed below, should be read in conjunction with section 5 of this report.

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

3.5. ARCHAEOLOGICAL CONTEXT OF STUDY AREA

South Africa has one of the longest archaeological sequences in the world because humanity evolved in the area stretching from the Cape to Ethiopia. Most of this sequence covers the times when our ancestors used stone tools.

It is worthwhile, thus, to review the archaeological record for southern Africa and to place in context the known occurrences.

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

Stone Age:

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

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

The Early Stone Age in southern Africa is defined by the Oldowan complex, primarily found at the sites Sterkfontein, Swartkrans and Kroomdraai, situated within the Cradle of Humankind, just outside Johannesburg (Kuman, 1998). Within this complex, tools are more casual and expediently made and tools consist of rough cobble cores and simple flakes. The flakes were used for such activities as skinning and cutting meat from scavenged animals. This industry is unlikely to occur in the study area.

The second complex is that of the more common Acheulean, defined by large handaxes and cleavers produced by hominids at about 1.4 million years ago (Deacon & Deacon, 1999). Among other things these Acheulian tools were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus that had died from natural causes. Acheulian artefacts are usually found near the raw material from where they were quarried, at butchering sites, or as isolated finds. No Acheulian sites are on record near the project area, but isolated finds are possible. However, isolated finds have little value. Therefore, the project is unlikely to disturb a significant site. The presence and significance of finds will be determined by a field investigation.

Middle Stone Age: Various lithic industries in SA dating from ± 250 000 yrs – 22 000 yrs before present

During the Middle Stone Age (MSA), significant changes start to occur in the evolution of the human species. These changes manifest themselves in the complexity of the stone tools created, as seen in the diversity of tools, the standardisation of these tools over a wide spread area, the introduction of blade technology, and the development of ornaments and art. What these concepts ultimately attest to is an increase or development of abstract thinking. By the beginning of the MSA, tool kits included prepared cores, parallel-sided blades and triangular points hafted to make spears (Volman, 1984). MSA people had become accomplished hunters by this time, especially of large grazing animals such as wildebeest, hartebeest and eland.

These hunters are classified as early humans, but by 100,000 years ago, they were anatomically fully modern. The oldest evidence for this change has been found in South Africa, and it is an important point in debates about the origins of modern humanity. In particular, the degree to which behaviour was fully modern is still a matter of debate. The repeated use of caves indicates that MSA people had developed the concept of a home base and that they could make fire. These were two important steps in cultural evolution (Deacon & Deacon, 1999). Accordingly, if there are caves in the study area, there may be sites of archaeological significance.

MSA artefacts are common throughout southern Africa, but unless they occur in undisturbed deposits, they have little significance. Some MSA sites are on record close to the study area.

Later Stone Age: The period from ± 22 000-yrs before present to the period of contact with either Iron Age farmers or European colonists.

By the Late Stone Age, human beings are anatomically and culturally modern. Tools associated with this time period are specialised, and commonly associated with hunter-gatherer groups. It is also within this period that contacts with migrating groups occur throughout southern Africa. Initial contact was between hunter-gatherer groups and expanding Bantu farming societies, and secondly with the arrival of colonist along the coast.

San rock art has a well-earned reputation for aesthetic appeal and symbolic complexity (Lewis-Williams, 1981). Several known rock art sites occur in the general project area.

In addition to art, LSA sites contain diagnostic artefacts, including microlithic scrapers and segments made from very fine-grained rock (Wadley, 1987). Spear hunting probably continued, but LSA people also hunted small game with bows and poisoned arrows. Sites in

the open are usually poorly preserved and therefore have less value than sites in caves or rock shelters. If there are rock shelters or caves in the study area, they may contain LSA sites of significance.

Iron Age (general):

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the pre-Historic and Historic periods. It can be divided into three distinct periods:

- The Early Iron Age: Most of the first millennium AD;
- The Middle Iron Age: 10th to 13th centuries AD; and
- The Late Iron Age: 14th century to colonial period.

The Iron Age is characterised by the ability of these early people to manipulate and work iron ore into implements that assisted them in creating a favourable environment to make a better living.

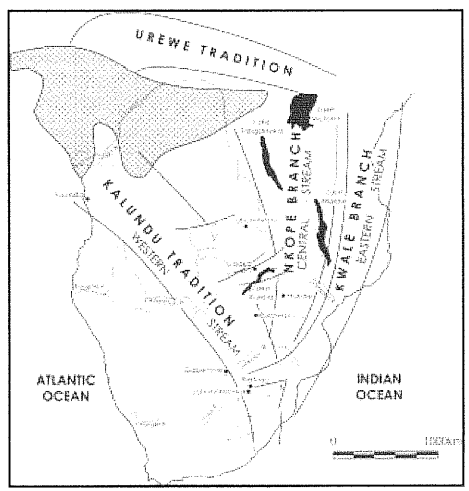

Figure 1: Movement of Bantu speaking farmers (Huffman 2007)

A short literature review of known sites in the study area follows:

Early Iron Age:

Early in the first millennium AD, there seem to be a significant change in the archaeological record of the greater part of eastern and southern Africa lying between the equator and Natal. This change is marked by the appearance of a characteristic ceramic style that belongs to a single stylistic tradition. These Early Iron Age (EIA) people practised a mixed farming economy and had the technology to work metals like iron and copper. A meaningful interpretation of the EIA has been hampered by the uneven distribution of research conducted so far; this can be partly attributed to the poor preservation of these early sites.

Some EIA sites are on record in the North West province most notably the archaeological Site of Broederstroom and sites belonging to this period might be expected in the study area although no sites are on record in the immediate vicinity of the proposed project area.

Middle Iron Age:

No sites dating to this period are on record for the study area.

Late Iron Age:

For the area in question the history and archaeology of the Sotho Tswana are of interest. The ceramic sequence for the Sotho Tswana is referred to as Moloko and consists of different facies with origins in either the Icon facies or a different branch associated with Nguni speakers. Several sites belonging to the Madikwe and Olifantspoort facies (from Icon) have been recorded close to the project area. These sites date to between AD 1500 and 1700 and predate stone walling ascribed to Sotho-Tswana speakers. Sotho Tswana stonewalled sites with Uitkomst pottery have been found close to the study area and dates to the seventeenth to nineteenth centuries.

The area surrounding the project area has seen numerous human migrations and settlement over the past 300 years. During this period the area surrounding Brits was inhabited by Bakwena, Bakgatla, Bafokeng, BaRolong as well as Ndebele groups. A good indication of the people located here during the first half of the 18th Century, can be found in Breutz's (1953) description of the Bakwena ba Mogopa. He indicates that when they settled in the area to the north-east of present-day Brits, their land stretched from the Apies and Pienaar Rivers in the north, the Hennops River in the south as well as the Crocodile River to the west. He also states that at the time their neighbours were the Bapo and Bafokeng to the

west, the Bakgatla ba Motsha to the north as well as the Transvaal Ndebele (Matsutsa) and Matlhakwana in the east.

Evidence for Iron Age activity will most likely be concentrated along water courses and rocky outcrops marked by ceramic clusters or dry stone walling.

Historic Timeframe:

The historic timeframe sometimes intermingles with the later parts of the Stone and Iron Age, and can loosely be regarded as times when written and oral accounts of incidents became available. Therefore the accounts of early European travellers is a valuable source of information. During the early part of the 19th century a number of European travellers, explorers and missionaries like Robert Moffat (1829-1830) and Andrew Smith (1834-1836) journeyed through the areas surrounding present-day Brits. The observations made by one of these early travellers, namely Robert Moffat will be discussed in more detail.

During 1829 Robert Moffat undertook a journey to visit Mzilikazi of the Khumalo-Ndebele (Matabele). As Mzilikazi was staying in the vicinity of present-day Pretoria, he travelled through the general vicinity of the study area. Of importance as well is that he travelled along the northern side of the Magaliesberg mountains, which would have given him the opportunity to travel quite close to the present study area.

As he travelled closer to what today is known as Wolhuterskop, his Tswana informant mentioned that these areas were quite populous, and that the people who resided here were very wealthy in that they had many cattle. He also indicated that these people traded with people from far to the north.

Moffat also relates the memories of his informant regarding the people who used to reside in this general vicinity, as well as the defeat of one of the towns. Parsons (1995) indicates that these people referred to in Moffat's text are in fact the Bapo, while the ransacked town is Tobong (the Bapo settlement to the north of Wolhuterskop). The defeat of Tobong and Tlhogokgolo (Wolhuterskop) is also described by Moffat (Birkholtz et al 2005).

Archaeological Database:

The archaeological database at Wits show 32 known heritage sites documented on the 2527 DB 1:50 000 topographical Map. Of the 32 sites only 4 sites are close enough to the current study to be noted, the sites consist of Late Iron Age Stone walled sites.

3.5.1 Probability of occurrence of sites

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

A. PALAEONTOLOGICAL LANDSCAPE

CONTEXT

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

B. ARCHAEOLOGICAL LANDSCAPE

CONTEXT

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

Archaeological remains dating to the following periods can be expected with in the study area:

Stone Age finds

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

Iron Age Finds

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

Historical finds

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

Military Finds

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

Burial/Cemeteries

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

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

3.6. SITES OF SIGNIFICANCE

The recommended mitigation as prescribed below in tables should be read in conjunction with section 5 of this report.

3.6.1 Site 1

This is the location of a Late Iron Age site. The site is located in deep turf and cultural material consists of undecorated ceramics, a stone cairn and badly preserved dry stone wall foundations. The stone cairn might not be archaeological and measures 4 meter in diameter. The site is overgrown and due to the bad preservation of the site it is not possible to determine the extend of the site.

Heritage Significance

FIELD RATING	*GRADE*	*SIGNIFICANCE*	*RECOMMENDED MITIGATION*
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction

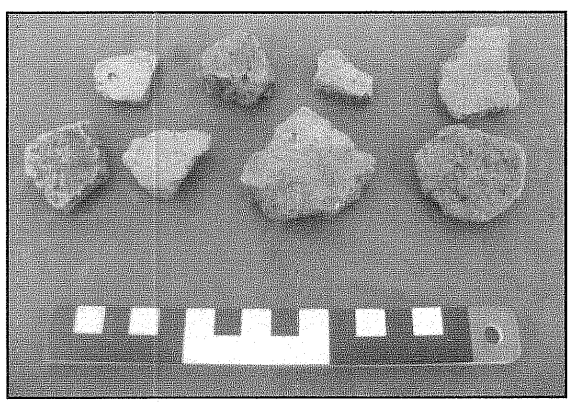

Figure 2: Undecorated ceramics from site 1

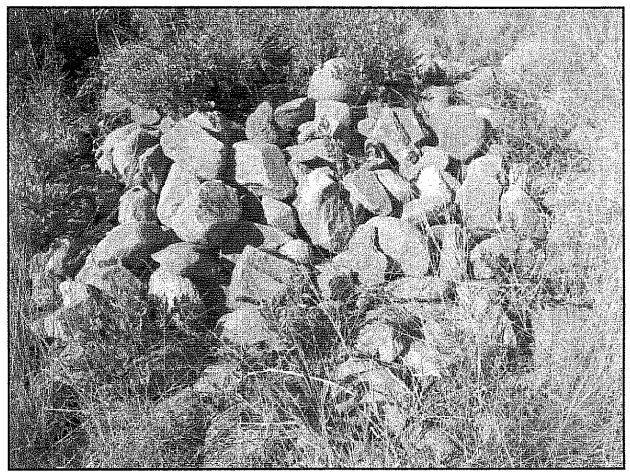

Figure 3: Stone cairn

3.6.2 Site 2

This is the location of a concentration of undecorated ceramics and badly preserved dry stone wall foundations in deep turf. The site is highly overgrown and it was not possible to take diagnostic photographs.

Heritage Significance

FIELD RATING	*GRADE*	*SIGNIFICANCE*	*RECOMMENDED MITIGATION*
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction

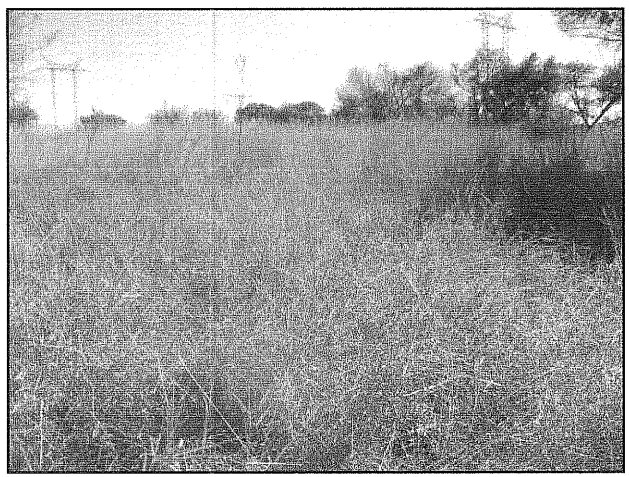

Figure 4: General site conditions at Site 2

3.6.3 Site 3

This is the location of the remains of a partly demolished structure. The site is highly overgrown but most of the foundations of the dwelling are still visible as well as large sections of the eastern and southern wall. Industrial rubble like wire and glass litters the site.

Heritage Significance

FIELD RATING	*GRADE*	*SIGNIFICANCE*	*RECOMMENDED MITIGATION*
Generally Protected C (GP.C)	-	Low Significance	Destruction

Figure 5: Dilapidated structure at site 3

3.7. ASSUMPTIONS AND LIMITATIONS

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

4. POTENTIAL IMPACTS

Pre-Construction phase:

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

Construction Phase

During this phase the impacts and effects are similar in nature but more extensive than the pre-construction phase. These activities can have a negative and irreversible impact on all of the recorded heritage sites. Impacts include destruction or partial destruction of non renewable heritage resources.

Operation Phase:

If the heritage recourses are responsibly managed during the pre-construction and construction phases of the project little further impact is envisaged for the recorded heritage resources.

5. RECOMMENDATIONS

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

If possible none of the documented sites must be destroyed, however if this is not an option the following recommendations are applicable for the following sites.

Sites 1, 2:

Similar ill defined stone walled sites have been found during previous CRM projects around the study area. These sites could be classified as possible type N walling but needs to be verified. Sites like these have an emphasis on the centre / side axis. If these sites are impacted upon by the development it is recommended that the stone walls where visible are documented on scaled plan sketches and that test excavations are conducted next to the best preserved walls.

Site 3:

The site is partly demolished and what is remaining of the structure has little architectural value and is therefore of low significance, however sites like these might contain graves. The site is highly overgrown and no indication of graves was noted during the survey.

During bush clearing cognisance must be taken of the possibility of finding graves and if found must immediately be reported to SAHRA. If the demolished structure is impacted upon no further action is necessary.

6. CONCLUSIONS

Three sites of heritage significance were identified during the survey of the footprint area of the proposed development. Some impacts on these sites can be expected during the course of the development. If the recommendations as made in section 5 of this report are adhered to there are, from a Heritage point of view, no reasons why the project cannot commence.

General

Low ground visibility is present on parts of the sites due to high vegetation growth and the possibility of the occurrence of unmarked graves and subsurface finds cannot be excluded. If, during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

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ANNEXURE A:
Locality Map
&
Site Co-ordinates

Site Number	Type Site	Co-oordinates
Site 1	Late Iron Age	S25 37 58.8 E27 50 45.7
Site 2	Late Iron Age	S25 37 58.0 E27 50 44.3
Site 3	Demolished structure	S25 37 51.3 E27 50 17.1

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