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GREATER SOUTPANSBERG MOPANE PROJECT

HERITAGE RESOURCES

FINAL REPORT

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ABBREVIATIONS

CRM	Cultural Resources Management			
СМР	Conservation Management Plan			
DEDET	Department of Economic Development, Environment and			
	Tourism			
DEA	Department of Environmental Affairs			
DMR	Department of Mineral Resources			
EIA	Environmental Impact Assessment			
HIA	Heritage Impact Assessment			
LSA	Late Stone Age			
LIA	Late Iron Age			
LIHRA	Limpopo Heritage Resources Authority			
PHRA	Provincial Heritage Resources Authority			
МСРМ	Mbofho Consulting and Project Managers			
MSA	Middle Stone Age			
NHRA	National Heritage Resources Act			
NEMA	National Environmental Management Act			
NTFP	Non-timber forest product			
SAHRA	South African Heritage Resources Agency			
WAC	The World Archaeological Congress			

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DECLARATION OF INDEPENDENCE

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EXECUTIVE SUMMARY

The following report is a Heritage Impact Assessment (HIA) for the Mopane Project Area which describes potential adverse and positive effects of the proposed mining operations on heritage resources. The report builds on a scoping survey carried out earlier and adds results of fieldwork which followed. The report thus forms the basis for making decisions on intervention strategies to manage the heritage resources in the mining area.

The Impact Assessment has been carried out in accordance with the National Heritage Resources Act (No 25: 1999), the relevant sections of which are Section 38 (Heritage Impact Assessment process), Section 34 (Buildings and Structures older than 60 years) Section 35 (Archaeological and Palaentological sites) and Section 36 (Graves and Burial Grounds).

The cultural sequence in South Africa is the framework for the identification of Heritage Resources and is largely based on archaeological reconstruction. In addition cultural landscapes and intangible heritage have been considered as important dimensions of heritage.

One hundred and seventy-seven (177) heritage sites have been recorded under 7 typologies as follows:

	Heritage Typology	Quantity/Description
1	Provincial sites (Grade 2)	1 Stonewalled site
2	Grave Sites	40
3	Stone Age Archaeological Sites	9
4	Later Iron Age Archaeological Sites	45
5	Sites of the commercial farming period	66
	(historical archaeology)	
6	Cultural Landscapes (forest products)	34
7	Historic Buildings (Section 34)	3

TOTAL NUMBER OF SITES ¹	177
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A ranking system has been used to isolate sites that will need attention before or during the operation phase of the project. Seventy-seven (77) heritage sites have been prioritized under Categories 1 and 2 as deserving the highest attention before or during the operation phase of the project.

	Ranking	Explanation	No	of
			sites	
1	Very high	One provincial heritage site, Verdun Ruins (Section 7 of	42	
		NHRA), must not be disturbed.		
		All burials (Section 36 of NHRA) require stakeholder		
		consultations before relocation or other mitigation measures		
		are considered		
2	High	Substantial archaeological deposits, buildings protected	35	
		under Section 34 of NHRA. They require mitigation		
3	Medium	Mostly cultural landscapes (Mopani, Baobab, Marula stands)	32	
		including modern farmsteads. They also include		
		archaeological sites of lesser importance. They may require		
		mitigation		
4	Low	Heritage sites deemed of less importance. The minimum	68	
		requirement is that the sites have been recorded. Decisions		
		on mitigation will be made by a heritage expert including		
		options of destruction with or without salvage.		
		TOTAL	177	

The nature and scale of impacts of the proposed mining on heritage are summarised in the following table:

	ACTIVITY	POTENTIAL IMPACTS
1	Mineral extraction	Stripping of top soil and mineral extraction opencast methods will represent the most
		extensive excavation of the area and earthmoving.
		Total destruction of heritage sites
2	Non-carbonaceous	Overlaying (and destruction) of heritage sites.
	material dump	Possible graves in the proposed

¹ Some sites have more than one attribute which results in the total number exceeding 177

3	Carbonaceous damp	Overlaying (and destruction) of heritage sites
4	Stockpiles (topsoil & discards)	Overlaying (and destruction) of heritage sites
5	Mine infrastructure/Plant	Total destruction of heritage resources. Visuals impacts on cultural landscapes.
6	Main access road, conveyor belt	Total destruction and visual impacts
7	Emulsion and explosion areas	Destruction, vibration, pollution

High Impact areas are summarised on a farm by farm basis in the table below

	Farm	Number of Heritage sites affected
1	Voorburg	18
2	Banff	10
3	Ancaster	8
4	Delft	14
5	Pretorius 1	10
6	Pretorius 2	12
7	Du Toit	7
8	Faure	6
9	Cohen	18
10	Honeymoon	3
11	Kitchener	5
12	Hermanus	7
11	Verdun	6
12	Vrienden	6

Heritage sites have been ranked according to perceived risk from the mining as follows:

	Ranking	Explanation
1	Very high	One provincial heritage site (Section 7 of NHRA) must not be
		disturbed.
		All burials (Section 36 of NHRA) require stakeholder
		consultations before relocation or other mitigation measures are
		considered

2	High	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. They require mitigation
3	Medium	Mostly cultural landscapes (Mopani, Baobab, Marula stands) including modern farmsteads. They also include archaeological sites of lesser importance. They may require mitigation
4	Low	Heritage sited deemed of less importance. The minimum requirement is that the sites have been recorded. Decisions on mitigation will be made by a heritage expert including options of destruction with or without salvage.

Our findings and conclusions are that:

(i) Seventy-seven (77) heritage sites must be prioritized under Categories 1 and 2 as deserving the highest attention before or during the operation phase of the project. These sites include 40 graves which may require consultation with local communities and other stakeholders before any action on them is considered. These prime sites marked in amber and orange are proposed for Phase II assessments. This means that if a grave will definitely be affected, then its relocation must be considered. The other sites will deserve further investigation (if they will be affected). Archaeological sites will require excavation and surface collection of artefacts.

Material obtained from excavations will be deposited in Museums. Alternatively the Mine can establish its own holding facilities and/or exhibition/interpretive centre.

Historic buildings will require further study and management guidelines. Management guidelines will include basis for decisions for retention or disposal. A case by case approach is recommended, i.e. each case according to its merits.

(ii) Verdun Ruins must be treasured as a potential focal point of educational and touristic programmes

- Thirty-two (32) heritage sites are considered to be of medium significance. (iii) These include cultural landscape exemplifying non-timber forest product exploitation. The fate of Baobab trees in the mineral extraction areas must be decided in consultation with SAHRA and other stakeholders, as it is difficult to make a unilateral decision on these trees given their importance. An interdisciplinary decision is required i.e. broad consultation with environmentalists. In practical terms it will be difficult to save all baobabs trees in a mining operation of the scale envisaged. A case by case approach is therefore favoured. Generally our view is that sites of medium significance, except Baobab trees, may go since they have been recorded.
- (iv) Sixty-eight sites (68) are considered to be of less importance. As they have been recorded as minimum requirement, they may be disposed of with or without salvage.

DEFINITIONS

Archaeological material: remains resulting from human activities left as evidence of their presence which are older than 100 years, which are in the form of artifacts, food remains and other traces such as rock paintings or engravings, burials, fireplaces and structures.

Artifact: Any movable object that has been used, modified or manufactured by humans.

Catalogue: An inventory or register of artifacts and/or sites.

Conservation: All the processes of looking after a site/place including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeolontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This include intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural landscape: "the combined works of nature and man" and demonstrate "the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external".

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management, and sustainable utilization and present for present and for the future generations

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.

Conservation: means all the processes of managing a place to retain its cultural significance.

Early Iron Age: Most of the first millennium AD associated with the introduction of metallurgy and agriculture

Early Stone Age: Predominantly the Acheulean hand axe industry complex dating to + 1Myr yrs – 250 000 yrs. before present.

Excavation: that is a method in which archaeological materials are extracted, which involves systematic recovery of archaeological remains and their context by removing soil and any other material covering them.

Grave: a place of burial which include materials such as tombstone or other marker such as cross etc.

Historic material: means remains resulting from human activities, which are younger than 100 years and no longer in used, that include artefacts, human remains and artificial features and structures.

Historical: means belonging to the past.

Intangible heritage: Something of cultural value that is not primarily expressed in a material form e.g. rituals, knowledge systems, oral traditions, transmitted between people and within communities.

Historical archaeology: the study of material remains from both the remote and recent past in relationship to documentary history and the stratigraphy of the ground in which they are found; or archaeological investigation on sites of the historic period. In South Africa it refers to the immediate pre-colonial period, contact with European colonists and the modern industrial period.

In situ material: means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.

Later Iron Age: The period from the beginning of the 2nd millennium AD marked by the emergence if complex state society and long-distance trade contacts.

Late Stone Age: The period from \pm 30 000-yr. to the introduction metals and farming technology

Middle Stone Age: Various stone using industries dating from $\pm 250\ 000\ yr. - 30\ 000\ yrs.$ before

Monuments: architectural works, buildings, sites, sculpture, elements or structures of an archaeological nature, inscriptions, cave dwellings which are outstanding from the point of view of history, art and science.

Place: means site, area, building or other work, group of buildings or other works, together with pertinent contents, surroundings and historical and archaeological deposits.

Preservation: means protecting and maintaining the fabric of a place in its existing state and retarding deterioration or change, and may include stabilization where necessary.

Sherd: ceramic fragment.

Significance grading: Grading of sites or artifacts according to their historical, cultural or scientific value.

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

Site Recoding Template: Site recording form.

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1. INTRODUCTION

The following report is a Heritage Impact Assessment (HIA) which evaluates heritage sites in relation to the potential adverse or positive effects of the proposed mining operations. The report builds on a scoping survey and adds results of fieldwork which followed. Fieldwork reveals potential impacts of the proposed development with a high level of confidence. The report thus forms the basis of making decisions on intervention strategies to protect the heritage. Below we outline the legal framework, methodology and theoretical approaches that have underpinned the HIA process.

2. LEGAL FRAMEWORK

The Heritage Impact Assessment has been carried out in accordance with the National Heritage Resources Act (No 25: 1999), the relevant sections of which are cited below:

2.1. Heritage Impact Assessments

Section 38 states the nature and scale of development which triggers a Heritage Impact Assessment. The Mopane Project is large scale mining operation which encompasses all the attributes stated in Section 38, and thus calls for a full HIA:

(iv) the costs of which will exceed a sum set in terms of regulations by

^{38.} (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—

⁽a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

⁽b) the construction of a bridge or similar structure exceeding 50 m in length;

⁽c) any development or other activity which will change the character of a site-

⁽i) exceeding 5 000 m2 in extent; or

⁽ii) involving three or more existing erven or subdivisions thereof; or

⁽iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

SAHRA or a provincial heritage resources authority;

⁽d) the re-zoning of a site exceeding 10 000 m2 in extent; or

⁽e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Section 34 provides provisional protection of buildings and structures more than 60

years old:

(1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

2.2. Protection of Archaeological Sites

Section 35 (4) of then NHRA prohibits the destruction of archaeological, palaeontological and meteorite sites:

No person may, without a permit issued by the responsible heritage resources authority— (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;

(b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

(c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

(d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

2.3. Graves and Burial Grounds

Section 36 of the NHRA gives priority for the protection of Graves and Burial Grounds of victims of conflict and graves and burial grounds more than 60 years old. Within this frame cautious approaches are considered including managed exhumations and re-interment to pave way for development. The international policy position favours this position and advises consultation with communities who by association might have strong feelings for protection *in situ* and may argue that a development project is better moved to alternative site:

⁽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 reinterment 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.

Section 36(6) implies that all kinds of graves found during the course of development must be reported and investigated:

(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 co-operation 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.

A predevelopment Heritage Impact Assessment is predicated on Subsection 6 which requires a developer to halt operations if graves are discovered, even as Section 36 does not specify what course of action to take in respect of graves other than those of victims of conflict or less than 60 years old found in a development area. The **World Archaeological Congress (WAC**) has set international ethical standards for the treatment of human remains. In 1989 the WAC Inter-Congress in South Dakota (USA) adopted the **Vermillion Accord on Human Remains** urging:

- 1. Respect for the mortal remains of the dead shall be accorded to all, irrespective of origin, race, religion, nationality, custom and tradition.
- 2. Respect for the wishes of the dead concerning disposition shall be accorded whenever possible, reasonable and lawful, when they are known or can be reasonably inferred.

- 3. Respect for the wishes of the local community and of relatives or guardians of the dead shall be accorded whenever possible, reasonable and lawful.
- 4. Respect for the scientific research value of skeletal, mummified and other human remains (including fossil hominids) shall be accorded when such value is demonstrated to exist.
- 5. Agreement on the disposition of fossil, skeletal, mummified and other remains shall be reached by negotiation on the basis of mutual respect for the legitimate concerns of communities for the proper disposition of their ancestors, as well as the legitimate concerns of science and education.

6. The express recognition that the concerns of various ethnic groups, as well as those of science are legitimate and to be respected, will permit acceptable agreements to be reached and honoured.

3. METHODOLOGY

3.1. Scoping Report

At the beginning of the project a scoping report was prepared based on a desktop situation analysis. The Client made available relevant technical documents pertaining to the proposed mining operations, of major importance being map data showing mineral extraction areas, proposed siting of mine infrastructure and haulage routes.

A preliminary picture of the heritage potential of the area was constructed from project documents provided by the Client. Archaeologist Frans Roodt had carried out research on Sheldrake Ranch on the northern end of the mining area and had provided clues on the kind of heritage resources to expect in the area, in particular archaeological sites.

In addition various other sources have been researched with internet being an important portal of access. In particular Google-Earth aerial views and geopositioning system provided a useful geographical overview of the area. The position of the some important sites in relation to the mining activity areas were confirmed

using Google-Earth's GPS system. This knowledge enriched the scoping report and guided our fieldwork strategies.

A general literature overview was carried out to gain understanding of a number of key issues including

- (a) Understanding the legal framework for Heritage Impact Assessment and grading of sites in South Africa
- (b) Locating the Mopane area in the broad sweep of South African history;
- (c) Understanding key conservation management issues for the area
- (d) Ethno-botany which shows the dynamics of cultural landscapes.

Sections 3, 34, 35, 36 and 38 of the National Heritage Resources Act (No 25, 1999) form the legal context in which Heritage Impact Assessments are prescribed; they are stated in this report as the statutory reference point.

3.2. Fieldwork

Conventional field methods of archaeological reconnaissance were employed during fieldwork – field-walking surveys, examination of artifacts found on the surface. A walking survey simply involves "going out on foot" and examining the ground surface in order to observe and record archaeological artifacts, features and activity areas.² The team stopped at irregular intervals to carry out random spot checks, a maximum radius of 100m covered.

Foot surveys were sometimes varied with windscreen surveys using a vehicle. Landscape characteristics were studied. Sometimes the team was fortunate to be accompanied by farm owners or workers and their insights and local knowledge is most appreciated. They pointed out especially the location of graves and archaeological sites and their knowledge of early commercial farming settlements form the basis of the historical archaeology component of this study.

² **David, A.** 2006. "Finding Sites". In Balme, J. & A Paterson (eds) *Archaeology in Practice*. Victoria Australia: Blackwell Publishing. : p9.

3.3. Site Recording Template

A Heritage Site Recording Template with many data fields was used as a framework for recording sites that were discovered **(Annexure II).** Some fields were left blank because in an exercise of this nature some information is not immediately available. The heritage site recording form is the basis of an Inventory of Sites presented as in MS Excel **(Annexures I)** attached hereto. For identification purposes the site names given are often the names of the Farms on which the sites are found. Photographs and GPS coordinates in degrees, minutes and seconds allow future use of the database in websites such as Earth-Google or national and/or local GIS platforms. GPS identification, will allow future researchers to retrace the sites, and the sites shall never be "lost" (even if some will be destroyed during mining operations). Better still if the sites can be incorporated into future tourist and educational itineraries of the Mine.

For ease of recognition of the significance ranking the sites colour scheme were assigned as follows:

3.4. Significance Ranking

The significance ranking is in respect of perceived impacts of the proposed development. Thus the sites are not being ranked *per se* as provided under Section 7 of NHRA as this is outside the scope of this work. Significance is thus determined under General Principle (general criteria of defining the National Estate) stated in Section 3 of the same Act which will be referred to later. The following four categories and will determine the nature intervention and mitigation. For ease of recognition the categorised are highlighted by a colour scheme which is also used in the catalogue of heritage sites (Annexure II) as well as a consolidated table (spread sheet) of sites (Annexure I).

	Ranking	Explanation	
1	Very high	One provincial heritage site (Section 7 of NHRA) must not be disturbed. All burials (Section 36 of NHRA) require stakeholder consultations before relocation or other mitigation measures are considered	Amber
2	High	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. They require mitigation	Yellow
3	Medium	Mostly cultural landscapes (Mopani, Baobab, Marula stands) including modern farmsteads. They also include archaeological sites of lesser importance. They may require mitigation	Blue
4	Low	Heritage sited deemed of less importance. The minimum requirement is that the sites have been recorded. Decisions on mitigation will be made by a heritage expert including options of destruction with or without salvage.	Grey

3.5. Spread-sheet Table of Heritage Sites

The site catalogue was summarised in an MS Excel spread-sheet with each row representing a site and site attributes summarised under selected key fields (columns). In this format site characteristics (attributes) could be analysed and patterns noted. For ease of reference the significance ranking of sites is stated using a colour scheme as follows:

Amber	High significance
Yellow	High significance
Blue	Medium significance
Grey	Low significance

3.6. Fieldwork challenges

There were delays and short notification in the securement of appointments to visit the commercial farms, which sometimes resulted in visits being rescheduled. Some schedules were abandoned midstream. This presented planning and logistical difficulties. We also observed difficulties in estimating minimum time requirements for fieldwork in relation to the area to be covered and the level of detail expected. Almost invariably time had to be extended. The presence of dangerous animals such as buffalo, leopard and snakes had been advised. Fortunately there were no incidents.

4. THEORETICAL FRAMEWORK

4.1. Cultural Sequence in South Africa as Framework for the Identification of Heritage Resources

The following is an outline of the cultural sequence in South Africa and some heritage concepts that form the theoretical framework for understanding typologies of heritage resources in South Africa.

The Stone Age Culture

South Africa's human history and heritage span more than 3 million years. Hominid sites and their fossil remains are largely confined to dolomite caves on the highveld in Gauteng, Limpopo and Northwest Provinces.³Hominid refers to primate species which are the immediate ancestors of man. The Stone Age which dates back more than 1 million years marks a more diagnostic appearance of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages. Stone and bone implements manifest the technology of the period and fall into distinct typologies indicating chronological development. Material evidence of human activities is easily detectable in caves, rock-shelters and riverside sites, and very rarely seen in open country.⁴ The Late Stone Age is also associated with the execution of paintings mostly in rock shelters and caves.

The Early Stone Age

The Early Stone Age marks the earliest appearance of stone artefacts about 1.4 million years ago. Such tools bore a consistent shape such as the pear-shaped hand axe, cleavers and core tools (Deacon & Deacon, 1999). These tools, which have been called Acheulian after a site in France, were probably used to butcher large animals such as Elephants, Rhino and Hippo that had died from natural causes. Acheulian artefacts are usually found near sites where they were manufactured and thus in close proximity to the raw material or at butchering sites. The early hunters

³ Deacon, J. and N. Lancaster. 1986. *Later Quaternary Palaeo-environments of Southern Africa*. Oxford: Oxford University Press.

⁴ http://archaeology.about/od/bterms/g/bordercave.htm

are classified as hominids meaning that they had not evolved to the present human form.

Middle Stone Age (MSA)

The Middle Stone Age (MSA), which appeared 100 000 years ago, is marked by the introduction of a new tool kit which included prepared cores, parallel-sided blades and triangular points hafted to make spears. By then men had become skilful hunters, especially of large grazers such as Wildebeest, Hartebeest and Eland. It is also believed that by then, men had evolved to become anatomically modern. Caves were used for shelter suggesting permanent or semi-permanent settlement. Furthermore there is archaeological evidence from caves indicating that people had mastered the art of making fire. These were two remarkable steps in cultural advancement.⁵

Later Stone Age (LSA)

By the beginning of the LSA, humans were classified as *Homo sapiens* which refer to the modern physical form and thinking capabilities. Several behavioural traits are exhibited, such as rock art paintings and purposeful burials with ornaments, became a regular practice. The practitioners of the Rock Art Paintings are definitely the ancestors of the San and sites abound in the whole of South Africa. LSA technology is characterised by microlithic scrapers and segments made from very fine-grained rock. Spear hunting probably continued, but LSA people also hunted small game with bows and poisoned arrows. Because of poor preservation, open sites are usually of less value than rock shelters.

The Iron Age Culture

The Iron Age culture, which supplanted the Stone Age at least 2000 years ago, is associated with the introduction of farming and the use of several metals and pottery. Scholars have analyzed existing archaeological evidence using various models, the earliest attempts of which arrived at the conclusion that a sudden synchronized appearance of these technologies occurred in South Africa, indeed in the whole

⁵ Deacon, J & H. Deacon. 1999. *Human Beginnings in South Africa*. Cape Town: David Philip.

region of Eastern and Southern Africa, suggesting a fairly rapid spread of people.⁶ The concept of migration itself has been debated, since these people are indigenous to Africa. Thus current theoretical positions are in support of a gradual "expansion" or "spread" (rather than a migration in the strict sense) of populations of speakers of Bantu languages from a source or sources in the North. Pottery, even though broken into shards has a high survival rate, and has been a handy means for characterizing and identifying archaeological traditions within the broad Iron-using culture and to further isolate geographical variations, which have been called *facies*.⁷Ceramic classifications rely largely on shape and decoration similarities and variations. Coupled with radiocarbon dates, which have been obtained at several sites, it has been possible to reconstruct a picture of the chronological and spatial development of Iron Age traditions.

Early Iron Age

Metal working represents a new technology not found among the Stone Age hunters. As mixed farmers, iron-using peoples practiced agriculture and kept domestic animals such as Cattle, Sheep, Goats and Chickens amongst others. There is however increasing evidence that Sheep might have moved into the area much earlier than the Iron Age.

According to Huffman (2007) there were two streams of Early Iron Age (EIA) expansion converging in South Africa, one originating in east Africa which has been called the Urewe-Kwale Tradition (or the eastern stream) and another from the west spreading through Zambia and Angola called the Kalundu Tradition (or western stream) (Figs 1-3).

Urewe Tradition spawned the following facies:

- Matola (Eastern Seaboard)
- Mzonjanifacies (Broederstroom) AD 450 750)

Kalundu Tradition spawned the following facies:

⁶ Phillipson, D. W. 2005. *African Archaeology*. Cambridge: University of Cambridge Press: 249.

⁷ Evers, T. M. 1988. *Recognition of Groups in the Iron Age of Southern Africa*. Unpublished PhD Thesis, University of Witwatersrand. Huffman 2007. A Handbook on the Iron Age. Scottsville: UKZN Press

Benfica Sub-branch:

• Bambata facies AD 150 - 650

Happy Rest Sub-branch:

- Happy Rest facies AD 500 750
- Malapati facies AD 750 1030



Spread of the Kalundu & Urewe Traditions in Southern Africa (Huffman 2007: 122)



Matola (Silver Leaves) Facies of the Urewe-Kwale Tradition (Huffman 2007: 123)



Broederstroom facies (later than Matola) (Huffman 2007: 127)

The Later Iron Age

Around the turn of the first Millennium AD, Archaeologists have noticed the growing importance of Cattle in the economy of farmers as houses and grain bins were arranged around a central area for cattle. This settlement behaviour dubbed the "Central Cattle Pattern" commonly occurs in South Africa, with sites usually sited near water and good soils that could be cultivated with an iron hoe. The growing importance of Cattle in defining social and economic rank is seen at K2 at the confluence of the Shashi and Limpopo Rivers. Subsequently and nearby at Mapungubwe (approximately 80km from the Project Area) further transformation in the spatial organisation of settlements occurred where the "Central Cattle Pattern" changed into the Zimbabwe Pattern which defines political elites.

Various factors contributed to these cultural and settlement changes, but important was the surplus wealth from the East Coast Gold and Ivory trade and the intensive cultivation of the Limpopo flood plains. From about 1300 AD, there is evidence of Venda, and Northern Sotho settlement in the area north of the Soutpansberg. They are recognised by their distinctive pottery, known after the farm Icon where the pottery was first found. After 1400 AD, there appear to have been movements from across the Limpopo River introducing the Zimbabwe-Khami culture. Early Venda

history is a subject of on-going debate and research (Nemaheni, pers. com). There appear to be three chronological layers representing intrusions by the Ngona, Lembethu/Mbedzi/Thavhatsindi and Singo groups, possibly all coming from across the Limpopo River in that order.

Two stonewalled sites have been confirmed one in the Mopane Project Area and Chapudi Project, namely Verdun and Machema respectively. Both ruins fall within the Mapungubwe-Thulamela-Dzata continuum. Dzata, which dates to the 18th century, appears to be the youngest of the Zimbabwe type settlements, and is located approximately 40km to the east of the Mopane Project Area.⁸

Various LIA facies have been identified on the basis of pottery typology and radiocarbon dates.

- Moloko (Sotho-Tswana) Branch
- Icon facies AD 1300 1500: This pottery is associated with the first Sotho Tswana people entering the country.
- Eiland facies AD 1000 1300
- Mapungubwe facies AD 1250 1300
- Mutamba facies AD 1250 1450
- Khami facies AD 1430 1680
- Thavhatshena facies AD 1450 1600
- Letaba facies AD 1600 present

Letaba pottery is associated with modern day Venda people and can be found in any Venda village.

4.2. Other Heritage Concepts

4.2.1. Historical Archaeology

The frame of archaeological application is extended to cover the historical period. Archaeological evidence can be used to complement the large corpus of historical and oral data. One archaeologist has noted that, "one rule ... is that documentary

⁸ https://en.wikipedia.org/wiki/Dzata ruins

and archaeological data are kept distinct to avoid circular arguments as one is tested against the other". In other words written and oral documents are seen as independent sources of data.⁹

The coming of the Voortrekkers in the area and the introduction of commercial farming in the 19th and early 20th centuries has a strong archaeological footprint in the Mopane Project Area. We noted a prevalence of house remains associated with pioneer commercial farmers and shifting semi-permanent dwellings of farm workers. Several graves both with inscriptions and "anonymous" mostly associated with pioneer farmers or their workers were also recorded. Archaeology of the historical and industrial periods brings forth new terminology – historical archaeology and industrial archaeology - to denote emerging sub-disciplines which find relevant application to this study, even if to complement the corpus of written records.

4.2.2. Cultural Landscapes

Over the past twenty years a territorial approach to heritage has shifted emphasis from sites to the recognition of broad territorial attributes of heritage. Within the international discourse which has ensued, a genre of heritage called Cultural Landscapes has emerged. Article 47 of the *Operational Guidelines for the Implementation of the World Heritage Convention* (2005) defines Cultural Landscapes as:

Cultural landscapes are cultural properties that represent the "combined works of nature and of man" designated in Article 1 of the World Heritage Convention. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal.

Broadly, the Project Area, which is approximately 80km from Mapungubwe, may be considered as part of the Greater Mapungubwe Cultural Landscape. The following genres of cultural landscapes have been encountered:

⁹ Little, Barbara. 2006. Historical Sources. In Balme, Jane & Alistair Paterson (Eds). 2010. Archaeology in *Practice:* Oxford: Blackwell Publishing.

Organically evolved cultural landscapes result from an initial social, economic, administrative, and/or religious imperative and have developed its present form by association with and in response to its natural environment. Such landscapes reflect that process of evolution in their form and component features. They fall into two sub-categories:

- A relict (or fossil) landscape is one in which an evolutionary process came to an end at sometime in the past, either abruptly or over a pera period. Its significant distinguishing features are, however, still visible in material form; and
- A continuing landscape is one which retains an active social role in contemporary society closely associated with the traditional way of life, and in which the evolutionary process is still in progress. At the same time it exhibits significant material evidence of its evolution over time.

Associative cultural landscapes have powerful religious, artistic or cultural associations of the natural elements rather than material cultural evidence, which may be insignificant or even absent.

4.2.3. Intangible Cultural Heritage

The elevation of Intangible Cultural Heritage has evolved out of a post-colonial discourse largely nurtured in the developing world. South Africa has participated actively in the debates which culminated in the UNESCO Intangible Heritage Convention passed in 2003.

The "intangible cultural heritage" means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity. Intangible values give meaning to heritage sites.

The study deals with intangible heritage in so far as it relates to tangible heritage resources in the area.

5. FINDINGS

5.1. Current Conservation Status of Heritage Resources in the Project Area

The Mopane Project Area is under various land use systems including commercial farming (cattle ranching, game farming and crops). While it is noted that archaeological sites under plantation and irrigation fields have been disturbed, these new activities have also created a cultural landscape layer of heritage value. Cattle and game farming is practised and we note that archaeological sites tend to remain stable under such conditions. The area still retains good natural woodlands some of which are fine examples of forest product harvest cultural landscapes.

5.2. Summary Data on Heritage Resources

	Heritage Typology	Quantity/Description
1	Provincial Sites (Grade 2)	1 Stonewalled site
2	Grave Sites	40
3	Stone Age Archaeological Sites	9
4	Later Iron Age archaeological Sites	45
5	Sites of the Commercial Farming Period	66
	(historical archaeology)	
6	Cultural Landscapes (forest products)	34
7	Historic Buildings (Section 34)	3

5.3. Geographical location of mine operational activities

The map below which shows the geographical spread of mine activities is important for specific determination of potential adverse impacts on heritage resources



Map data is summarised in the table below. Grey shades showing a farm by farm distribution of operational activities. Suffices it here only to indicate by an *asterisk* those farms where the activity is deemed to be of minor scale.

	Farm	Mining area	Carbonaceou	Non-	Stockpiles	Mine Plant	Emulsion	Road Rail	Heritage
			s material	carbonaceous	(topsoil &		&	C- belt	sites
				material	discards)		explosion		
1	Voorburg								18
2	Banff								10
3	Ancaster	*							8
4	Delft								14
5	Pretorius 1								10
6	Pretorius 2								12
7	Du Toit								7
8	Faure								6
9	Cohen								18
10	Honeymoon	*							3
11	Kitchener								5
12	Hermanus	*							7
11	Verdun	*							6
12	Vrienden								6

5.4. Assessment of Potential Impacts

The table below is a summary of the potential impacts of each operational activity shown in the map above.

	ACTIVITY	POTENTIAL IMPACTS
1	Mineral extraction	Stripping of top soil and mineral extraction opencast
		methods will represent the most extensive excavation
		of the area and earthmoving. Total destruction of
		heritage sites
2	Non-carbonaceous	Overlaying (and destruction) of heritage sites. Possible
	material dump	graves in the proposed area
3	Carbonaceous damp	Overlaying (and destruction) of heritage sites
4	Stockpiles (topsoil &	Overlaying (and destruction) of heritage sites
	discards)	
5	Mine	Total destruction of heritage resources. Visuals impacts
	infrastructure/Plant	on cultural landscapes.
6	Main access road,	Total destruction and visual impacts
	conveyor belt	
7	Emulsion and	Destruction, vibration, pollution
	explosion areas	

Studying the above tables in conjunction with the consolidated table of heritage sites, we form a good picture of likely negative impacts. The following a thematic assessment of potential impacts:

5.5. National and Provincial Heritage Sites (Monuments)

Site No	Farm	Threats
95	Verdun	None, possible dust pollution

To our knowledge there are no proclaimed Grade 1 sites in the Mopane Project Area. The Verdun Ruins (Site No 95 in the Catalogue) on <u>Verdun Farm</u> were proclaimed a National Monument in 1938 under the now repealed National

Monument Commission/ Council (NMC) Act. It thus became ranked Grade 2 Provincial Heritage Site under the National Heritage Resources Act, (No 25: 1999). Verdun Ruins was an early Venda chiefly settlement, situated approximately 10km west of the small town of Mopane. According to legend, the ruins are the remains of the home of the Venda Chief Matshokotike, dating to the early eighteenth century. The strong walls of the Khoro, or council-chamber, have a typical chief's chair. Behind the chair on the opposite side of the walls is a short piece of wall with check patterns. These ruins, like the Machema (in the Chapudi Project Area) and Dzata Ruins in Sibasa Communal area, form an important architectural continuum with Mapungubwe. They are however built much later than Mapungubwe associated with southward movements of later Venda groups across the Limpopo River (DEA, 2004).

According to the South African Heritage Resources Agency (SAHRA) the largest Baobab Tree in the Vhembe District which is located near Tshipise, southeast of Musina has been proclaimed a National Monument (Grade 1) under the NHRA, 25 of 1999: South African Heritage Resource Agency Identification (SAHRA ID) 9/2/240/0003. There are many Baobab trees in the Project Area as the fieldwork results attest. Only a few baobabs have been selected and illustrated in the catalogue to highlight their heritage significance (e.g. Site Nos 4, 16, 85).

Assessment of Impacts

The Mining area on Verdun Farm is a small portion on its south-eastern corner of the farm (boundary with Faure and Hermanus. The Verdun Ruins are therefore considered to be out of physical danger, although pollutive mine dust can reach the ruins.



Site No 95. Verdun Ruins, Verdun Farm

5.6. Cultural Landscapes of Heritage Value

The following cultural landscape layers have been identified in the Mopane Project Area

Site No	Farm	Threats
5	Faure	Mineral extraction
29	Delft	None
108	Jutland	None

5.6.1. Mopane Vegetation System

For thousands of years this ecosystem has provided subsistence to human communities. In particular Mopane woodland (*Colophospermum mopane*) is a seasonal source of Mopane worms (*Gonimbrasia belina*, Mashonzha). "The "Mopane worm/Mashonzha" is probably the most important insect in Southern Africa from a cultural point of view." Its exploitation seems to be largely environmental friendly as a non-timber forest product (NTFP), and has persisted in the same way from time immemorial into the industrial era. Mopane worms have been commercialised to meet demand in urban areas. Commercial farmers have cashed in on the high demand and charge a premium price to harvesters. The worm is a highly nutritious insect larva with high protein content of about 66%. Its short

seasonal occurrence between November and January may have bridged a possible nutritional gap from the dry season to earliest summer harvest of pumpkins, cowpeas and round-nuts. The harvest of Mashonzha is one of forest forage practices which have been inherited from an ancient past. Mopane woodland is a prime example of an organically evolved cultural landscape.

Assessment of Impacts

The Mopane Project Area possesses good stands of Mopane woodland - Site Nos 5 (Faure Farm), Site No 29 (<u>Delft Farm</u>), Site No 108 (<u>Jutland Farm</u>), which are worth selecting for preservation. The stands on Faure Farm are located in a mineral extraction area. The ones on Jutland Farm are considered to be of direct threat from mining activities. It must be noted that Mopane is ubiquitous in the area extending to Cohen, Du Toit, and other stand on Ancaster, Banff and Voorburg Farms. Mineral extraction, mine dumps and road construction are all unfriendly to the preservation of forests.



Site 5. Mopane stand, Faure Farm

5.6.2. Baobab Trees

	Site No	Farm	Threat
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4	Faure	Mineral extraction

The designation of the Baobab tree as a heritage resource has already been discussed above. The Mopane Project Area has a scatter of Baobab trees as with any other part of the Limpopo lowveld area. The Baobab is a special tree, protected since it is universally respected on the African continent with associated cosmological beliefs. Cosmology in the anthropological sense refers to knowledge and belief systems and interpretations and practices of society about their place and existence in the world. Old Baobab trees particularly those with cavities would have served as burial sites, rainmaking shrines or temporary homes. As already stated the biggest Baobab tree found near Tshipise just outside Musina area has been proclaimed a National Monument. The Order of the Baobab is one of the three highest National Honours conferred by the State President on the occasion of Freedom Day to citizens who have distinguished themselves in the field of business, the Economy, Science, Medicine, Technology and Community service.

Assessment of Impacts

We deemed it unnecessary to record all the Baobab Trees in the Project area. Several individuals located close to each were recorded on <u>Faure Farm</u> (Site No 4 in the centre of a mineral extraction area.



Site No 85, Baobab tree, cavity has prepared floor, Pretorius 2 Farm

5.6.3. Marula Trees

Site No	Farm	Threat
106	Jutland	None
107	Jutland	None

The prevalence of Marula trees (*Sclerocarya birrea*, subspecies *caffra*) adds to the rich tapestry of cultural landscapes in the Project area. Marula seeds appears in Archaeological deposits dating back 10 000 BC; 24 million seeds recovered from Pomongwe Cave in the Matobo Hills, South-western Zimbabwe exemplify forest resource exploitation in archaeological times.¹⁰ The fruit produces white or grey nuts which are rich in minerals and vitamins. The tree has multiple uses - the wood (carving), bark, leaves (medicinal), fruit, nut and kernel (food). The fruit is much favoured by Elephants which are known to move from one tree to the next when it is in season. Domestic animals such as Cattle, Sheep and Goats also eat the fruit. Large Saturniid caterpillars are gathered from the Marula tree during the wet season.

The fruit is treasured for the acid juice which can be taken raw, or is fermented into a wine – *Mukumbi* - widely consumed in Southern African countries. In Phalaborwa in Limpopo Province, a Marula festival takes place during September, and has been annually scheduled to coincide with Heritage Month, in which elderly Venda and Shangaan/Tsonga women brew and serve *Mukumbi/Vukanya* in large drums (Silidi, Pers. com). Today South Africa is the source of Marula-flavoured wine and cream of the same name, commercially produced and with a worldwide market.

Assessment of Impacts

We have observed that dense Marula colonies rarely occur, but individuals are ubiquitous interspersed with other lowveld trees. Two good stands were recorded on **Jutland Farm** ((Site Nos 106, 107). These are considered not to be directly threatened by mining activities.

¹⁰<u>http://www.krugerpark.co.za/africa_marula.html</u>



Site No 106, Marula stand, Jutland Farm

5.6.4. Modern Commercial Farmsteads

Site No	Farm	Threat
153, 154	Cohen	Non-carbonaceous dump area
6	Faure	Non-carbonaceous dump area
34, 37	Du Toit	Non-carbonaceous dump area
128	Hermanus	Emulsion and explosion
120	Kitchener	Haulage route
14	Ancaster	Mineral extraction, stockpiles
92	Pretorius1	Mineral extraction, Stockpiles
115	Vrienden	Haulage route

The focal point of all commercial farms is a farmstead complex usually consisting of several buildings. This is the residence of the farm owner, also doubles up as the farm headquarters from which the farm operations are managed. The centrepiece is farmhouse typically in simple gabled architecture. The farmstead in particular therefore defines a cultural landscape which is strongly represented in the Mopane Project Area, this notwithstanding that some buildings may be less than 60 years, and hence not considered under Section 34 of NHRA.

Assessment of impacts

A number of farmsteads were recorded to illustrate the significance of this youngest cultural landscape layer e.g. Site Nos 6 (<u>Faure Farm</u>), 14 (<u>Ancaster Farm</u>), 30 (<u>Delft Farm</u>). Building can be easily adapted for other use in mining operation.



Site No 14, a typical farmhouse, Ancaster Farm

5.7. Buildings and structures older than 60 years

Site No	Farm	Threats
47	Banff	None
92	Pretorius	Mineral extraction, stockpiles
127	Hermanus	Emulsion and explosion

Section 34 of the NHRA provides for automatic protection for structures older than 60 years as sites of potential heritage value, unless it can be confirmed otherwise (through investigations).

Assessment of Impacts

At least 3 farmhouses confirmed as more than 60 years and constitute an architectural tradition of simple gabled houses commonly occurring Assessment of impacts (Site Nos 47 Banff Farm), 92 (Pretorius Farm), 127 Hermanus Farm).



Site No 127, Farmhouse built in 1945, Hermanus Farm

5.8. Graves and Burial Grounds

Forty burial sites have been recorded and here we flag on those sites that will be directly affected by mine works. A distinction may be made between graves with inscriptions and those which are "anonymous". The pattern is also consistent that those graves with inscription tend to be properly built and finished either cement or polished granite dressing and inscribed headstones, while those without bio-data tend to be marked by stone cairns. Headstones are also placed on some of the roughly marked graves. All graves of farm owners and their family members are in the first category, while those which appear to be of farm workers are mostly marked by stone cairns. At two burial grounds there were also dressed graves of farm workers or their family members.

Site No	Farm	Threat	
2	Faure	Mineral extraction, haulage route	
33	Du Toit	Mineral extraction	
8, 11	Ancaster	Mineral extraction, stockpiles	
27	Delft	Non-carbonaceous dump	
73, 78	Pretorius 1	Mine infrastructure (plant)	
79, 80, 85, 87	Pretorius 2	Mineral extraction, stockpiles	
112	Vrienden	Haulage route	
118	Kitchener	Haulage route	
124	Hermanus	Emulsion and explosion	
140	Cohen	Mineral extraction, stockpiles	
160	Voorburg	Mineral extraction, carbonaceous, non-carbonaceous	
		dump	

Assessment of Impacts

As the above table shows many burials will be directly affected by the development. Development imperatives often make it practically impossible to protect and preserve all graves in their original positions, i.e. *in situ-*. Legislation, allow exhumation but advises a cautious approach and consultation with communities who might have strong feelings for protection in original positions. Section 36 of the NHRA provides for Graves and Burial Grounds of victims of conflict. It also implies that development projects may warrant exhumations and relocation of burials.



Burials located in the project Area.





Site No 79, graves of farm owners, Pretorius 2 Farm

5.9. Archaeological sites

Site No	Farm	Туре	Threat
1	Faure	Stone Age	Mineral extraction
7	Ancaster	Historical archaeology	Mineral extraction, stockpiles
28	Delft	Stone Age	Non-carbonaceous dump
34	Du Toit	Historical archaeology	Mineral extraction, haulage route
72	Pretorius 1	LIA	Mine plant
115	Vrienden	Historical archaeology	Haulage route
141	Cohen	LIA	Mineral extraction, non-carbonaceous,
			stockpiles
142	Cohen	LIA	Mineral extraction, non-carbonaceous
			dump, stockpiles
143	Cohen	LIA	Mineral extraction, non-carbonaceous
			dump, stockpiles
146	Cohen	LIA	Mineral extraction, non-carbonaceous
			dump, stockpiles
147	Cohen	LIA	Mineral extraction, non-carbonaceous
			dump, stockpiles
156	Honeymoon	LIA	Carbonaceous dump
170	Voorburg	Historical archaeology	Mineral extraction
172	Voorburg	LIA	Mineral extraction
177	Voorburg	LIA	Mineral extraction

5.9.1. The Stone Age

Stone Age sites were very rarely encountered during the survey. As a general rule they tend to occur on the edge of rivers and streams. One would not expect to find structures left by Stone Age people; other artefacts of this period apart from the stone artifacts have a poor chance of surviving through several millennia since discarded. The scraper sites appear to date to the MSA or LSA periods. Our findings are therefore consistent with general archaeological experience in the area.

Assessment of impacts

Since Stone Ages sites are rare they deserve to be further investigated as mitigation for loss as they occur in activity areas.

5.9.2. The Later Iron Age

Preliminary examination of ceramics found at LIA sites in the project shows affinities with Later Iron facies in this part of the Limpopo Valley. Panels filled with incised lines and stamps predominate. Thus we make a preliminary conclusion that they belong to the Mutamba tradition.¹¹

Assessment of Impacts

Further studies will be necessary to confirm these findings. Thus a few sites have been selected for further investigations in the next phase of the project.

5.10. Historical archaeology

A number of "archaeological" sites represent a young layer of abandoned farm workers dwellings. These are rectangular buildings of stone and mud (*dhaka*) plaster standing on a foundation of stones. Of importance are the ceramics which appear to form a continuum with the pre-colonial LIA traditions in the area. This is an interesting archaeological which is worth investigating further – how the LIA traditions interface with the commercial farming period. It appears that farm workers took with them the pre-existing pottery technology and/or acquired pottery from neighbouring communal lands through trade.

Assessment of impacts

A "pottery tradition" associated with commercial farm workers is a new discovery which present opportunities to add a dimension to archaeological discourse on the supposed "end" of the African Iron Age and the beginning of the Industrial Age. A

¹¹ Huffman 2007, Roodt, 2012.

few sites have been selected and prioritized for further investigation as mitigation for loss as they occur in activity areas.



Site No 23, Farm workers site with pottery and lower grinding stone, Delft Farm

6. ASSESSMENT OF IMPACTS USING A RISK RANKING SYSTEM

The following ranking system has been used to isolate sites that will need attention before or during the operation phase of the project. As stated earlier four risk categories are used to advise on the nature intervention and mitigation. A colour scheme is used to show the categories.

	Ranking	Explanation	No	of
			sites	
1	Very high	One provincial heritage site, Verdun Ruins (Section 7 of	42	
		NHRA), must not be disturbed.		
		All burials (Section 36 of NHRA) require stakeholder		
		consultations before relocation or other mitigation measures		
		are considered		
2	High	Substantial archaeological deposits, buildings protected	35	
		under Section 34 of NHRA. They require mitigation		
3	Medium	Mostly cultural landscapes (Mopani, Baobab, Marula stands)	32	
		including modern farmsteads. They also include		
		archaeological sites of lesser importance. They may require		
		mitigation		
4	Low	Heritage sites deemed of less importance. The minimum	68	
		requirement is that the sites have been recorded. Decisions		
		on mitigation will be made by a heritage expert including		
		options of destruction with or without salvage.		
		TOTAL	177	

Seventy-seven (77) heritage sites have been prioritized under Categories 1 and 2 as deserving the highest attention before or during the operation phase of the project. These sites include 40 graves which may require consultation with local communities and other stakeholders before any action on them is considered.



Priority sites in the northern section of the Mining Area (Left to right - Farms Vera Plots Banff, Delft, Ancaster and Voorburg) Yellow = Burials, Green = other sites



Priority sites in the southern section of the Mining Area (Farms Cohen, Honeymoon, Jutland, Hermanus, Verdun, Pretorius 1 & 2, Vrienden, Van der Bijl, and Kitchener). Yellow = Burials, Green = other sites



All priority sites

7. ASSESSEMENT OF IMPACTS USING THE HERITAGE IMPACT ASSESSMENT STATUTORY FRAMEWORK

7.1. Section 3(3) of the NHRA

Firstly we assess the value of the identified heritage resources in terms of Section 3 of the NHRA which defines the National Estate.

(3)Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—

	STATUTORY REFERENCE	OBSERVATIONS
(a)	Its importance in the community, or pattern of South Africa's history	Large archaeological deposits may shed light on the development of LIA facies. LIA potter traditions may have continued into commercial farming period
(b)	Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage	None
(C)	Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Large archaeological deposits may shed light on the development of LIA facies. LIA potter traditions may have continued into commercial farming period
(d)	Its importance in demonstrating the principal characteristics of a particular	Mopane and Marula stands and baobab, and farmsteads constitute cultural

	class of South Africa's natural or	landscapes of value.
	cultural places or objects;	
(e)	Its importance in exhibiting particular	None
	aesthetic characteristics valued by a	
	community or cultural group;	
(f)	Its importance in demonstrating a high	Verdun Ruins are protected
	degree of creative or technical	
	achievement at a particular period	
(g)	Its strong or special association with a	There are many graves mostly of
	particular community or cultural group	commercial farm workers and farm owners
	for social, cultural or spiritual reasons	
(h)	Its strong or special association with the	None
	life or work of a person, group or	
	organisation of importance in the	
	history of South Africa	
(i)	Sites of significance relating to the	None
	history of slavery in South Africa.	

7.2. Section 38 of the NHRA

Section 38 of the National Heritage Resources Act under Subsection 3 also provides a schedule of tasks to be undertaken in an HIA process:

Section 38(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

(a) The identification and mapping of all heritage resources in the area affected

As described above ground reconnaissance was carried and a total of 177 heritage sites recorded. The sites were classified according to the following heritage typologies: Archaeological sites, historic buildings, graves/burial grounds, cultural landscapes.

(b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7

The Verdun Ruins (Site No 95) is a declared Provincial Heritage Site. The rest of the sites have been ranked in terms of perceived value in case they are lost as result of the different.

(c) An assessment of the impact of the development on such heritage resources

As in the foregoing, some sites which have been flagged are threatened by the proposed development and the risk rank system proposes appropriate interventions and mitigation measures.

(e) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development

The mining project will bring about much needed economic development through employment, social corporate projects to improve livelihood of communities.

(f) The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources

(f) If heritage resources will be adversely affected by the proposed development, the consideration of alternatives

Alternatives will be considered in the implementation phase of the project

(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.

Sites in the priority list are recommended for further investigations including excavations, where necessary relocation of some of the graves done, before mine operations commence.

8. CONCLUSIONS

- (i) Seventy-seven (77) heritage sites must be prioritized under Categories 1 and 2 as deserving the highest attention before or during the operation phase of the project. These sites include 40 graves which may require consultation with local communities and other stakeholders before any action on them is considered. These prime sites marked in amber and orange are proposed for Phase II assessments. This means that if a grave will definitely be affected, then its relocation must be considered. The other sites will deserve further investigation (if they will be affected). Archaeological sites will require excavation and surface collection of artefacts. Material obtained from excavations will be deposited in Museums. Alternatively the Mine can establish its own holding facilities and/or exhibition/interpretive centre. Historic buildings will require further study and management guidelines. Management guidelines will include basis for decisions for retention or disposal. A case by case approach is recommended, i.e. each case according to its merits.
- (ii) Verdun Ruins (included in the Priority list of 77) will be treasured as a potential focal point of educational and touristic programmes
- (iii) Thirty-two (32) heritage sites are considered to be of medium significance. These include cultural landscape exemplifying non-timber forest product exploitation. The fate of Baobab trees in the mineral extraction areas must be decided in consultation with SAHRA and other stakeholders, as it is difficult to make a unilateral decision on these trees given their importance. An interdisciplinary decision is required i.e. broad consultation with environmentalists. In practical terms it will be difficult to save all baobabs trees in a mining operation of the scale envisaged. A case by case approach is therefore favoured. Generally our view is that sites of medium significance, except Baobab trees, may go since they have been recorded.
- (iv) Sixty-eight sites (68) are considered to be of less importance. As they have been recorded as minimum requirement, they may be disposed of with or without salvage.

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10. APPENDICES

APPENDIX I	TABLE OF HERITAGE RESOURCES
APPENDIX II	CATALOGUE OF HEIRITAGE RESOURCES
APPENDIX III	PROJECT TEAM QUALIFICATIONS