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A PHASE I HERITAGE STUDY FOR THE UPGRADING OF BASE LINE INFORMATION AND FOR THE AMENDMENT OF THE ENVIRONMENTAL MANAGEMENT PROGRAM REPORT FOR HERNIC FERROCHROME NEAR MADIBENG IN THE NORTH-WEST PROVINCE

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EXECUTIVE SUMMARY

This Phase I Heritage Impact Assessment (HIA) study for Hernic Ferrochrome near Madibeng in the North-West Province of South Africa was done according to Section 38 of the National Heritage Resources Act (No 25 of 1999). The aims with the Phase I HIA study were the following, namely:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (Box 1) do occur in the Project Area and, if so, to determine the nature and the extent of these remains.
- To establish whether any of the types and ranges of heritage resources which have been identified in the Project Area will be affected by Hernic's operations and, if so, to establish appropriate mitigation and management measures for these heritage resources.

The Phase I HIA for Hernic revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the Project Area, namely:

- Two graveyards.

The graveyards were geo-referenced and mapped (Figure 6, Table 1). The significance of the graveyards and the significance of any impact on the graveyards are indicated (Table 1 & 2). Mitigation measures are outlined for the graveyards that remain unaffected in the Project Area.

The significance of the graveyards

All graveyards and graves can be considered to be of high significance and are protected by various laws (Table 1). Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds.

Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

Possible impact on the graveyards

The graveyards will not be affected by Hernic's operations.

The significance of the impact on the graveyards

The significance of the impact on the graveyards is very low (Table 2).

Mitigating the impact on the graveyards

No impact will occur on the graveyards. Consequently, the graveyards require no mitigation measures.

However, the following management measures should be implemented in order to ensure that the graveyards remain unaffected during Hernic's operation and eventual closure, namely:

- The graveyards must be demarcated with fences or with walls and must be fitted with access gates.
- Regulated visitor hours should be implemented that is compatible with mine safety rules. This will not be necessary if the graveyards are located next to the national or a public road which provides direct access to the graveyards.
- Corridors of at least 20m should be maintained between the graveyard's fence and any developmental components such as infrastructure or roads that may be developed in the future.
- The graveyards should be inspected every three months. Inspections should be noted in an inspection register. The register should outline the state of the graveyards during each inspection. Reports on damages to any of the graves or to the graveyard (fence, walls, gates) should be followed with the necessary maintenance work. Maintenance work should be recorded in the inspection register.
- Graveyards should be kept tidy from any invader weeds and any other refuse.

General remarks (disclaimer)

It is possible that this heritage survey may have missed heritage resources in the Project Area as heritage sites may occur in clumps of vegetation or tall grass while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during Hernic's operations the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in

order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

CONTENTS

1 INTRODUCTION

1.1 Project Background

This Phase I Heritage Impact Assessment (HIA) study is one of a series of specialist study reports which are compiled in support of the upgrading of baseline information and for the amendment of the Environmental Management Program for Hernic Ferrochrome (Hernic) near Madibeng in the North West Province.

Previous heritage surveys that were conducted for developers in the Madibeng District in the North-West Province indicated that the most common types and ranges of heritage resources which exist in this part of the province consists of stone walled sites which date from the Late Iron Age. However, various types and ranges of heritage resources that qualify as part of South Africa's 'national estate' as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur across the North-West Province (see Box 1, next page).

Box 1: Types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999).

The National Heritage Resources Act (Act 25 of 1999, Section 3) outlines the following types and ranges of heritage resources that qualify as part of the national estate:

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 natural features of cultural significance;
e. Geological sites of scientific or cultural importance;
f. Archaeological and palaeontological sites;
g. Graves and burial grounds including-
    i. Ancestral graves;
    ii. Royal graves and graves of traditional leaders;
    iii. Graves of victims of conflict;
    iv. Graves of individuals designated by the Minister by notice in the Gazette;
    v. Historical graves and cemeteries; and
    vi. Other human remains which are not covered in terms of the Human Tissue Act (Act 65 of 1983);
h. Sites of significance relating to the history of slavery in South Africa;
i. Moveable objects, including -
    i. Objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, material, meteorites and rare geological specimens;
    ii. Objects to which oral traditions are attached or which are associated with living heritage;
    iii. Ethnographic art and objects;
    iv. Military objects;
    v. Objects of decorative or fine art;
    vi. Objects of scientific or technological interest; and
    vii. Books, records, documents, photographs, positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act (Act 43 of 1996).

The National Heritage Resources Act (Act 25 of 1999, Sec 3) also distinguishes nine criteria for a place and/or object to qualify as 'part of the national estate if they have cultural significance or other special value …'. These criteria are the following:

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

1.2 Definitions

Terms that may be used in this report are briefly outlined below:

- Conservation: The act of maintaining all or part of a resource (whether renewable or non-renewable) in its present condition in order to provide for its continued or future use. Conservation includes sustainable use, protection, maintenance, rehabilitation, restoration and enhancement of the natural and cultural environment.
- Conservation (*in-situ*): The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.
- Cultural (heritage) resources: A broad, generic term covering any physical, natural and spiritual properties and features adapted, used and created by humans in the past and present. Cultural resources are the result of continuing human cultural activity and embody a range of community values and meanings. These resources are non-renewable and finite. Cultural resources include traditional systems of cultural practice, belief or social interaction. They can be, but are not necessarily identified with defined locations.
- Cultural (heritage) resource management: A process that consists of a range of interventions and provides a framework for informed and value-based decision-making. It integrates professional, technical and administrative functions and interventions that impact on cultural resources. Activities include planning, policy development, monitoring and assessment, auditing, implementation, maintenance, communication, and many others. All these activities are (or will be) based on sound research.
- Heritage resources: The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. Heritage (cultural) resources include all human-made phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

- Stone Age: Refers to the prehistoric past, although Late Stone Age peoples lived in South Africa well into the Historical Period. The Stone Age is divided into an Earlier Stone Age (3 million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years to 40 000 years ago) and the Late Stone Age (40 000 years to 300 years ago).
- Iron Age: Refers to the last two millennia and 'Early Iron Age' to the first thousand years AD. 'Late Iron Age' refers to the period between the 16th century and the 19th century and can therefore include the Historical Period.
- Historical period: Refers to the first appearance or use of 'modern' Western writing in a particular area or region of the world.
- Pre-historical: Refers to the time before any historical documents were written or any written language developed in a particular area or region of the world.
- Recent past: Refers to the 20th century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may, in the near future, qualify as heritage resources.
- Maintenance: Keeping something in good health or repair.
- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.
- Protected area: A geographically defined area designated and managed to achieve specific conservation objectives. Protected areas are dedicated primarily to the protection and enjoyment of natural or cultural heritage, to the maintenance of biodiversity, and to the maintenance of life-support systems.
- Reconstruction: Re-erecting a structure on its original site using original components.
- Replication: The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, object, or a part thereof, as it appeared at a specific period.
- Restoration: Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components.

- Sustainability: The ability of an activity to continue indefinitely, at current and projected levels, without depleting social, financial, physical and other resources required to produce the expected benefits.
- Translocation: Dismantling a structure and re-erecting it on a new site using original components.
- Project Area: refers to the area (footprint) where the developer wants to focus its development activities (refer to plan).
- Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types and ranges of heritage resources in any given Project Area.
- Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include the documenting of rock art, engraving or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavations of archaeological sites; the exhumation of human remains and the relocation of graveyards, etc. Phase II work involve permitting processes, require the input of different specialists and the co-operation and approval of SAHRA.

2 DETAILS OF THE SPECIALIST

Profession: Archaeologist, Museologist (Museum Scientists), Lecturer, Heritage Guide Trainer and Heritage Consultant

Qualifications:

BA (Archaeology, Anthropology and Psychology) (UP, 1976)

BA (Hons) Archaeology (distinction) (UP, 1979)

MA Archaeology (distinction) (UP, 1985)

D Phil Archaeology (UP, 1989)

Post Graduate Diploma in Museology (Museum Sciences) (UP, 1981)

Work experience:

Museum curator and archaeologist for the Rustenburg and Phalaborwa Town Councils (1980-1984)

Head of the Department of Archaeology, National Cultural History Museum in Pretoria (1988-1989)

Lecturer and Senior lecturer Department of Anthropology and Archaeology, University of Pretoria (1990-2003)

Independent Archaeologist and Heritage Consultant (2003-)

Accreditation: Member of the Association for Southern African Professional Archaeologists. (ASAPA)

Summary: Julius Pistorius is a qualified archaeologist and heritage specialist with extensive experience as a university lecturer, museum scientist, researcher and heritage consultant. His research focussed on the Late Iron Age Tswana and Lowveld-Sotho (particularly the Bamalatji of Phalaborwa). He has published a book on early Tswana settlement in the North-West Province and has completed an unpublished manuscript on the rise of Bamalatji metal workings spheres in Phalaborwa during the last 1 200 years. He has excavated more than twenty LIA settlements in North-West and twelve IA settlements in the Lowveld and has mapped hundreds of stone walled sites in the North-West. He has written a guide for Eskom's field personnel on heritage management. He has published twenty scientific papers in academic journals and several popular articles on archaeology and heritage matters. He collaborated with environmental companies in compiling State of the Environmental Reports for Ekhurhuleni, Hartebeespoort and heritage management plans for the Magaliesberg and Waterberg. Since acting as an independent consultant he has done approximately 800 large to small heritage impact assessment reports. He has a longstanding working relationship with Eskom, Rio Tinto (PMC), Rio Tinto (EXP), Impala Platinum, Angloplats (Rustenburg), Lonmin, Sasol, PMC, Foskor, Kudu and Kelgran Granite, Bafokeng Royal Resources, Pilanesberg Platinum Mine, etc. as well as with several environmental companies.

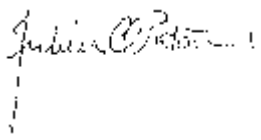
3 DECLARATION OF INDEPENDENCE

I, Julius CC Pistorius, declare that:

•I act as the independent environmental practitioner in this application
•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
•I declare that there are no circumstances that may compromise my objectivity in performing such work;
•I have expertise in conducting environmental impact assessments, including knowledge of the National Heritage Resources Act (No 25 of 1999) and any guidelines that have relevance to the proposed activity;
•I will comply with the Act, regulations and all other applicable legislation;
•I will take into account, to the extent possible, the matters listed in regulation **8** of the regulations when preparing the application and any report relating to the application;
•I have no, and will not engage in, conflicting interests in the undertaking of the activity;
•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;
•I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
•I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
•I will keep a register of all interested and affected parties that participated in a public participation process; and
•I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
•all the particulars furnished by me in this form are true and correct;
•will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
•I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010.



Signature of the environmental practitioner:
Private Consultant

Name of company:
5 May 2016

Date:

4 SCOPE OF WORK

Hernic Ferrochrome (hereafter referred to as Hernic) near Madibeng in the North-West Province intends to upgrade the baseline information for its smelter and mine and to amend its Environmental Management Program (EMP) report. JMA Consulting (Pty) Ltd who is responsible for upgrading and amending the Environmental Management Program (EMP) report commissioned the author to undertake a Phase I HIA study for Hernic.

The aims with the Phase I HIA study were the following, namely:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (Box 1) do occur in the Project Area and, if so, to determine the nature and the extent of these remains.
- To establish whether any of the types and ranges of heritage resources which have been identified in the Project Area will be affected by Hernic's operations and, if so, to establish appropriate mitigation and management measures for these heritage resources.

5 LEGAL FRAMEWORK

South Africa's heritage resources ('national estate') are protected by international, national and regional legislation which provides regulations, policies and guidelines for the protection, management, promotion and utilization of heritage resources. South Africa's 'national estate' includes a wide range of various types of heritage resources as outlined in Section 3 of the National Heritage Resources Act (NHRA, Act No 25 of 1999) (see Table 1).

According to the NHRA (Act No 25 of 1999) heritage resources are categorised using a three-tier system, namely Grade I (national), Grade II (provincial) and Grade III (local) heritage resources.

At the provincial level, heritage legislation is implemented by Provincial Heritage Resources Agencies (PHRAs) which apply the National Heritage Resources Act (Act 25 of 1999) together with provincial government guidelines and strategic frameworks. Metropolitan or Municipal (local) policy regarding the protection of cultural heritage resources is also linked to national acts and is implemented by the South African Heritage Resources Agency (SAHRA) and the Provincial Heritage Resources Agencies.

At a national level heritage resources are dealt with by the National Heritage Council Act (Act No 11 of 1999) and the National Heritage Resources Act (Act No 25 of 1999).

5.1 Legislation relevant to heritage resources

The identification, evaluation and assessment of heritage resources in South Africa are regulated by the following legislation:

- National Environmental Management Act (NEMA) Act 107 of 1998
- National Heritage Resources Act (NHRA) Act 25 of 1999
- Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002

- Development Facilitation Act (DFA) Act 67 of 1995

5.2 The National Heritage Resources Act (NHRA)

According to the NHRA (Act No 25 of 1999) the 'national estate' comprises the following (see Table 1):

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. Graveyards, burial grounds and graves older than 60 years
h. Meteorites and fossils
i. Objects, structures and sites or scientific or technological value.

Elaborating on the above the 'national estate' also includes (Table 1):

1. Places, buildings, structures and equipment of cultural significance
2. Places to which oral traditions are attached or which are associated with living heritage
3. Historical settlements and townscapes
4. Landscapes and features of cultural significance
5. Geological sites of scientific or cultural importance
6. Archaeological and paleontological sites of importance
7. Sites of significance relating to the history of slavery
8. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military and ethnographic objects, books etc.)

5.3 Heritage Impact Assessment studies

According to Section 38 of the National Heritage Resources Act (Act No 25 of 1999) a Heritage Impact Assessment (HIA) process must be followed under the following circumstances:

- The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- The construction of a bridge or similar structure exceeding 50m in length
- Any development or activity that will change the character of a site and which exceeds 5 000m^2 or which involve three or more existing erven or subdivisions thereof
- Re-zoning of a site exceeding 10 000 m^2
- Any other category provided for in the regulations of SAHRA or a provincial heritage authority

5.4 Regulations with regard to heritage resources

The regulations outlined below are applicable to the types and ranges of heritage resources which are the most common in the region where the heritage study was conducted, namely:

5.4.1 Buildings and structures

According to Section 34(1) of the NHRA (Act No 25 of 1999) no person may alter (demolish) any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or any other facility made by people and which is fixed to land and which includes fixtures, fittings and equipment associated with such structures.

Alter means any action which affects the structure, appearance or physical properties of a place or object, whether by way of structural or any other works such as painting, plastering, decorating, etc..

5.4.2 Graves and burial grounds

Graves and burial grounds are divided into the following:

a. ancestral graves
b. royal graves and graves of traditional leaders
c. graves of victims of conflict
d. graves designated by the Minister
e. historical graves and cemeteries
f. human remains

In terms of Section 36(3) of the NHRA (Act No 25 of 1999) no person, without a permit issued by the relevant heritage resources authority, may:

a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
b) destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Unidentified graves are handled as if they are older than 60 years until proven otherwise.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the Ordinance on Excavations (Ordinance no. 12 of 1980) (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place. Human remains can only be handled by a registered undertaker or an institution declared under the Human Tissues Act (Act 65 of 1983 as amended).

5.4.3 Archaeology, palaeontology and meteorites

Section 35(4) of the NHRA (Act No 25 of 1999) deals with archaeology, palaeontology and meteorites and states that no person without a permit issued by the responsible heritage resources authority (national or provincial) may:

- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or paleontological material or object, or any meteorite; or bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological material or objects, or use such equipment for the recovery of meteorites.
- alter or demolish any structure or part of a structure which is older than 60 years.

Heritage resources may only be disturbed or moved by an archaeologist after being issued with a permit received from the South African Heritage Resources Agency (SAHRA). In order to demolish heritage resources the developer has to acquire a destruction permit by from SAHRA.

6 METHODOLOGY

The Phase I HIA study was conducted by means of the following:

6.1 Desktop study

Literature relating to the pre-historical and the historical unfolding of the Madibeng District was reviewed. This review provides a broad chronological overview of the region ranging from pre-historical times to the historical period including the development of granite, platinum and chrome mining in the region. It also refers to the BaKgatla and other Tswana clans who, together with the colonial Voortrekkers, were the most influential pre-historic and historical groups in the region. This contextual evidence contributes to a better understanding of the identity and meaning of heritage sites which may occur in and near Hernic Ferrochrome.

A number of heritage studies which were done for developers near the Project Area also provided information regarding the general heritage characteristics of the larger Project Area (see Part 12, 'Bibliography relating to earlier heritage studies').

The desktop study also involved consulting heritage data banks maintained at institutions such as the North-West Provincial Heritage Resources Agency in Mafekeng, the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria and the national heritage resources register at the South African Heritage Resources Agency (SAHRIS) in Cape Town.

The Project Area was also studied by means of maps on which it appears (Bapong 2527DA, 1: 50 000 topographical map; 2526 Rustenburg 1:250 000 map and Google imagery).

6.2 Fieldwork and research

The Project Area was surveyed with a vehicle and by means of pedestrian surveys. A track log which was registered with a mounted GPS instrument outlines the main route for the field survey from where pedestrian surveys were conducted. A number

of photographs also outline the characteristics of the Project Area (see Part 9.1 **‘**Fieldwork survey’).

A number of heritage impact assessment studies have been conducted in the larger project area (see Part 12, 'Bibliography relating to earlier heritage studies’).

All coordinates for heritage resources were recorded with a Garmin Etrex hand set Global Positioning System (instrument) with an accuracy of < 15m.

Figure 1- Track pathway registered with a mounted GPS outlines the main routes that were followed during the field survey from where pedestrian surveys were undertaken (above).

6.3 Baseline description

This heritage survey was compiled by means of a synthesis of the evidence derived from the desktop study (heritage data bases and literature research for contextual evidence) with the fieldwork evidence (GPS recording, describing, photographing and evaluating heritage resources encountered in the veld). This evidence was used to

provide a qualitative description and explanation of the various types and ranges of heritage resources that were encountered in the Project Area.

6.4 Proposed activity description

It is assumed that certain project activities may have a bearing (impact) on heritage resources. If such activities exist they will be described and assessment in terms of their possible influence on any heritage resources that occur in the Project Area.

6.5 The heritage impact assessment

The significance of heritage resources in the Project Area is indicated by means of stipulations derived from the NHRA (Act No 25 of 1999) as well as criteria derived from the historical and cultural context of the heritage resources that may be impacted by Hernic's operations.

The significance of potential heritage impacts was determined using a generic ranking scale which is used in most environmental and heritage impact assessment studies and which is based on various criteria (see Part 9.3, 'The significance of the impact on the graveyards').

6.6 Heritage management measures

Heritage management measures are based on guidelines derived from the National Heritage Resources Act (Act No 25 of 1999) and from guidelines provided by the South African Heritage Resources Authority SAHRA).

Recommendations for the handling of graves and human remains older than sixty years are based on terms derived from Section 36(3) of the National Heritage Resources Act (No 25 of 1999). Graves and human remains which are less than sixty years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must also conform to the standards set out in the Ordinance on Excavations (Ordinance no. 12 of 1980) (replacing the old Transvaal Ordinance no. 7 of 1925).and

6.7 Heritage monitoring plan

Heritage monitoring measures are based on principles associated with best practise and guidelines are derived from practical experiences with regard to the monitoring of heritage resources. Guidelines for best practise are formulated by SAHRA and ASAPA and are recommended to and applied by heritage researchers and consultants.

7 ASSUMPTIONS AND LIMITATIONS

7.1 Adequacy of predictive methods

No predictive evidence (such as models) is used in this study.

7.2 Adequacy of under laying assumptions

This study was primarily based on *priori* assumptions (or hypothetical evidence) such as the fact the heritage character of the larger project area is known according to the types and ranges of heritage resources which have been identified during earlier archaeological surveys which have been done in the past. These *priori* assumptions are correlated with empirical evidence which was derived from the fieldwork observations.

7.3 Uncertainty of information provided

It is possible that this base line heritage survey may have missed heritage resources in the Project Area as heritage sites may occur in clumps of vegetation or tall grass while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during Hernic's operations the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

8 THE PHASE I HERITAGE SURVEY

8.1 The Project Area

8.1.1 Location

Hernic is located on the farm De Kroon 444JQ and Elandsfontein 440JQ approximately ten kilometres to the south of Madibeng. The site falls within the Madibeng Local Municipality which is located within the Bojanala District Municipality of the North-West Province. Hernic is located in the divide between the Magaliesberg mountain range in the south and a series of granite kopjes running parallel but further to the north of the Magaliesberg. The Project Area falls within the sphere of influence of pre-historical and historical Tswana-Kgatla people (Bapong 2527DA, 1: 50 000 topographical map; 2526 Rustenburg 1:250 000 map and Google imagery) (Figures 1 & 2).

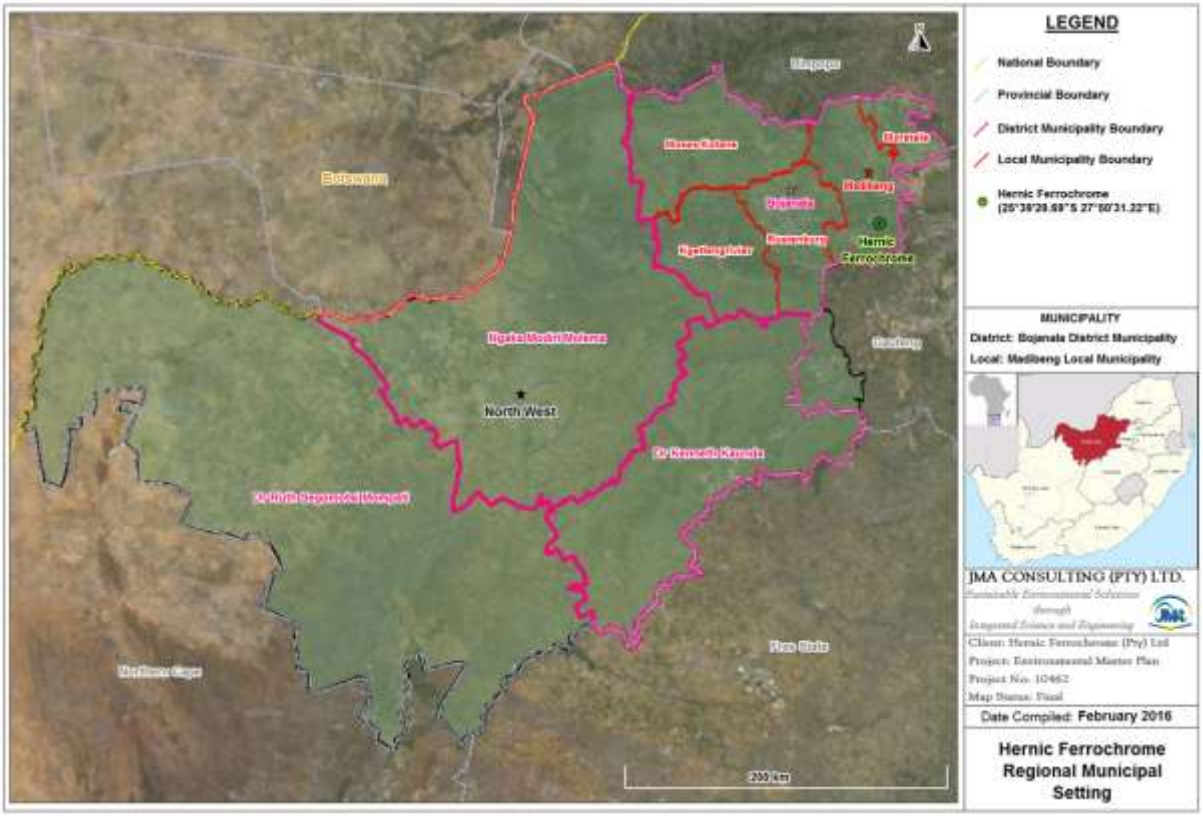


Figure 2- Regional setting for Hernic Ferrochrome near Madibeng in the North-West Province (above).

The Project Area falls within a regional cultural landscape which houses numerous Late Iron Age settlements which are associated with the ancestors of the Tswana and the Ndebele. This cultural landscape is an elongated swath of land stretching from Rustenburg in the west to Pretoria in the east and which is sandwiched between the norite hills in the north and the Magaliesberg in the south. The norite hills are composed of numerous large mountains and smaller kopjes and knolls which are covered with stone walled villages dating from the Late Iron Age. These settlements are the remnants of the predecessors of many of the Tswana speaking people who still live in this area today. Ndebele communities also occupied this mountain range during the Late Iron Age.

The Project Area therefore is part of a cultural landscape which warrants a brief description to demonstrate its place in the North-West's cultural history. Consequently, contextual evidence which illuminates the cultural-historical background of the Project Area is briefly outlined in this report (see Part 8.2, 'Contextualising the Project Area').

8.1.2 The nature of the Project Area

The Project Area is not a pristine piece of land any longer as the landscape has been transformed by mining and mining related developmental activities during the last three decades. This is also true for the larger project area which has been affected by agricultural activities over a prolonged period considering the irrigation potential of the Crocodile River as well as the development of the Hartebeespoort irrigation system as early as the 1920's; granite mining which is older than fifty years which had a severe impact on the norite hills in the region and residential and industrial development.

8.1.3 The nature of the Hernic's Operations

Hernic has been in operation since May 1996. The operations, which expanded over the years, comprise both mining of Chromite ore (initially opencast and then later from underground), ore beneficiation to yield feedstock chromite concentrate and lumpy ore, followed by pelletizing and sintering of the fine ore and finally Ferrochrome Smelting in four closed Furnaces, with an annual production capacity

of 420 000 tonnes of ferrochrome. Several chrome recovery operations from chromite containing slag are also active on the site. As the site expanded and was upgraded since 1996, Hernic has applied for, and obtained, the required Environmental Authorizations as and when required. It currently operates under an approved EMPR, which was amended as recently as 2012 and also holds a Water Use License, a Waste License, an Atmospheric Emissions License, as well as relevant EIA Authorizations. The project for which this Report is compiled, relates to further additions/upgrades/expansions of certain activities of Hernic's Brits Operations and for which Environmental Authorizations are required (an EMPR Addendum in terms of the MPRDA, Waste License in terms of NEMWA, Water Use License in terms of NWA and EIA Authorizations in terms of NEMA for listed activities

Figure 3- Site layout and infrastructure map of the Hernic Ferrochrome site near Madibeng in the North-West Province. Hernic primarily comprises a mining and chrome beneficiating industry (above).

8.2 Contextualising the Project Area

Several studies for developers have been conducted in the larger Project Area (see Part 12 'Bibliography relating to earlier heritage studies'). These studies have indicated that the most common heritage resources which occur in the region are the following:

- Stone walled sites which date from the Late Iron Age are relatively common in the region and can be associated with various pre-historical and historical Tswana spheres of influence.
- Second or third generation farmstead complexes which date from the first half of the twentieth century.

Heritage resources which are scarce in the larger Project Area include the following:

- Stone Age sites with dense concentrations of stone tools on the surface of the land although it is expected that such sites do exist but that they have not been discovered and/or adequately recorded.
- Historical platinum and chrome mining activities which sometimes are associated with limited infrastructure.

The following overview of pre-historical, historical and cultural evidence outlines the types and range of heritage resources which do occur across the larger Project Area.

The Bushveld Igneous complex gave rise to the Magaliesberg and the Witwatersberge more than 2 000 million years ago. The Magalies Valley (known as the Moot) lies between these mountain ranges; and the Bankeveld and its characteristic series of norite hills run parallel to the north of the Magaliesberg. The Magaliesberg is traversed by the Apies (Pebane), the Crocodile (Oori) and the Hex (Mutsukubje) rivers which all flow to the north. The Sterkstroom (Gwathle) and Waterval (Tlhabane) rivers' catchments are also in the Magaliesberg (Horn 1996).

Human history is closely linked to the mountain and its natural resources, which include an abundance of surface water, edible wild plants and fruit, animals and insects that can be used as food and as a supply of other resources. The various necks (*poorte*) in the Magaliesberg, the result of faults, run uninterrupted from

Pretoria in the east, to Rustenburg in the west. Since earliest times, these necks served as gateways for animals migrating between the warm bushveld savannah in the north to the cooler grassy plains on the Highveld to the south. Later, when the first humans lived in this area, nomadic Stone Age hunters followed migrating game through these necks. Vaguely recognisable low stone walls in the necks in the Magaliesberg also still reflect a human presence in the mountain from the earliest times, built by people waiting for game to hunt or an enemy to defend themselves, or using the necks as lookout points to look out beyond the Magaliesberg (Carruthers 2000).

Commemorative stone cairns (*isivivani*) found at Magatasnek, Hornsnek and other places in the Magaliesberg accumulated when travellers, for as many years as humans passed along those routes, added stones to these heaps in the belief that this act would ensure them safe passage when they crossed the mountain.

The cultural historical significance of the Magaliesberg can be traced back to the Early Stone Age, which began three million years ago, when *Australopithecinae*, humans' earliest ancestors, roamed the dolomite area to the south of the Magaliesberg. Here, in what is today called the Cradle of Humankind, one of South Africa's seven World Heritage Sites, some of the earliest evidence for the origins of human life was found in the Sterkfontein, Swartkrans and Kromdraai caves (Deacon & Deacon 1999).

Australopithecus was succeeded by the Acheulians, who spread remarkably quickly from Africa across the world. The Acheulians adapted successfully to various climates and environments hundreds of thousands of years ago. Large numbers of characteristic Acheulian hand axes and cleavers, stylistically similar across the world and manufactured by *Homo Erectus*, have been found at Wonderboompoort in the Magaliesberg (Mason 1968).

The predecessors to modern humans, *homo sapiens*, lived in the Magaliesberg during the Middle Stone Age, approximately two hundred thousand years ago. Middle Stone Age tools were found in the Kruger Cave and near Silkaatsnek. Middle Stone Age hunters-gatherers lived in open sites and in caves. They knew how to

make and control fire and used bows and arrows to hunt. They also gathered a wide range of foods from the veldt (Wadley 1987).

More than twenty thousand years ago, Middle Stone Age people were joined by Late Stone Age hunter-gatherers that either lived near small streams in the Magalies Valley or occupied caves on the slopes of the Magaliesberg. They manufactured microlithic stone tools and ate plant foods, including marula fruit. Rock shelters and caves were used as temporary dwellings and as religious sites where the people left rock paintings on the faces of walls. The Kruger Cave, Jubilee and Xanada shelters were all occupied by these people, whose ways of life were very similar to the historically known San people (Wadley 1987; Deacon & Deacon 1999).

Rock paintings sites occur at Jubilee Shelter and in the Kruger Cave near Olifantsnek. More of these sites will probably be discovered. Many exquisite rock engravings have been found on diabase rock along the south-facing slopes of the Magaliesberg, for example, at Maanhaarrand and Avondale. Most of these engravings depict animal figures in such detail that individual species can be identified without any difficulty (Mason 1968).

Rock engravings and paintings reflect much of the way Late Stone Age people thought. However, some engravings on smaller moveable rocks have been illegally removed from the Magaliesberg in the past. Consequently, a collection of engravings was removed from the mountain to the Rock Art Museum at the Johannesburg Zoo in the 1960s. Here they can be viewed by the public and they can be conserved.

From AD300 to AD500, mixed farming and pottery manufacture were practised near Broederstroom along the lower slopes of the Witwatersberge, south of the Magaliesberg. These Early Iron Age communities kept small livestock and possibly cattle as well. These farmers were the first humans to occupy large and semi-permanent villages near the Magaliesberg. They smelted iron ores, and they lived in what was believed to have been hemispherical mud houses in villages built using a circular ground plan. Such remains have also been found at Derdepoort, further to the east along the Magaliesberg.

During the Late Iron Age and in the historical period (AD1650 to AD1880), Tswana tribes such as the Fokeng and Tlôkwa (Rustenburg), the Kwena Môgôpa, the Kgatla of Motŝha and the Mmakau and the Kwena of Mogale (Madibeng and Hartebeespoort) lived to the north of the Magaliesberg. The Bapô, who originated from among the Nguni in Kwa Zulu/Natal, lived at Tlhôgôkgolo (Wolhuterskop), near the northern foot of the Magaliesberg, where they intermarried with local baTswana to become known as the Kwena Mogale. The Magaliesberg's name is derived from the name of one of their ancestral chiefs, Mogale (TNAD 1905).

Numerous stone walled sites, probably occupied by Sotho-Tswana and Ndebele clans during the Late Iron Age and historical period, occur along the slopes of the Magaliesberg. These settlements are visible on aerial photographs but most have not been studied or recorded in any detail as yet (Mason 1986). Stone walled settlements which date from the Late Iron Age and the Historical Period are common in the norite hills to the north of the Project Area and are associated with Kgatla and Kwena spheres of influence.

Conflicts and disputes between some baTswana clans near the Magaliesberg in the early nineteenth century were followed by the *difaqane* (AD1827-AD1832) when the Ndebele of Mzilikazi arrived in the Bankeveld. Many Tswana clans were subjugated by the Ndebele, who established at least three military kraals (*amakhanda*) near the Magaliesberg, at Silkaatsnek (derived from Mzilikazi's name), at Wonderboompoort and in the foothills of the Magaliesberg near Rustenburg. It is said that the Ndebele ruler had many of his foes and disloyal tribal members executed by having them thrown from the krantzes at Silkaatsnek. The ruins of Mzilikazi's villages (*imizi)* and military kraals (*amakhanda*) can still be seen in the Magaliesberg (Pistorius 1997a, 1997b, 1998).

The first travellers to visit the Magaliesberg during the early decades of the 19th century were traders, missionaries, scientists and adventurers such as Robert Schoon and William McLuckie (1829), Robert Moffat (1829), Andrew Smith (1835) and Cornwallis Harris (1836). Charles Bell and Cornwallis Harris left paintings of the Magaliesberg. They also illustrated animals and plants from the region and left depictions of the local population which serve a record of the cultural history and

lifestyles of Late Iron Age peoples near and in the Magaliesberg. They depicted the wretched living conditions of refugees, victims of the *difaqane*, living in massive fig trees (*Ficus Ingens*) along the Magaliesberg between Boshoek and Rustenburg during the 1830s.

The first Voortrekkers settled near the Magaliesberg during the 1840s. Voortrekker leaders such as Gert Kruger moved into the Moot and established the farm Hekpoort, now a small town in the area. Casper Kruger occupied farms on the southern slope of the Magaliesberg near Olifantsnek. Paul Kruger owned Waterkloof and later Boekenhoutfontein, and Andries Potgieter settled on Buffelshoek on the southern slopes of the Magaliesburg near Rustenburg. Johan Schoeman occupied Schoemansrust along to the Crocodile River, now in Hartbeespoort. Andries Pretorius acquired the farm 'Grootplaas', now called De Rust, which is partly flooded by the Hartebeespoort Dam (Bergh 1992; Erasmus 1995). A potential battle in a civil war between different factions among the Voortrekkers was warded off near the Magaliesberg in 1864. The opposing factions confronted each other in one of the necks in the Magaliesberg. The neck subsequently came to be called Kommandonek.

The Magaliesberg became an important battlefield during the Second Anglo Transvaal War (1899-1902). The British used the mountain as a natural barrier against which mobile Boer commandoes could be driven and trapped, and the Boer commandoes, who knew the terrain well, used the mountainous terrain to ambush the British. The British defensive system included blockhouses and redoubts which were established along the Magaliesberg and the Witwatersberg. Battles between Boer and Brit in the Magaliesberg during 1900 included the two battles of Silkaatsnek for control of the Rustenburg/Pretoria road; a battle at Olifantsnek for control of the Krugersdorp/Rustenburg road; the battle at Nooitgedacht, where the Boers defeated a large British column, and a battle at Buffelspoort, where the Boers destroyed a British supply convoy. General Beyers's escape route between Wolhuterskop and Kommandonek, across the Magaliesberg, can also be traced on maps of the area (Carruthers 2000; Van Vollenhoven 1997).

The first Boer cannons manufactured and used in Rustenburg during the Second Anglo Transvaal War (1899-1902) came from Bokfontein, to the north of the Magaliesberg. Graveyards for British and Boer soldiers, battlefields, memorials and monuments are therefore scattered all along the Magaliesberg (De Beer 1975).

The Hartebeespoort Dam (1921-1923), the Olifantsnek Dam (1932) and Buffelspoort Dam (1933) were constructed during the Depression, mostly using poor white labour. Two cemeteries close to the Magaliesberg are filled with children's graves, which attest to the hardships and poor living conditions the dam builders and their families endured. The Department of Water Affairs' engineering quarters and a residential suburb, railway lines and bridges across the Crocodile and Skeerpoort rivers can also still be seen there today (Carruthers 2000).

Ever since Carl Mauch arrived in Rustenburg and discovered chrome along the Hex River in 1865, a good deal of prospecting was done near the Magaliesberg. Minor copper and silver finds were reported. Chrome was commercially mined on De Kroon from 1921, north of the Magaliesberg. By 1925, several mines were in operation. After Hans Merensky had discovered platinum in the Steelpoort area in 1924, he followed the Merensky Reef around the perimeter of the Bushveld complex as far as Rustenburg.

Heritage resources in the form of buildings such as residences with outbuildings and infrastructure comprising multi-purpose sheds or former conspicuous tobacco sheds don't occur on De Kroon 444JQ any longer. No first generation pioneer dwellings as the one which was found on Krokodildrift 446JQ some year ago (Pistorius 2006) are known to exist on this farm.

8.3 Fieldwork survey

The Project Area at large is totally transformed as a result of the mining and beneficiating processes which are undertaken by Hernic and is mainly characterised by the presence of well-developed and expanded infrastructure.

Figures 4 & 5- The Project Area is totally transformed from pristine veld which made way for Hernic's mining and beneficiating infrastructure which was established over the past decades. Small patches with pristine bush still occur here and there (above and below).

8.4 Types and ranges of heritage resources

The Phase I HIA for Hernic revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the Project Area, namely:

- Two graveyards.

The graveyards were geo-referenced and mapped (Figure 6, Table 1). The significance of the graveyards and the significance of any impact on the graveyards are indicated (Tables 1 & 2). Mitigation measures are outlined for the graveyards that remain unaffected in the Project Area.

Figure 6- The Hernic Project Area. Note the presence of two graveyards in the Project Area (above).

8.4.1 The graveyards

8.4.1.1 Graveyard 01

This graveyard (GY01) is situated on the eastern shoulder of the Silkaatsnek road. It holds more than a hundred graves many of which are decorated.

Inscriptions on some of the headstones read as follow:

- ‘In loving memory of Segale Jacobus Thage Born 10-02-1916 Died 06-02-1988 Buried 13-02-1988 Gone but newer forgotten Forevever in our thoughts Rest in peace’.
- ‘In loving memory Johannes Nhlapho B 24-08-1971 D 10-11-1985 Rest in peace’
- ‘Hlati Jim Khumalo Born 1904 Died 1972 lalakahle baba Moses and his wife’

GY01 is older than sixty years. It is fenced-off from Hernic’s premises and is not fitted with an access gate allowing entrance from Hernic. GY01 is not maintained.

Figure 7- GY01 is located near the eastern shoulder of the Silkaats road and contains more than a hundred graves (above).

Figure 8- GY02 is situated in open veld and holds the remains of four individuals which are covered with piles of stone (above).

8.4.1.2 Graveyard 02

This graveyard (GY02) is located in open veld and holds four graves. All the graves are covered with piles of stone.

None of the graves are decorated and do not have any inscriptions. However, it is most likely that the graveyard is older than sixty years.

GY02 is demarcated with a fence.

8.5 Table

Graveyards	Coordinates	Significance
GY01. This graveyard holds more than 100 graves and is located on the eastern shoulder of the Silkaatsroad	25 39.811s 27 49.997e	HIGH

GY02. Four unmarked graves near hostel	25 39.564s 27 51.599e	HIGH

Table 1- Coordinates and significance rating for graveyards and graves in the Project Area (above).

9 THE SIGNIFICANCE, POSSIBLE IMPACT ON AND MITIGATION OF THE HERITAGE RESOURCES

9.1 The significance of the graveyards

The significance of the graveyards in the Project Area is indicated should any of these graveyards be affected by Hernic's operations.

All graveyards and graves can be considered to be of high significance and are protected by various laws (Table 1). Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds.

Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

9.2 Possible impact on the graveyards

The graveyards will not be affected by Hernic's operations.

9.3 The significance of the impact on the graveyards

The significance of any potential impacts on the graveyards was determined using a generic ranking scale which is used in most environmental and heritage impact assessment studies and which is based on the following:

- Occurrence
  - Probability of occurrence (how likely is it that the impact may/will occur?), and
  - Duration of occurrence (how long may/will it last?)
- Severity
  - Magnitude (severity) of impact (will the impact be of high, moderate or low severity?), and

- Scale/extent of impact (will the impact affect the national, regional or local environment, or only that of the site?)

Each of these factors has been assessed for each potential impact using the following ranking scales:

Probability: 5 – Definite/don't know 4 – Highly probable 3 – Medium probability 2 – Low probability 1 – Improbable 0 – None	Duration: 5 – Permanent 4 - Long-term (ceases with the operational life) 3 - Medium-term (5-15 years) 2 - Short-term (0-5 years) 1 – Immediate
Scale: 5 – International 4 – National 3 – Regional 2 – Local 1 – Site only 0 – None	Magnitude: 10 - Very high/don't know 8 – High 6 – Moderate 4 – Low 2 – Minor

The significance of each potential impact was assessed using the following formula:

Significance Points (SP) = (Magnitude + Duration + Scale) x Probability

The maximum value is 100 Significance Points (SP). Potential impacts are rated as very high, high, moderate, low or very low significance on the following basis:

- More than 80 significance points indicates VERY HIGH environmental significance.
- Between 60 and 80 significance points indicates HIGH environmental significance.
- Between 40 and 60 significance points indicates MODERATE environmental significance.

- Between 20 and 40 significance points indicates LOW environmental significance.
- Less than 20 significance points indicates VERY LOW environmental significance.

The significance of the impact on the graveyards is very low (Table 2).

Table 2- The significance of impact on the graveyards is very low.

Possible graveyards							
	Probability of impact	**Magnitude of impact**	**Duration of impact**	**Scale**	**Significance points**	**Significance of impact**	**Significance after mitigation**
GY01	**1**	**10**	**5**	**1**	**16**	**Very low**	**Not applicable**
GY02	**1**	**10**	**5**	**1**	**16**	**Very low**	**Not applicable**

9.4 Mitigating the impact on the graveyards

No impact will occur on the graveyards. Consequently, the graveyards require no mitigation measures.

However, the following management measures should be implemented in order to ensure that the graveyards remain unaffected during Hernic's operation and eventual closure, namely:

- The graveyards must be demarcated with fences or with walls and must be fitted with access gates.
- Regulated visitor hours should be implemented that is compatible with mine safety rules. This will not be necessary if the graveyards are located next to the national or a public road which provides direct access to the graveyards.
- Corridors of at least 20m should be maintained between the graveyard's fence and any developmental components such as infrastructure or roads that may be developed in the future.
- The graveyards should be inspected every three months. Inspections should be noted in an inspection register. The register should outline the state of the graveyards during each inspection. Reports on damages to any of the graves or to the graveyard (fence, walls, gates) should be followed with the

necessary maintenance work. Maintenance work should be recorded in the inspection register.

- Graveyards should be kept tidy from any invader weeds and any other refuse.

10 CONCLUSION AND RECOMMENDATIONS

The Phase I HIA for Hernic revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the Project Area, namely:

- Two graveyards.

The graveyards were geo-referenced and mapped (Figure 6, Table 1). The significance of the graveyards and the significance of any impact on the graveyards are indicated (Table 1 & 2). Mitigation measures are outlined for the graveyards that remain unaffected in the Project Area.

The significance of the graveyards

The significance of the graveyards in the Project Area is indicated should any of these graveyards be affected by Hernic's operations.

All graveyards and graves can be considered to be of high significance and are protected by various laws (Table 1). Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds.

Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

Possible impact on the graveyards

The graveyards will not be affected by Hernic's operations.

The significance of the impact on the graveyards

The significance of any potential impacts on the graveyards was determined using a generic ranking scale which is used in most environmental and heritage impact assessment studies and which is based various criteria.

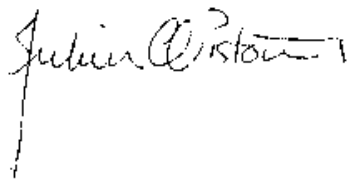
The significance of the impact on the graveyards is very low (Table 2).

Mitigating the impact on the graveyards

No impact will occur on the graveyards. Consequently, the graveyards require no mitigation measures.

However, the following management measures should be implemented in order to ensure that the graveyards remain unaffected during Hernic's operation and eventual closure, namely:

- The graveyards must be demarcated with fences or with walls and must be fitted with access gates.
- Regulated visitor hours should be implemented that is compatible with mine safety rules. This will not be necessary if the graveyards are located next to the national or a public road which provides direct access to the graveyards.
- Corridors of at least 20m should be maintained between the graveyard's fence and any developmental components such as infrastructure or roads that may be developed in the future.
- The graveyards should be inspected every three months. Inspections should be noted in an inspection register. The register should outline the state of the graveyards during each inspection. Reports on damages to any of the graves or to the graveyard (fence, walls, gates) should be followed with the necessary maintenance work. Maintenance work should be recorded in the inspection register.
- Graveyards should be kept tidy from any invader weeds and any other refuse.



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