

**PHASE 1 HERITAGE STUDY FOR THE PROPOSED IRON, TITANIUM AND
VANADIUM MINE ON PORTION 1, 2, 3, 4, 5, 6 AND REMAINING EXTENT OF THE
FARM STEELPOORTDRIFT 365 KT**



Commissioned by

VANADIUM RESOURCES (PTY) LTD

Compiled for

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1. EXECUTIVE SUMMARY

Background

Zen Environmental Consultants was commissioned by Jomela Consulting (Pty) Ltd to conduct an Archaeological and Heritage Impact Assessment (AIA/HIA) studies for the proposed Vanadium Resources project within Greater Tubatse Local Municipality in the Limpopo Province. This report is a Phase 1 impact study on potential archaeological and cultural heritage resources associated with the proposed development.

Method Statement

The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed project. This study was conducted as part of the specialist input to the Environmental Impact Assessment process. The study and this report follow the South African Heritage Resources Agency (SAHRA) Guidelines for phase 1 AIA/HIA.

Nature of Proposed Development

The proposed Vanadium Resources project within Greater Tubatse Local Municipality, in Limpopo Province is an undertaking of open cast mining activities on Portion 1, 2, 3, 4, 5, 6 And Remaining Extent Of The Farm Steelpoortdrift 365 KT in Ga-Malekana near Steelpoort, Limpopo.

Vanadium Resources (Pty) Ltd applied for a Mining Right in terms of section 22 of the MPRDA to mine Iron, Titanium and Vanadium and, which application was accepted on 02 December 2014. The proposed mine life is approximately 10 years.

The area required for mining is approximately 2456.5752 hectares whereas the area required for infrastructure, roads, servitudes, etc. is less than or equal to 20 hectares. During the late 1990s Vantech negotiated with the local and government authorities, then moved and compensated house owners located above the Upper and Lower Magnetite Units and the future opencast area so as not to sterilize this deposit for future mining.

A prospecting right for vanadium over the farm Steelpoortdrift 365 KT is held by Vanadium Resources (Pty) Ltd (formerly Veriprop (Pty) Ltd) under reference number LP 972 PR (Registered under prospecting permit No 1036/2007PR). The licence expired on 30 August 2010. Application for renewal was approved by the Minister and the licence has been renewed for a further period of three years. In addition to the aforesaid Prospecting Right, Vanadium Resources (Pty) Ltd was also granted under Section 102 on 08 August 2012 the prospecting rights on the same farm for the minerals titanium and iron. On December 2014, VanRes was granted a Mining Right, the HIA study forms part of the EIA authorization process to assess the suitability of the area prior to commencement of mining activity.

Project Area

Vanadium Resources Project is situated within the Greater Tubatse Local Municipality (GTLM) in Limpopo Province, which is one of the five local municipalities falling under the Sekhukhune District Municipality (SDM). It borders the Thaba Chweu Local Municipality (TCLM), which is one of the five municipalities falling under the jurisdiction of the Ehlanzeni District Municipality (EDM). Geographically, the GTLM and the TCLM cover areas of 4 602 km² and 5 680 km² respectively (Statistics South Africa (StatsSA), 2011).

The farm Steelpoort 365 KT is located some 30 km south-west of the town of Steelpoort (refer to Figure 1: Locality map). A tarred road runs more or less parallel to the western boundary of the farm, and to the south the farm is separated from the R555 main road from Middelburg to Steelpoort by the Steelpoort River.

The Heritage Impact Assessment Process

This HIA study report is segmented into four sections as follows:

- Executive Summary,
- Project Background,
- HIA on the Project Receiving Cultural Landscape project area in line with the NHRA (*Act 25 Section 38*), and
- Heritage Management Recommendations for immediate project receiving area covering the development, operation to closure phases of the project.

The impact assessment study also includes detailed recommendations on how to mitigate and manage potential negative impacts of the proposed development while enhancing positive effects on the project area.

The Legal Framework and Guidelines

This HIA study is a specialist study to the EIA process and it is guided by the:

- National Heritage Resources Act, (*Section 38 of Act 25 of 1999*)
- SAHRA AMP HIA Guideline
- Terms of Reference provided to Zen Environmental Consultants (*2014*).

All South African heritage assets are protected by the National Heritage Resources Act of 1999, which makes it an offence to destroy heritage resources without permission from the relevant authority. In terms of the provisions of the NHRA Act of 1999, individual sites within the project area enjoy the varying levels of protection.

Results of the Study

During the assessment the layout of the proposed project was unavailable, therefore a baseline study assessing the heritage and cultural aspect of the area in relation to the project site were evaluated. The analysis of the archaeological, cultural heritage, environmental and historic contexts of the study area shows that archaeological sites (Stone Age and Historic Archaeological), cultural heritage sites, burial grounds or isolated artefacts were likely to be present on the affected landscape. The field survey was conducted to test this hypothesis and verify this prediction within the proposed mining project and associated infrastructure servitude. The project receiving areas are situated on previously disturbed land parcels. As such, the proposed development will be an in situ development that will be contained within existing developments. The project area is active with multiple contemporary uses. The most common contemporary class of cultural resource found are several grave and burial sites dotted within the proposed project area.

Recommendations

The project footprint area was assessed and rated as having medium to high cultural heritage significance. The following recommendations are made in this report:

- 1) Burial grounds and grave sites were recorded within the proposed mining area. The observed burial site is located at the foot of the eastern dome and is separated from the community by Shakwaneng River which runs from west to east of the proposed mining boundary to join Steelpoort River. The recorded burial site is also separated from the western dome by donga erosion. With the aforementioned observations in mind, the developer must plan carefully to avoid affecting the recorded burials.
- 2) Furthermore a monitoring plan should be developed and a professional archaeologist should be retained to monitor the activities during the construction phase. Thus far, the proponent is in liaison with the representatives of the affected communities it is recommended that when the final layout of the proposed mine is available further communication should be

done to determine the potential impact the mine will have with regards to the observed burial area and way forward should they be affected.

- 3) Monitoring is recommended during construction phase because there is high potential of encountering heritage sites including graves concealed by thick vegetation cover.
- 4) Overall, impacts to heritage resources are not considered to be adverse to warrant abandonment of the proposed project. It is thus concluded that the project may be cleared to proceed as planned subject to the Heritage Authority ensuring that a detailed heritage monitoring procedures are included in the project EMP for the construction phase. These should include chance archaeological finds mitigation procedure in the project EMP specifically to cover subsurface construction activities.
 - The chance finds process will be implemented when necessary especially when archaeological materials and burials are encountered during subsurface construction activities.
 - If archaeological materials are uncovered, work should cease immediately and the Limpopo Provincial Heritage Authority (LIHRA) or SAHRA be notified and activity should not resume until appropriate management provisions are in place.
- 5) In the event that previously unknown human remains are accidentally uncovered during development, then work on affected section and the immediate vicinity should be halted and the finds protected and reported to LIHRA.
- 6) The findings of this report, with approval of the LIHRA, may be classified as accessible to any interested and affected parties within the limits of the laws.

2. ACRONYMS

AIA	Archaeological Impact Assessment
APPA	Atmospheric Pollution Prevention Act 45 of 1965
BID	Background Information Document
C	Contractor
CARA	Conservation of Agricultural Resources Act, 1983 (Act No 43
CECO	Construction Environmental Conservation Officer
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DSR	Draft Scoping Report
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
ECA	Environmental Conservation Act
ECO	Environmental Conservation Officer
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EM	Environmental Manager
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
EMPR	Environmental Management Programme Report
EMS	Environmental Management System
GN	General Notice
GNR	General Notice Regulation
Ha	Hectares
HIA	Heritage Impact Assessment
HMP	Heritage Management Plan
I&AP's	Interested and Affected Parties
IDP	Integrated Development Plan
IRR	Issues and Responses Report
LEDET	Limpopo Department of Economic Development,
LIA	Late Iron Age
LFC	Late Farming Community
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NHRA	Nation Heritage Resources Act, Act 25 of 1999
SAHRA	South African Heritage Resources Agency

SM Site Manager
ToR Terms of Reference

3. DEFINITIONS

The following terms used in this Archaeological /Heritage Impact Assessment are defined in the

National Heritage Resources Act [NHRA], Act Nr. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter (*Burra Charter*):

Archaeological Material remains resulting from human activities, 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.

Chance Finds means Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Compatible use means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Cultural Heritage Resources Same as **Heritage Resources** as defined and used in the National Heritage Resources Act (*Act No. 25 of 1999*). Refer to physical cultural properties such as archaeological and paleontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or graves and their associated materials; geological or natural features of cultural importance or scientific significance. This also include **intangible resources** such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Cultural Significance also encompasses the complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

Environment The surroundings within which humans exist and that are made up of: **(i)** the land, water and atmosphere of the earth ;**(ii)**. Micro-organisms, plant and animal life; **(iii)** Any part or combination of (i) and (ii) and the interrelationships among and between them; and, **(iv)** The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being. This includes the economic, social, cultural, historical and political circumstances, conditions and objects that affect the existence and development of an individual, organism or group.

Environmental impact assessment An Environmental Impact Assessment (EIA) refers to the process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the environment. The EIA includes an evaluation of alternatives. As well as recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and environmental management and monitoring measures.

Expansion means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

Fabric means all the physical material of the place including components, fixtures, contents and objects.

Grave A place of interment (*variably referred to as burial*), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery (*contemporary*) or **Burial Ground** (*historic*).

Heritage impact assessment (HIA) refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. The HIA includes recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Historic Material remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

Impact The positive or negative effects on human well-being and / or on the environment.

In Situ material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Interested and affected parties Individuals, communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Interpretation means all the ways of presenting the cultural significance of a place.

Late Iron Age this period is associated with the development of complex societies and state systems in southern Africa.

Material culture means buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Mitigate The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

Place means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Protected area means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers;

Public participation process a process of involving the public in order to identify issues and concerns, and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters

Setting means the area around a place, which may include the visual catchment.

Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (*i.e. intensity, duration and likelihood*). Impact significance is the value placed on the change by different affected parties (*i.e. level of significance and acceptability*). It is an anthropocentric concept, which makes use of value judgments and science based criteria (*i.e. biophysical, physical cultural, social and economic*).

Site A distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Use means the functions of a place, as well as the activities and practices that may occur at the place.

4. INTRODUCTION

Background

Jomela Consulting (Pty) Ltd commissioned Zen Environmental Consultants to conduct an Archaeological and Heritage Impact Assessment (AIA/HIA) study of the areas that will be affected by the proposed Vanadium Resources development. This report focuses on the Vanadium Resources development and associated infrastructure within the Greater Tubatse Local Municipality area in Limpopo Province. The AIA and HIA study reports for evaluation by the LIHRA/SAHRA heritage authorities. This report outlines the desktop study, review of previous heritage assessment studies in the general area, field study and present results of the study as well as discussion on the anticipated impacts of the proposed development as is required by the National Heritage Resources Act, (Act 25 of 1999) Section 38. The study focuses on identifying and assessing potential impacts on archaeological, as well as on other physical cultural properties including historical heritage and intangible resources in relation to the proposed mining development.

The study was designed to ensure that any significant cultural, physical property or sites and related intangible heritage resources are located and recorded, and site significance is evaluated to assess the nature and extent of expected impacts from the proposed development. The assessment includes recommendations to manage the expected impact of the development site to guide heritage authorities in making appropriate decision with regards to Heritage Management Planning.

The assessment; research and consultations required for the preparation of this report is in a manner consistent with its obligations set in the NHRA as well as the environmental management legislations. In line with SAHRA guidelines, this section of the report, not necessarily in that order, provides:

- Management summary;
- Methodology;
- Information with reference to the desktop study;
- Map and relevant geodetic images and data;
- GPS co-ordinates;
- Site description and interpretation of the cultural area where the project will take place;
- Management details, description of affected cultural environment, photographic records of the project area;
- Recommendations regarding the significance of the site and recommendations regarding further monitoring of the site; and
- Conclusion.

Nature of the proposed development

Vanadium Resources (Pty) Ltd applied for a Mining Right in terms of section 22 of the MPRDA to mine Iron, Titanium and Vanadium and, which application was accepted on 02 December 2014. The proposed mine will be an opencast mine with a life of approximately 10 years.

The area required for mining is approximately 2456.5752 hectares whereas the area required for infrastructure, roads, servitudes, etc. is less than or equal to 20 hectares. During the late 1990s Vantech negotiated with the local and government authorities, then moved and compensated house owners located above the Upper and Lower Magnetite Units and the future opencast area so as to sterilize this deposit for future mining.

5. STATUTORY REQUIREMENTS

This HIA report is a component of a broader EIA Study and addresses the requirements of the NHRA Act 25 of 1999 Section 38 and EIA Terms of Reference in relation to the assessment of impacts of the proposed development on the cultural and heritage resources associated with the receiving environment.

The legislations requires that when developing an area exceeding 5000 m² in extent, the developer must notify the responsible heritage authority of the proposed development and they in turn must indicate whether an impact assessment is required. The NHR Act notes that –any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent, the heritage authority here being the Limpopo Provincial Heritage Authority (LHRA).

The statutory mandate of heritage impact assessment studies is to encourage and facilitate the protection and conservation of archaeological and cultural heritage sites, in accordance with the provisions of the National Heritage Resources Act, Act 25 of 1999 and auxiliary regulations. The National Heritage Resources Act (NHRA) No. 25 of 1999 protects all defined heritage resources including paleontological, prehistoric and historical material (including ruin) more than 100 years old (*under Section 35*), human remains older than 60 years and located outside of a formal cemetery administered by a local authority (*under Section 36*) and non-ruined structures older than 60 years (*under Section 34*). A broader protection is also offered to landscapes with cultural significance, which are also protected under the definition of the National Estate (*Section 3 [3.2d]*).

Specific to this study, Section 38 (2a) emphasises that if there is reason to believe that heritage resources will be affected by any proposal to change the status quo, and then an impact assessment report must be submitted. This study is therefore conducted in pursuit of this requirement. Given the fact that this study is subjected to the issue for EIA and EMP authorisations, the heritage authorities are required to provide comments on the proposed project.

6. HIA STUDY TERMS OF REFERENCE

This HIA study was commissioned under the guidance of the requirements of Section 38(3) of the NHRA. As outlined in the introduction section, the activities would include:

- 6.1. Hypothesising and conducting a detailed desk-top level investigation to identify all archaeological, cultural and historic sites in the proposed mining area project receiving areas;
- 6.2. Conduct appropriate physical cultural properties field work and survey to verify results of desktop investigation;
- 6.3. During the field survey, document (*GPS coordinates and map*) all archaeological and heritage sites, objects and structures and physical cultural properties identified within the project's receiving environment;
- 6.4. Compile a Heritage Impact Assessment report which would include:
 - Identification of archaeological, cultural and historic sites within the affected development areas;
 - Assess the sensitivity and significance of archaeological remains within the affected development areas;
 - Estimation and evaluation of the potential impacts of the proposed construction, operation and maintenance of the proposed development on archaeological, cultural and historic sites in the proposed project receiving areas;
 - Measure the impacts in terms of the scale of impact

- Provide appropriate Recommendation of mitigation measures that may add positive impacts while reducing the identified negative impacts on archaeological, cultural and historic sites in the proposed project receiving areas;
- The recommendations should be applicable enough to effectively guide the compliance authorities in issuing a decision regarding the authorisation of the proposed development.
- Consideration of relevant PHRA and SAHRA as well and international best practices guidelines; and,
- Development Heritage Management planning guideline: Guideline for involving heritage stakeholders in the processes.

In essence, both the national heritage and environmental legislations provide protection for the following categories of heritage resources:

- Landscapes, cultural or natural; buildings or structures older than 60 years;
- Archaeological Sites, paleontological material and meteorites; burial grounds and graves; public monuments and memorials;
- Living heritage (defined as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships).

7. LOCATION OF ACTIVITY AREA AND IMPACT AREA

Vanadium Resources Project is situated within the Greater Tubatse Local Municipality in the Limpopo Province. The farm Steelpoort 365 KT is located some 30 km south-west of the town of Steelpoort (refer to Figure 2: Study area-view from **the western dome**). A tarred road runs more or less parallel to the western boundary of the farm, and to the south the farm is separated from the R555 main road from Steelpoort to Middelburg by the Steelpoort River. Scattered low-density housing is present across most of the property, with particular concentrations in the south-west Dr Eiselen dam on the Shakwaneng River is immediately north-west of the project area.

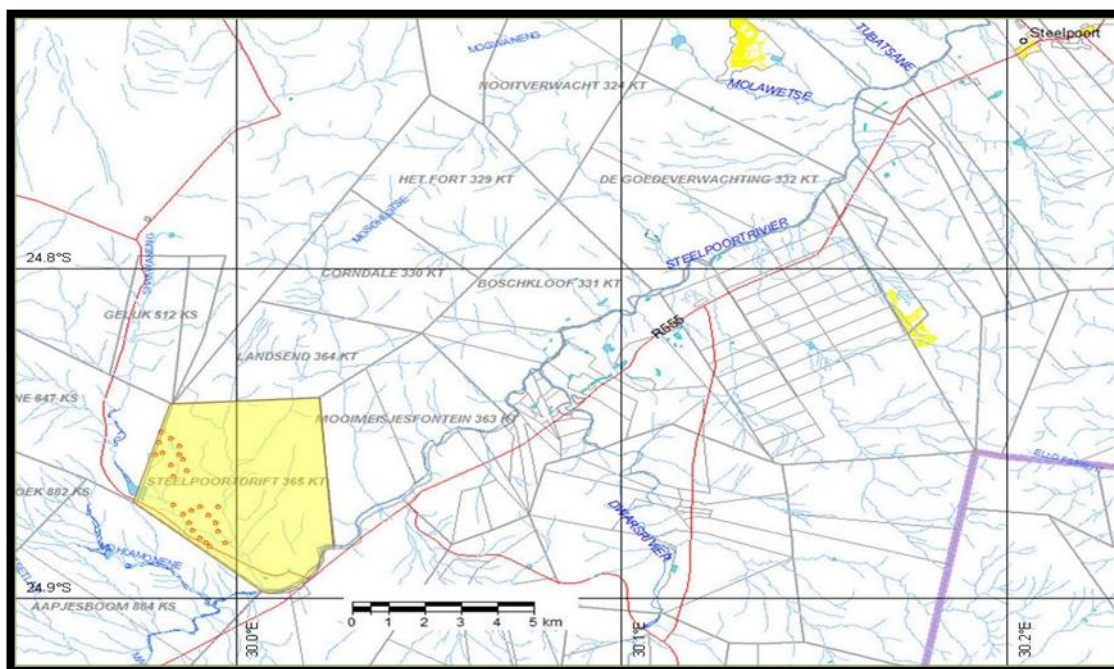


Figure 1: Proposed project locality (Image ©Jomela Consulting).



Figure 2: Study area-view from the western dome.



Figure 3: The eastern dome within the proposed locality.

8. METHODOLOGY

The proposed project development requires clearance and authorisation from government compliance agencies including the heritage authority of LHRA and or SAHRA. Key HIA objectives for this section of the study are to fulfil the statutory requirements of the National Heritage Resources Act, Act 25 of 1999. The following tasks were undertaken:

- Preparation of a predictive model for archaeological heritage resources in the study area.
- A review and gap analysis of archaeological, historical and cultural background information, including possible previous heritage consultant reports specific to the affected project area, the context of the study area and previous land use history as well as a site search;

- Field survey of the Vanadium Resources project area;
- Physical cultural property recording of any identified sites or cultural heritage places;
- Identification of heritage significance; and
- Preparation of HIA report with recommendation, planning constraints and opportunities associated with the proposed development.

The project area is part of an existing and previously developed and disturbed landscape with access roads servitudes; mining infrastructure, farm and rural settlements, informal settlements and other auxiliary infrastructures dominate the affected project area.

Geographic coordinates were obtained with a handheld Montana 650 Garmin GPS global positioning unit. Photographs were taken as part of the documentation process during field study.

9. STUDY ASSUMPTION AND LIMITATIONS

- The field survey did not include any form of subsurface inspection beyond the inspection of burrows, road cut sections, and the sections exposed by erosion or earth moving disturbances.
- Assumptions were made as part of the study and therefore some limitations, uncertainties and gaps in information would apply. It should however, be noted that these do not invalidate the findings of this study in any significant way:
- The proposed Vanadium Resources project does not as yet have a finalised and detailed mining development layout.
- No excavations or sampling was undertaken, since a permit from heritage authorities is required to disturb a heritage resource. As such the results herein discussed are based on surface indicators. However, these surface observations concentrated on areas accessible.
- No Paleontological study was conducted as part of this HIA.
- This study did not include any ethnographic and oral interviews. The existing studies from current and historic researches are accepted as adequate for the purposes of this HIA.

10. FINDINGS

Consultation

No independent community consultation was conducted during this phase of the A/HIA study. However, the EIA Public Participation Process will invite comments from affected communities and other interested parties on any matter related to the proposed Vanadium Resources project development including heritage concerns that may arise as a result of the proposed development. At present, liaison between the proponent and the community representatives has taken effect as to introduce and explain the proposed activity

Brief cultural history of the project area

The project area is located in the Ga-Malekana near Steelpoort within Greater Tubatse Local Municipality in Limpopo Province, South Africa. Cultural significance in the area plays a major role starting with the naming of the villages within the project locality. This highlights the importance of authority in the form of chieftaincy that governed different traditional divisions of the Ba-Pedi culture. Therefore, the area boasts a rich traditional history of contemporary Northern Sotho (Huffman 2007, Coetzee 2010).

Archaeological and heritages studies in the Limpopo region indicate that the area is of high pre-historic and heritage significance. It is in fact a cultural landscape where Stone Age, Iron Age and Historical period sites contribute the bulk of the cultural heritage of the region (also Calebrese 1996; Huffman, 2007; Murimbika, 2006; Schoeman, 2006; Meyer, 2000; van Doornum, 2008).

Stone Age sites are general identifiable by stone artefacts found scattered on the ground surface, as deposits in caves and rock shelters as well as in eroded gully or river sections. No archaeological sites were recorded in the project site. However, the study region is known of the existence of Stone Age sites that conform to the generic SA periodization split into the Early Stone Age (ESA) (2.5 million years ago to 250 000 years ago), the Middle Stone Age (MSA) (250 000 years ago to 22 000 years ago) and the Late Stone Age (LSA) (22 000 years ago to 300 years ago). Stone Age sites in the region are also associated with rock painting sites.

From an archaeological perspective, the Steelpoort area, like most of Limpopo region has potential to yield Stone Age period sites (also see Deacon and Deacon, 1997). However, the specific affected project-receiving area environment has low potential for Stone Age sites.

The Iron Age of the Limpopo region dates back to the 5th Century AD when the Early Iron Age proto-Bantu-speaking farming communities began arriving in this region, which was then occupied by hunter-gatherers. These communities are archaeologically referred to as the Kwale branch of the Urewe Early Iron Age Tradition (Huffman, 2007: 127-9). The Iron Age communities occupied the foot-hills and valley lands introducing settled life, domesticated livestock, crop production and the use of iron (also see Maggs 1984a; 1984b; Huffman 2007). Alongside the Urewe Tradition was the Kalundu Tradition whose Early Iron Age archaeological sites have been recorded along the Limpopo region. Limpopo region is known for the famous golden rhino that was recovered from Iron Age settlement site of Mapungubwe in the Limpopo Shashi Valley, now a UNESCO World Heritage Site. The Limpopo region is also known for the Zimbabwe tradition sites such as Thulamela and Dzata to the northeast, in the modern day Venda region. From about 15 00 AD the region was occupied by new coming groups of Late Iron Age farmers of the Kalundu Tradition (*ibid*). The region was the centre of immigration and migration of different African groups some of which are ancestors of the contemporary Sotho and Tsonga predominant in the region.

The period c. A.D 950 – 1350 AD was dominated by ceramics that were derived from the preceding Early Iron Age and which have been called the Eiland (Evers 1981) or Heringbone pottery (Denbow 1983). At Eiland itself there is an apparent gap between this final phase of the Early Iron Age and Letaba. Available radiocarbon dates to Letaba ceramics range from the early 17th – 19th centuries (Evers 1981). There were two unrelated ceramic styles in the 12th (Eiland) and 19th century (Letaba). Earlier groups comprised two ceramic styles that are Moloko and Kgopolwe. Moloko and Kgopolwe are contemporary with general similarities to Eiland which is the third development of the Western Stream Early Iron Age immigrants. Mason (1962) conducted extensive research in the Lydenburg-Steelpoort area. He recorded concentrations of remains of stone walled settlements attributed to the Koni and the Pedi. These stonewalled settlements comprise of three basic units namely, homesteads, terraces and cattle kraals. Ndzundza capitals in the Steelpoort area such as KwaMaza have a Moor park variant of stonewalling. The ceramic remains in the area mainly comprise of Marateng Pottery. According to oral tradition the Koni settled in the escarpment before the Pedi between 1600AD and 1650AD.

Throughout the middle of the 1800s the region witnessed the mfecane migrations and displacements linked to groups such as the Ndebele of Mzilikazi. In 1826 Mzilikazi devastated the Koni communities in the Sekhukhune area. The Pedi recovered under Sekwati. Sekwati was however assassinated by his half-brother Mampuru in 1882. He was succeeded by his son Sekhukhune reunited the Pedi under his chieftaincy. From the 1840s the Voortrekker began arriving in the flat lands foothills in the regions spreading north east into modern day Limpopo. They spread establishing settlements, which came to be settler towns such as Schoemansdale, Petersburg, and the Louis Trichardt across modern day Limpopo. The Voortrekkers arrived in Limpopo regions in the shadow of the weakened African

kingdoms and chiefdoms in the aftermath of the mfecane. This effectively ushered in new era of colonial occupation by succeeding Afrikaans and British colonial administration authorities through the last half of the 1800s and into the last 1900s.

By 1850s the region witnessed the influx of more settler communities which triggered settler wars between the African chiefdoms and the incoming Afrikaner settlers. Some of these colonial wars and battles lasted into Anglo-Boer wars of 1899-1902. The later effectively led to complete subjugation of African communities to settler administration starting as part of the ZAR of Transvaal. There after the region was subsequently annexed by the British and effectively placed the majority of African communities under the Union of South Africa in 1910, which eventually ended with the establishment of the new South Africa in 1994.

Archaeological and heritage assessment study

The study involved covering the proposed mining area, which is located on the farm Steelpoort 365 KT which is located some 30 km south-west of the town of Steelpoort in the area of Greater Tubatse Municipality in Limpopo Province

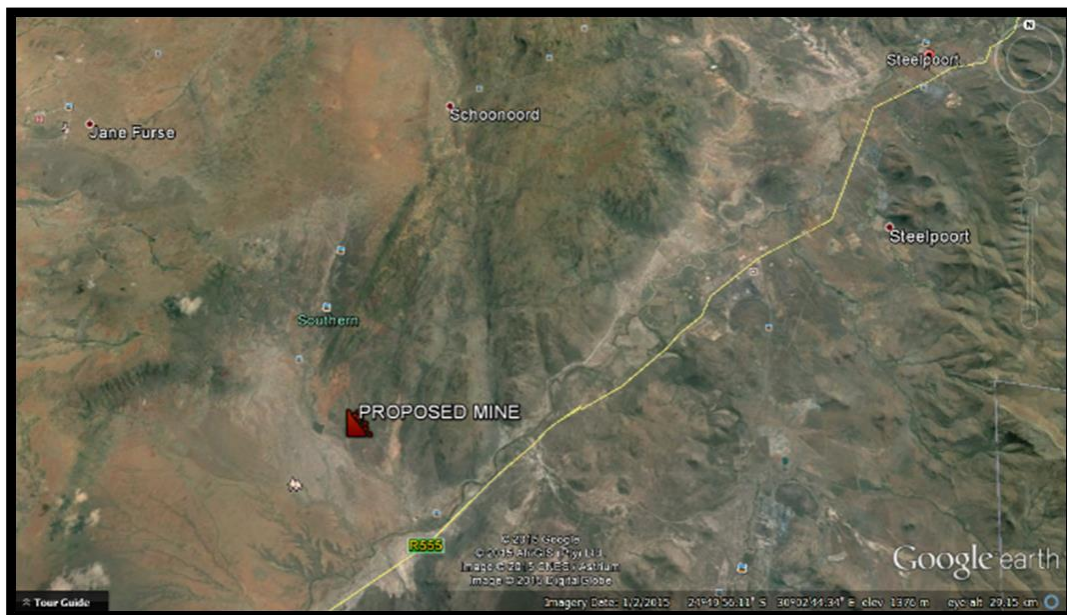


Figure 4: Study locality and surrounding towns (Image ©Google Earth).

Observed within the study area is a modern age burial site or cemetery located at the foot of the eastern dome within the study site. The burial site is separated from the western dome by the donga erosion and from the Ga-Malekana village by the Shakwaneng River which runs from west to east of the boundary to join Steelpoort River. Within the burial site there are more than 50 graves which 30 have headstones, small portion (about 14) of the graves observed have no sign of recognition but are visible and the rest were identified based on the personal items such as metal plates, cups or cutlery put on the grave site as part of ritual belief.

The grave site visibility is screened by the occurrence of vegetation such as grass, trees and shrubs of which some of the trees such as *Boscia albitrunca* which is national protected by the National Forestry Act.

The observed graves within the study site are considered of high significance in terms of the HIA study.



Figure 5: Burial area at the foot of the eastern dome within the study site (N.B. Photo taken from the western dome view).



Figure 6: The observed burial site visibility was screened by vegetation.

Within the study site, an abandoned residential infrastructure was observed at the edge of the western dome near dam. This structure is of modern building material therefore it was considered a low significance with regards to the study.



Figure 7: The abandoned residential infrastructure at the edge of the western dome.

Furthermore, during the HIA study it was observed that the western dome where most prospecting poles are scattered is very rocky with protruding boulders and an unlikely place to use for burial but in terms of artefacts the possibilities are high. However, no artefacts were observed during the study.



Figure 8: Observation of the western dome.

11. HERITAGE IMPACT ASSESSMENT

Environmental impacts are measured against the value of a heritage resources and how that value may change due to an environmental aspect. The significance of change to a heritage resource due to environmental impacts is based on impact significance, proposed project magnitude and consequence which can be broken down as if the value of the heritage resource is low, and the magnitude is high, the impact significance rating will be low whereas if the value of the heritage resources is high, and the magnitude is low, the impact significance rating will be high as well. This indicates it is the change to the value of the heritage resource that is assessed rather than the activity aspect.

. **Statement of Significance**

Aesthetic Value

The aesthetic values of the Vanadium Resources HIA Study Area (proposed mine overall project area) are contained in the valley bushveld environment and landscape typical of this part of the Limpopo Province. The visual and physical relationship between HIA study area and the surrounding cultural Landscape demonstrates the connection of place to the local and oral historical stories of the African communities who populated this region going back into prehistory.

The proposed Vanadium Resources area will be situated within an environment and associated cultural landscape, which, although developed by existing settlements, remains representative of the original historical environment and cultural landscape of this part of Limpopo Region. The local communities consider the project area as a cultural landscape linked to their ancestors and history. However, the proposed developments will not alter this aesthetic value in any radical way since it will add to the constantly changing and developing settlements (Table below).

Table 1: Assessment of impacts to Aesthetic Values related to the scenic routes and sense of place

	Before Mitigation	After Mitigation
Magnitude	Low	NA
Extent Local -	Local	NA
Duration Long term -	Long term	NA
Significance	Low -	NA
Probability	Definite -	NA
Status	Negative -	NA
Reversible	Yes (with rehabilitation and decommissioning)	
Cumulative	A number of residential and agricultural facilities planned for the area that may lead to cumulative visual impacts to the landscape if they were to be constructed. This may be of concern and will detract from peoples' experience of the general regional sense of place.	

Historic Value

There are no such historic relics on the site affected with development; however, such history goes back to the pre-colonial period, through the colonial era, the colonial wars and subsequent colonial rule up to modern day Limpopo Province.

Table 2: Assessment of impacts to Historic Values related to the project area.

	Before Mitigation	After Mitigation
Magnitude	Low	Low
Extent Local -	Specific Site	Specific Site
Duration Long term -	Long term	Long term
Significance	Low -	Low -
Probability	Definite -	Probable
Status	Negative -	Negative -
Reversible	Yes (with rehabilitation and decommissioning)	

Cumulative	No historic or historic archaeology sites will be affected by this development. However, there are similar developments within the region that may be affected highly significant sites, which will lead to permanent loss of physical cultural property record of the region.
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Scientific value

Past settlements and associated roads, and other auxiliary infrastructure developments and disturbance within the HIA study area associated with the proposed mining development have resulted in limited intact significant cultural landscapes with the potential to retain intact large scale or highly significant open archaeological site deposits. However, should intact archaeological sites be recorded within the proposed mining area and immediate surrounding areas, they may retain scientific evidence that may add value to the local and regional history.

Table 3: Assessment of impacts to Archaeological Scientific Values related to the project area.

	Before Mitigation	After Mitigation
Magnitude	Low	NA
Extent Local -	Specific Site	NA
Duration Long term -	Long term	NA
Significance	Low -	NA
Probability	Definite	NA
Status	Negative	NA
Reversible	Yes (with rehabilitation after plant is decommissioned)	NA

Cumulative
The archaeological resources falling within the project area are not significant since they do not constitute distinct sites. Since no significant pre-colonial resources occur, cumulative impacts are thus not of concern on this site. There are other significant archaeological sites in the region that may be protected for archaeological and scientific reasons.

Social Value

The Vanadium Resources project site falls within a larger and an extensive Limpopo cultural landscape. The overall area has social value for the local community, as is the case with any populated landscape. The land provides the canvas upon which daily socio-cultural activities are painted. All these factors put together confirm the social significance of the project area. However, this social significance is not going to be negatively impacted by the proposed mining development especially given the fact that the development will add value to the human settlements and activities already taking place. In addition the area is already affected by development and this project is an addition to already existing infrastructure such as roads, and agricultural fields and residential developments.

Some sections within the project area are covered in thick vegetation. Vegetation retains social value as sources of important herbs and traditional medicines as such, they must be considered as medium significant social value sites.

Table 4 shows the impact assessment of the observed heritage and cultural sites within the proposed project site with regards to the proposed mine.

Table 4: Impact assessment of the heritage aspects observed in relation to the proposed project.

Site	Coordinates	Importance and credibility	Statement of Value	Integrity	Field Rating	Impact	Post Mitigation
Grave site	S: 24°52'01.57" : E: 29°58'50.00"	Located on western foot or edge of the eastern dome. The burial ground may have a strong association to the community or cultural group for social, cultural and spiritual reasons. The observed burial site is in good condition and is well-preserved.	The burial is of high heritage value due to the high social importance.	The site is fairly preserved with little degradation present, and can be easily restored.	The site is generally protected and this falls under the responsibility of the local municipality and/ or Provincial Heritage Resource Agency (PHRA).	Negative	Positive as the development will preserve the burial in situ.
Abandoned dwelling site	S: 24°51'53.82" : E: 29°58'33.11"	Located at the edge of the western dome near the dam. The site covers approximately 300 square meters. This site is made of modern building material and it was left at a foundation stage.	The site is of low significance.	Abandoned	Not protected	n/a	n/a

Assessed dome	western	S: 24°51'54.54" : E: 29°58'41.22"	<p>Located west of the study site, the area has a rock terrain with protruding boulders. Although it is unlikely to be used as a burial site due to its rock structure it was assessed for the possibility of artefacts occurrence. No artefacts were observed within the site. However, mountains play an important role in religion</p>	<p>Mountains or hills play an important role in religious aspects of the surrounding communities. Due to westernization, their use as a religion place has been minimized by the use of churches; however the site is likely to have a medium significance due to the Zionist religion which is highly practised in the study location.</p>	low	Protected by Heritage Act	Negative	Negative
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12. RECOMMENDED MITIGATION MEASURES

Recommendations for the project include the following:

- Fencing off of the grave site
- Adhere to a 50m buffer zone from the burial site. The buffer should be measured from the fence area
- Compile a Heritage Site Management Plan (HSMP) is recommended. However if the proposed infrastructure plan changes, relocation of the grave may be necessary.
- If relocation is necessary, a Burial Grounds and Grave Census (BGGC) is recommended to identifying bona fide stakeholders and descendants who will be consulted with regards to the pending grave relocation.
- A Heritage Watching Brief is recommended for the construction phase when ground clearance commences. This task includes the presence of a qualified archaeologist to identify and assess any heritage resources that may be uncovered during ground clearance.
- Should chance archaeological materials or human burials remains be exposed during subsurface construction work on any section of the mining development laydown sites, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the PHRA and NHRA regulations.

13. CONCLUSION

A total of three heritage resources were identified during the pedestrian survey. These lies within the proposed project boundary and may be impacted upon. One of the sites was an abandoned residential structure which was assigned a low significance. Two of the assessed sites were evaluated for cultural and religion aspect. A grave site which is situated on the foot of the eastern dome formed a high social importance and was assigned a high value due to cultural significance associated with burial sites. The third site was conducted on the domes where artefacts and religion sites were investigated, as such no artefact or religion site was observed. However, the domes were assigned a medium value based on the probability to be utilized as religion area by Zionist which is dominantly practised in the project region.

Overall, the site was given a Grade III (B) field rating, and as such it is recommended that the burial must be fenced off and that a site management plan is to be implemented. From the heritage point the proposed project should be granted a go ahead provided the aforementioned recommendations are adhered to by the developer during the construction phase of the project.

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15. APPENDIX 1: Assessment Criteria

The Guidelines to the SAHRA Guidelines and the Burra Charter define the following criterion for the assessment of cultural significance:

Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric; sense of place, the smells and sounds associated with the place and its use.

Historic Value

Historic value encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section. The overall Limpopo Province region as a place has historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

Scientific value

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute further substantial information. Scientific value is also enshrined in natural resources that have significant social value.

For example, pockets of forests and bushveld have high ethnobotany value.

Social Value

Social value embraces the qualities for which a place has become a focus of spiritual, religious, political, local, national or other cultural sentiment to a majority or minority group. Social value also extend to natural resources such as bushes, trees and herbs that are collected and harvested from nature for herbal and medicinal purposes.

Evaluation of Heritage Resource

Based on the information from the national South African Heritage Resources Agency standards of best practice and minimum standards, data capture forms were used to collect information from the field through site condition surveys and observations. (Table 5) After the data was gathered from the field was combined with information from other sources it was deemed essential to establish the value and significance of individual sites as well as to identify any threats to the heritage. The South African National Heritage Resources Act 25 of 1999 grading scale was used to assess significance.

Significance assessment of heritage resources based on ICOMOS and NHRA criteria.

Very high (World Heritage National Heritage Sites (Grade 1) Sites

High (Nationally significant National Heritage Sites (Grade 1), Grade 2 sites (Provincial Heritage Sites), burials

Medium (regionally Grade 3a significant sites)

Low (locally significant sites) Grade 3b

Negligible Grade 3c

Unknown Grade 3a

HUMAN REMAINS AND BURIALS IN DEVELOPMENT CONTEXT

Developers, land use planners and professional specialist service providers often encounter difficult situations with regards to burial grounds, cemeteries and graves that may be encountered in development contexts. This may be before or during a development project. There are different procedures that need to be followed when a development is considered on an area that will impact upon or destroy existing burial grounds, cemeteries or individual graves. In contexts where human remains are accidentally found during development work such as road construction or building construction, there are different sets of intervention regulations that should be instigated. This brief is an attempt to highlight the relevant regulations with emphasis on procedures to be followed when burial grounds, cemeteries and graves are found in development planning and development work contexts. The applicable regulations operate within the national heritage and local government legislations and ordinances passed in this regard. These guidelines assist you to follow the legal pathway.

1. First, establish the context of the burial:

A. Are the remains less than 60 years old? If so, they may be subject to provisions of the Human Tissue Act, Cemeteries Ordinance(s) and to local, regional, or municipal regulations, which vary from place to place. The finding of such remains must be reported to the police but are not automatically protected by the National Heritage Resources Act (Act 25 of 1999).

B. Is this the grave of a victim of conflict? If so, it is protected by the National Heritage Resources Act (Section 36(3a)). (Relevant extracts from the Act and Regulations are included below).

C. Is it a grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority? If so, it is protected by the National Heritage Resources Act (Section 36(3b)).

D. Are the human or hominid remains older than 100 years? If so, they are protected by the National Heritage Resources Act (Section 35(4), see also definition of –archaeological in Section 2).

2. Second, refer to the terms of the National Heritage Resources Act most appropriate to the situation, or to other Acts and Ordinances:

A. Human remains that are NOT protected in terms of the National Heritage Resources Act (i.e. less than 60 years old and not a grave of a victim of conflict or of cultural significance) are subject to provisions of the Human Tissue Act and to local and regional regulations, for example Cemeteries Ordinances applicable in different Provincial and local Authorities.

B). All finds of human remains must be reported to the nearest police station to ascertain whether or not a crime has been committed.

C). If there is no evidence for a crime having been committed, and if the person cannot be identified so that their relatives can be contacted, the remains may be kept in an institution where certain conditions are fulfilled. These conditions are laid down in the Human Tissue Act (Act No. 65 of 1983). In contexts where the local traditional authorities given their consent to the unknown remains to be re-buried in their area, such re-interment may be conducted under the same regulations as would apply for known human remains.

3. In the event that a graveyard is to be moved or developed for another purpose, it is incumbent on the local authority to publish a list of the names of all the persons buried in the graveyard if there are gravestones or simply a notification that graves in the relevant graveyard are to be disturbed. Such a list would have to be compiled from the names on the gravestones or from parish or other records. The published list would call on the relatives of the deceased to react within a certain period to claim the remains for re-interment. If the relatives do not react to the advertisement, the remains may be re-interred at the discretion of the local authority.

However, it is the responsibility of the developer to ensure that none of the affected graves within the cemetery are burials of victims of conflict. The applicant is also required in line with the heritage legislation to verify that the graves have no social significance to the local communities.

A. It is illegal in terms of the Human Tissue Act for individuals to keep human remains, even if they have a permit, and even if the material was found on their own land.

4. The Exhumations Ordinance (Ordinance No. 12 of 1980 and as amended) is also relevant. Its purpose is –To prohibit the desecration, destruction and damaging of graves in cemeteries and receptacles containing bodies; to regulate the exhumation, disturbance, removal and re-interment of bodies, and to provide for matters incidental theretoll. This ordinance is supplemented and support by local authorities regulations, municipality by-laws and ordinances.

DEFINITIONS AND APPLICABLE REGULATIONS

1). A –Cemeteryll is defined as any land, whether public or private, containing one or more graves. 2). A –gravell includes – (a) any place, whether wholly or partly above or below the level of ground and whether public or private, in which a body is permanently interred or intended to be permanently interred, whether in a coffin or other receptacle or not, and (b) any monument, tombstone, cross, inscription, rail, fence, chain, erection or other structure of whatsoever nature forming part of or appurtenant to a grave.

3). No person shall desecrate, destroy or damage any grave in a cemetery, or any coffin or urn without written approval of the Administrator.

4). No person shall exhume, disturb, remove or re-inter anybody in a cemetery, or any coffin or urn without written approval of the Administrator. 5). Application must be made for such approval in writing, together with:

- A). A statement of where the body is to be re-interred.
- b). Why it is to be exhumed.

c). the methods proposed for exhumation.

d). Written permission from local authorities, nearest available relatives and their religious body owning or managing the cemetery, and where all such permission cannot be obtained, the application must give reasons why not.

6). The Administrator has the power to vary any conditions and to impose additional conditions.

7). anyone found guilty and convicted is liable for a maximum fine of R200 and maximum prison sentence of six months.

5. Human remains from the graves of victims of conflict, or any burial ground or part thereof which contains such graves and any other graves that are deemed to be of cultural significance may not be destroyed, damaged, altered, exhumed or removed from their original positions without a permit from the National Heritage Resources Agency. They are administered by the Graves of Conflict Division at the SAHRA offices in Johannesburg.

–Victims of Conflictll are:

a). Those who died in this country as a result of any war or conflict but excluding those covered by the Commonwealth War Graves Act, 1992 (Act No. 8 of 1992).

b). Members of the forces of Great Britain and the former British Empire who died in active service before 4 August 1914.

c). those who, during the Anglo Boer War (1899-1902) were removed from South Africa as prisoners and died outside South Africa, and,

d). those people, as defined in the regulations, who died in the –liberation strugglell both within and outside South Africa.

6. Any burial that is older than 60 years, which is outside a formal cemetery administered by a local authority, is protected in terms of Section 36(3b) of the National Heritage Resources Act. No person shall destroy damage, alter, exhume or remove from its original position, remove from its original site or export from the Republic any such grave without a permit from the SAHRA.

There are some important new considerations applicable to B & C (above).

SAHRA may, for various reasons, issue a permit to disturb a burial that is known to be a grave of conflict or older than 65 years, or to use, at a burial ground, equipment for excavation or the detection or the recovery of metals. (Permit applications must be made on the official form Application for Permit: Burial Grounds and Graves available from SAHRA or provincial heritage resources authorities.) Before doing so, however, SAHRA must be satisfied that the applicant:

- A). has made satisfactory arrangements for the exhumation and re- interment of the contents of such a grave at the cost of the applicant.
- b). has made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such a grave and,
- c). has reached an agreement with these communities and individuals regarding the future of such a grave or burial ground.

PROCEDURE FOR CONSULTATION the regulations in the schedule describe the procedure of consultation regarding the burial grounds and graves. These apply to anyone who intends to apply for a permit to destroy damage, alter, remove from its original position or otherwise disturb any grave or burial ground older than 60 years that is situated outside a formal cemetery administered by a local authority. The applicant must make a concerted effort to identify the descendants and family members of the persons buried in and/or any other person or community by tradition concerned with such grave or burial ground by:

- 1). Archival and documentary research regarding the origin of the grave or burial ground;
- 2). Direct consultation with local community organizations and/or members;
- 3). The erection for at least 60 days of a notice at the grave or burial ground, displaying in all the official languages of the province concerned, information about the proposals affecting the site, the telephone number and address at which the applicant can be contacted by any interested person and the date by which contact must be made, which must be at least 7 days after the end of the period of erection of the notice; and

- 4). Advertising in the local press.

The applicant must keep records of the actions undertaken, including the names and contact details of all persons and organizations contacted and their response, and a copy of such records must be submitted to the provincial heritage resources authority with the application.

Unless otherwise agreed by the interested parties, the applicant is responsible for the cost of any remedial action required.

If the consultation fails to research in agreement, the applicant must submit records of the consultation and the comments of all interested parties as part of the application to the provincial heritage resources authority. In the case of a burial discovered by accident, the regulations state that when a grave is discovered accidentally in the course of development or other activity:

- a). SAHRA or the provincial heritage resources authority (or delegated representative) must, in co-operation with the Police, inspect the grave and decide whether it is likely to be older than 60 years or otherwise protected in terms of the Act; and whether any further graves exist in the vicinity.
- b). If the grave is likely to be so protected, no activity may be resumed in the immediate vicinity of the grave, without due investigation approved by SAHRA or the provincial heritage resources authority; and
- c). SAHRA or the provincial heritage resources authority may at its discretion modify these provisions in order to expedite the satisfactory resolution of the matter.
- d). Archaeological material, which includes human and hominid remains that are older than 100 years (see definition in section 2 of the Act), is protected by the National Heritage Resources Act (Section 35(4)), which states that no person may, without a permit issued by the responsible heritage resources authority - destroy, damage, excavate, alter or remove from its original site any archaeological or paleontological material.

The implications are that anyone who has removed human remains of this description from the original site must have a permit to do so. If they do not have a permit, and if they are convicted of an offence in terms of the National Heritage Resources Act as a result, they must be liable to a maximum fine of R100 000 or five years imprisonment, or both.

TREAT HUMAN REMAINS WITH RESPECT

- a). every attempt should be made to conserve graves in situ. Graves should not be moved unless this is the only means of ensuring their conservation.
- b). The removal of any grave or graveyard or the exhumation of any remains should be preceded by an historical and archaeological report and a complete recording of original location, layout, appearance and inscriptions by means of measured drawings and photographs. The report and recording should be placed in a permanent archive.
- c). Where the site is to be re-used, it is essential that all human and other remains be properly exhumed and the site left completely clear.
- d). Exhumations should be done under the supervision of an archaeologist, who would assist with the identification, classification, recording and preservation of the remains.
- e). No buried artefacts should be removed from any protected grave or graveyard without the prior approval of SAHRA. All artefacts should be reburied with the remains with which they are associated. If this is not possible, proper arrangements should be made for the storage of such relics with the approval of SAHRA.
- f). the remains from each grave should be placed in individual caskets or other suitable containers, permanently marked for identification.
- g). The site, layout and design of the area for re-interment should take into account the history and culture associated with, and the design of, the original grave or graveyard.
- h). Re-burials in mass graves and the use of common vaults are not recommended.
- i). Remains from each grave should be re-buried individually and marked with the original grave markers and surrounds.
- j). Grouping of graves, e.g. in families, should be retained in the new layout.
- k). Material from the original grave or graveyard such as chains, kerbstones, railing and should be re-used at the new site wherever possible.
- l). A plaque recording the origin of the graves should be erected at the site of re-burial.
- m). Individuals or groups related to the deceased who claim the return of human remains in museums and other institutions should be assisted to obtain documentary proof of their ancestral linkages.

16. APPENDIX 2: HERITAGE MANAGEMENT PLAN INPUT INTO THE VANADIUM RESOURCES DEVELOPMENT, LIMPOPO PROVINCE EMP

Objective

Protection of archaeological sites and land considered to be of cultural value;
 Protection of known physical cultural property sites against vandalism, destruction and theft; and
 The preservation and appropriate management of new archaeological finds should these be discovered during construction.

No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
Pre-Construction Phase								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan, and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
Construction Phase								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM

		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or PHRA official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
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No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform Heritage Authority/SAHRA.		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the PHRA and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
		Same as construction phase.						

Operational Phase						
		Same as construction phase.				

17. APPENDIX 3: HERITAGE MITIGATION MEASURE TABLE

Site Ref	Heritage Aspect	Potential Impact	Mitigation Measures	Responsible Party	Penalty	Method Statement Required
Chance Archaeological and Burial Sites	General area where the proposed project is situated is a historic Landscape, which may yield archaeological, cultural property, remains. There are possibilities of encountering unknown archaeological sites during subsurface construction work which may disturb previously unidentified chance finds.	Possible damage to previously unidentified archaeological and burial sites during construction phase. Unanticipated impacts on archaeological sites where project actions inadvertently uncovered Significant archaeological sites. Loss of historic cultural landscape; Destruction of burial sites and associated graves Loss of aesthetic value due to construction work Loss of sense of place Loss of intangible heritage value due to change in land use	In situations where unpredicted impacts occur construction activities must be stopped and the heritage authority should be notified immediately. Where remedial action is warranted, minimize disruption in construction scheduling while recovering archaeological data. Where necessary, implement emergency measures to mitigate. Where burial sites are accidentally disturbed during construction, the affected area should be demarcated as no-go zone by use of fencing during construction, and access thereto by the construction team must be denied. Accidentally discovered burials	Contractor / Project Manager Archaeologist Project EO	Fine and or imprisonment under the PHRA Act & NHRA	Monitoring measures should be issued as instruction within the project EMP. PM/EO/Archaeologists Monitor construction work on sites where such development projects commences within the farm.

			<p>in development context should be salvaged and rescued to safe sites as may be directed by relevant heritage authority. The heritage officer responsible should secure relevant heritage and health authorities' permits for possible relocation of affected graves accidentally encountered during construction work.</p>			
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18. APPENDIX 4: LEGAL BACK GROUND AND PRINCIPLES OF HERITAGE

RESOURCES MANAGEMENT IN SOUTH AFRICA

Extracts relevant to this report from the National Heritage Resources Act No. 25 of 1999, (Sections 5, 36 and 47):

General principles for heritage resources management

5. (1) All authorities, bodies and persons performing functions and exercising powers in terms of this Act for the management of heritage resources must recognize the following principles:

(a) Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and as they are valuable, finite, non-renewable and irreplaceable they must be carefully managed to ensure their survival;

(b) every generation has a moral responsibility to act as trustee of the national heritage for succeeding generations and the State has an obligation to manage heritage resources in the interests of all South Africans;

(c) heritage resources have the capacity to promote reconciliation, understanding and respect, and contribute to the development of a unifying South African identity; and

(d) heritage resources management must guard against the use of heritage for sectarian purposes or political gain.

(2) To ensure that heritage resources are effectively managed—

(a) the skills and capacities of persons and communities involved in heritage resources management must be developed; and

(b) Provision must be made for the ongoing education and training of existing and new heritage resources management workers.

(3) Laws, procedures and administrative practices must— (a) be clear and generally available to those affected thereby;

(b) in addition to serving as regulatory measures, also provide guidance and information to those affected thereby; and

(c) Give further content to the fundamental rights set out in the Constitution.

(4) Heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

(5) Heritage resources contribute significantly to research, education and tourism and they must be developed and presented for these purposes in a way that ensures dignity and respect for cultural values.

(6) Policy, administrative practice and legislation must promote the integration of heritage resources conservation in urban and rural planning and social and economic development.

(7) The identification, assessment and management of the heritage resources of

South Africa must—

(a) take account of all relevant cultural values and indigenous knowledge systems; (b) take account of material or cultural heritage value and involve the least possible alteration or loss of it;

- (c) promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs;
- (d) contribute to social and economic development;
- (e) Safeguard the options of present and future generations; and (f) be fully researched, documented and recorded.

Burial grounds and graves

36. (1) where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

(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, 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 equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3) (a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

(5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—

(a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

(b) Reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in cooperation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority—

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

General policy

47. (1) SAHRA and a provincial heritage resources authority—

(a) must, within three years after the commencement of this Act, adopt statements of general policy for the management of all heritage resources owned or controlled by it or vested in it; and

(b) May from time to time amend such statements so that they are adapted to changing circumstances or in accordance with increased knowledge; and (c) must review any such statement within 10 years after its adoption.

(2) Each heritage resources authority must adopt for any place which is protected in terms of this Act and is owned or controlled by it or vested in it, a plan for the management of such place in accordance with the best environmental, heritage conservation, scientific and educational principles that can reasonably be applied taking into account the location, size and nature of the place and the resources of the authority concerned, and may from time to time review any such plan.

(3) A conservation management plan may at the discretion of the heritage resources authority concerned and for a period not exceeding 10 years, be operated either solely by the heritage resources authority or in conjunction with an environmental or tourism authority or under contractual arrangements, on such terms and conditions as the heritage resources authority may determine.

(4) Regulations by the heritage resources authority concerned must provide for a process whereby, prior to the adoption or amendment of any statement of general policy or any conservation management plan, the public and interested organisations are notified of the availability of a draft statement or plan for inspection, and comment is invited and considered by the heritage resources authority concerned.

(5) A heritage resources authority may not act in any manner inconsistent with any statement of general policy or conservation management plan.

(6) All current statements of general policy and conservation management plans adopted by a heritage resources authority must be available for public inspection on request.