

Prepared for:

METAGO ENVIRONMENTAL ENGINEERS

KEATON MINING (PTY) LTD

**A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR
KEATON MINING'S (PTY) LTD PROPOSED NEW OPENCAST AND
UNDERGROUND MINING ACTIVITIES ON THE FARM
VANGGATFONTEIN 251 EAST OF DELMAS ON THE EASTERN
HIGHVELD IN THE MPUMALANGA PROVINCE OF SOUTH AFRICA**

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EXECUTIVE SUMMARY

A Phase I Heritage Impact Assessment (HIA) study as required in terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999) was done for the proposed Keaton Project Area east of Delmas on the Eastern Highveld in the Mpumalanga Province of South Africa. The aims with the HIA study were:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1) do occur within the perimeters of the Keaton Project Area and, if so, to determine the level of significance of these heritage resources.
- To make recommendations regarding the mitigation or the conservation of any significant heritage resources that may be affected by the proposed new mining development project.

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

- Informal graveyards and graves.

These heritage resources were geo-referenced and mapped (Figure 2; Table 1).

The significance of the graveyards and graves are also indicated (Table 1) while mitigation measures are proposed for those graveyards and graves which may be affected by the proposed new open cast and underground mining activities.

The significance of the heritage resources

The significance of the heritage resources is indicated by means of stipulations derived from the National Heritage Resources Act (No 25 of 1999) and specific criteria relating to the type of heritage resource that is evaluated.

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

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

Mitigating the heritage resources

It is highly likely that GY01, GY4 and GY07 in the Keaton Project Area will be affected by the proposed new open cast and underground mining activities on Vanggatfontein 251. Consequently, the following mitigation measures have to be applied to these heritage resources and to those graveyards that will not be affected by the proposed mining activities.

Graveyards and graves in the Keaton Project Area can be mitigated by following one of the following strategies, namely:

- Graveyards can be demarcated with brick walls or with fences. Conserving graveyards *in situ* in mining areas create the risk and responsibility that they may be damaged, accidentally, that the mine remains responsible for its future unaffected existence, maintenance and that controlled access must exist for any relatives or friends who wish to visit the deceased.
- Graveyards can also be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

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1 INTRODUCTION

Keaton Mining (Pty) Ltd (Keaton Mining) is a newly formed South African BEE mining company. Keaton Mining proposes to develop a new opencast and underground coal mining operation. In addition, the proposed project will include a coal washing plant, mine residual disposal facilities, and various support infrastructure and services.

This document contains the report on the results of a Phase I Heritage Impact Assessment (HIA) study which was done for the proposed Keaton Project Area east of Delmas on the farm Vanggatfontein 251 on the Eastern Highveld in the Mpumalanga Province of South Africa.

Focused archaeological research has been conducted in the Mpumalanga Province for more than four decades. This research consists of surveys and of excavations of Stone Age and Iron Age sites as well as the recording of rock art and historical sites. The Mpumalanga Province has a rich heritage comprised of remains dating from the pre-historical and from the historical (or colonial) periods of South Africa. Pre-historical and historical remains in the Mpumalanga Province of South Africa therefore form a record of the heritage of most groups living in South Africa today.

Various types and ranges of heritage resources that qualify as part of South Africa's 'national estate' as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) occur in the Mpumalanga Province (see Box 1, next page).

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

The National Heritage Resources Act (Act No 25 of 1999, Section 3) outlines the following types and ranges of heritage resources that qualify as part of the national estate, namely:

- (a) places, buildings structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and paleontological sites;
- (g) graves and burial grounds including-
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders
 - (iii) graves of victims of conflict
 - (iv) graves of individuals designated by the Minister by notice in the Gazette;
 - (v) historical graves and cemeteries; and
 - (vi) other human remains which are not covered by in terms of the Human Tissue Act, 1983 (Act No 65 of 1983)
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) moveable objects, including -
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
 - (ii) objects to which oral traditions are attached or which are associated with living heritage;
 - (iii) ethnographic art and objects;
 - (iv) military objects;
 - (v) objects of decorative or fine art;
 - (vi) objects of scientific or technological interest; and
 - (vii) books, records, documents, photographs, positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

The National Heritage Resources Act (Act No 25 of 1999, Art 3) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value ...'. These criteria are the following:

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

2 TERMS OF REFERENCE

Keaton Mining (Pty) Ltd intends to establish open cast and underground mining activities on the farm Vanggatfontein 251 east of Delmas on the Eastern Highveld in the Mpumalanga Province of South Africa. Activities relating to the development of the open cast and underground mines may impact on any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No. 25 of 1999). Consequently, Metago Environmental Engineers commissioned the author to undertake a Phase I HIA study for the proposed Keaton Project Area with the following aims

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1) do occur within the perimeters of the Keaton Project Area and, if so, to determine the level of significance of these heritage resources.
- To make recommendations regarding the mitigation or the conservation of any significant heritage resources that may be affected by the proposed new mining development project.

3 THE KEATON PROJECT AREA

3.1 Location

The proposed Keaton Project Area is located on the farm Vanggatfontein 251 east of Delmas in the Delmas Magisterial District of the Nkangala District Municipality in the Mpumalanga Province. The project area is located between Delmas in the west, Kriel in the east and Leandra in the south. The project area on Vanggatfontein 251 stretches across an undulating piece of land and is largely covered with agricultural fields. Few trees occur in the larger area. Those that do occur are exotics such as Blue Gum lots, poplar-groves on the banks of streams and the odd Oak tree which is usually located near a historical farm homestead. Most of these trees are anthropogenic as they have been introduced in the area by means of early human activities in the past (2628 Kendall 1: 50 000; 2628 East Rand 1: 250 000) (Figures 1 & 2).

3.2 Within a cultural landscape

The proposed Keaton Project Area is located in the midst of a cultural landscape that is marked by heritage remains dating from the pre-historical into the historical (colonial) period. Stone Age sites, Iron Age and colonial remains therefore do occur in the Eastern Highveld (see Part 9 'Select Bibliography').

The archaeological and historical significance of this cultural landscape therefore must be described and explained in more detail before the results of the Phase I HIA study is discussed (see below, Part 5).



Figure 1- The Keaton Project Area on the Eastern Highveld of the Mpumalanga Province is an undulating piece of land which is characterised by outstretched maize fields (above).

4 METHODOLOGY

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

- Surveying the proposed Keaton Project Area with a vehicle and selected spots on foot as well as surveying, where possible, areas adjoining the Keaton Project Area.
- Briefly surveying literature relating to the pre-historical and historical context of the Keaton Project Area.
- Consulting maps of the proposed Keaton Project Area.
- Consulting archaeological (heritage) data bases.
- Consulting spokespersons regarding the possible presence of graveyards and graves in the project area.
- Synthesising all information obtained from the data bases, fieldwork, maps and literature survey.

4.1 Fieldwork

The proposed Keaton Project Area was surveyed with a vehicle where accessible roads existed while selected, sensitive spots in the project area were surveyed on foot.

4.2 Databases, literature survey and maps

Databases kept and maintained at institutions such as the Provincial Heritage Resources Agency (PHRA) and the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria were consulted to determine whether any heritage resources of significance has been identified during earlier heritage surveys in or near the Keaton Project Area.

The author is not unacquainted with the Keaton Project Area at large as he had done several heritage impact assessment studies near the proposed project area (see Part 8, 'Select Bibliography').

Literature relating to the pre-historical and the historical unfolding of the Eastern Highveld where the Keaton Project Area is located was reviewed (see Part 5, 'Contextualising the Keaton Project Area').

It is important to contextualise the pre-historical and historical background of the Keaton Project Area in order to comprehend the identity and meaning of heritage sites in and near the project area.

In addition, the Keaton Project Area was studied by means of maps on which it appears (2628BB Kendall 1: 50 000; 2628 East Rand 1: 250 000).

4.3 Consulting spokespersons

Spokespersons living in the project area were consulted regarding the possible presence of solitary graves and graveyards. Many graveyards on the Eastern Highveld occur in maize fields where they remains undetected if not pointed out by persons, such as farmers and workers, who are well acquainted with the project area (see Part 9, 'Spokespersons consulted').

4.4 Assumptions and limitations

It is possible that this Phase I HIA study may have missed heritage resources in the Keaton Project Area as heritage sites may occur in thick clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences.

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

4.5 Some remarks on terminology

Terms that may be used in this report are briefly outlined in Box 2.

Box 2. Terminologies that may be used in this report

The Heritage Impact Assessment (HIA) referred to in the title of this report includes a survey of heritage resources as outlined in the National Heritage Resources Act, 1999 (Act No 25 of 1999) (See Box 1).

Heritage resources (cultural resources) include all human-made phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

The term 'pre-historical' refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the Keaton Project Area, to the first appearance or use of 'modern' Western writing brought to the Eastern Highveld by the first Colonists who settled in this area during the 1830's.

The term 'relatively recent past' refers to the 20th century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may, in the near future, qualify as heritage resources.

It is not always possible, based on observations alone, to distinguish clearly between archaeological remains and historical remains, or between historical remains and remains from the relatively recent past. Although certain criteria may help to make this distinction possible, these criteria are not always present, or, when they are present, they are not always clear enough to interpret with great accuracy. Criteria such as square floor plans (a historical feature) may serve as a guideline. However, circular and square floors may occur together on the same site.

The term 'sensitive remains' is sometimes used to distinguish graves and cemeteries as well as ideologically significant features such as holy mountains, initiation sites or other sacred places. Graves in particular are not necessarily heritage resources if they date from the recent past and do not have head stones that are older than sixty years. The distinction between 'formal' and 'informal' graves in most instances also refers to graveyards that were used by colonists and by indigenous people. This distinction may be important as different cultural groups may uphold different traditions and values with regard to their ancestors. These values have to be recognised and honoured whenever graveyards are exhumed and relocated.

The term 'Stone Age' refers to the prehistoric past, although Late Stone Age peoples lived in South Africa well into the historical period. The Stone Age is divided into an Earlier Stone Age (3 million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years to 40 000 years ago) and the Late Stone Age (40 000 years to 200 years ago).

The term 'Iron Age' refers to the last two millennia and 'Early Iron Age' to the first thousand years AD. 'Late Iron Age' refers to the period between the 16th century and the 19th century and can therefore include the historical period.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the pre-historical, historical or the relatively recent past.

The term 'study area', or 'Keaton Project Area' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types of heritage resources in any given area.

Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include the documenting of rock art, engraving or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavations of archaeological sites; the exhumation of bodies and the relocation of graveyards, etc. Phase II work may require the input of specialists and requires the co-operation and approval of SAHRA.

5 CONTEXTUALISING THE KEATON PROJECT AREA

The following brief overview of pre-historical, historical, cultural and economic evidence will help to contextualise the proposed Keaton Project Area.

5.1 Stone Age sites

Stone Age sites are marked by stone artefacts that are found scattered on the surface of the earth or as parts of deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (covers the period from 2.5 million years ago to 250 000 years ago), the Middle Stone Age (refers to the period from 250 000 years ago to 22 000 years ago) and the Late Stone Age (the period from 22 000 years ago to 200 years ago).

The Later Stone Age is also associated with rock paintings and engravings which were done by the San, Khoi Khoi and in more recent times by Iron Age farmers.

Heritage surveys up to now have recorded few Stone Age sites, rock paintings and engravings in the Eastern Highveld.

5.2 Iron Age remains

The Iron Age is associated with the first agro-pastoralists who lived in semi-permanent villages and who practised metal working during the last two millennia. The Iron Age is usually divided into the Early Iron Age (covers the 1st millennium AD) and the Later Iron Age (covers the first 880 years of the 2nd millennium AD).

The Eastern Highveld has not been occupied by Early Iron Age communities but was occupied by Late Iron Age communities such as the Sotho, Swazi and

Ndebele who established settlement complexes that are associated with stone walls.

5.3 The historical period

Historical towns closest to the Keaton Project Area include Delmas and Leandra.

Delmas was laid out in 1907 on the farm Witklip ('white stone') which was divided into 192 residential stands, 48 smallholdings of 4 ha each and a commonage of 138ha. The farm belonged to Frank Dumat who originated from France where he grandfather had a small farm. He named the town Delmas which is derived from 'mas' which means a small farm in a southern dialect of French. In 1909 the government added another 5 500 ha to Frank Dumat's original rural settlement.

The town of Leandra's name is derived from two townships, Leslie and Eendrag, which are incorporated in this mining village.

Several large coal mines which feed the Sasol plants at Secunda and Eskom's giant power stations on the Eastern Highveld are located near the project area. The wider project area is one of the most productive agricultural areas in the country. The principal crops which are produced in the region include maize, wheat, sorghum, dairy, potatoes and other vegetables. Cattle and sheep ranching also make a significant contribution to the local economy. Gold and silica mines also occur in the area.

5.4 A coal mining heritage

Coal mining on the Eastern Highveld is now older than one century and has become the most important coal mining region in South Africa. Whilst millions of tons of high-grade coal are annually exported overseas more than 80% of the

country's electricity is generated on low-grade coal in Eskom's power stations such as Duvha, Matla and Arnot situated near coalmines on the Eastern Highveld.

The earliest use of coal (charcoal) in South Africa was during the Iron Age (300-1880AD) when metal workers used charcoal, iron and copper ores and fluxes (quartzite stone and bone) to smelt iron and copper in clay furnaces.

Colonists are said to have discovered coal in the French Hoek Valley near Stellenbosch in the Cape Province in 1699. The first reported discovery of coal in the interior of South Africa was in the mid-1830 when coal was mined in Kwa Zulu/Natal.

The first exploitation for coal was probably in Kwa Zulu/Natal as documentary evidence refers to a wagon load of coal brought to Pietermaritzburg to be sold in 1842. In 1860 the coal trade started in Dundee when a certain Pieter Smith charged ten shillings for a load of coal dug by the buyer from a coal outcrop in a stream. In 1864 a coal mine was opened in Molteno. The explorer, Thomas Baines mentioned that farmers worked coal deposits in the neighbourhood of Bethal (Transvaal) in 1868. Until the discovery of diamonds in 1867 and gold on the Witwatersrand in 1886, coal mining only satisfied a very small domestic demand.

With the discovery of gold in the Southern Transvaal and the development of the gold mining industry around Johannesburg came the exploitation of the Boksburg-Spring coal fields, which is now largely worked out. By 1899, at least four colliers were operating in the Middelburg-Witbank district, also supplying the gold mining industry. At this time coal mining also has started in Vereeniging. The Natal Collieries importance was boosted by the need to find an alternative for imported Welsh anthracite used by the Natal Government Railways.

By 1920 the output of all operating colliers in South Africa attained an annual figure of 9,5million tonnes. Total in-situ reserves were estimated to be 23 billion tonnes in Witbank-Springs, Natal and Vereeniging. The total in situ reserves today are calculated to be 121 billion tonnes. The largest consumers of coal are Sasol, Iscor and Eskom.

5.5 A vernacular stone architectural heritage

A unique stone architectural heritage was established in the Eastern Highveld from the second half of the 19th century well into the early 20th century. During this time period stone was used to build farmsteads and dwellings, both in urban and in rural areas. Although a contemporary stone architecture also existed in the Karoo and in the Eastern Free State Province of South Africa a wider variety of stone types were used in the Eastern Highveld. These included sandstone, ferricrete ('oukclip'), dolerite ('bloukclip'), granite, shale and slate.

The origins of a vernacular stone architecture in the Eastern Highveld may be ascribed to various reasons of which the ecological characteristics of the region may be the most important. Whilst this region is generally devoid of any natural trees which could be used as timber in the construction of farmsteads, outbuildings, cattle enclosures and other structures, the scarcity of fire wood also prevented the manufacture of baked clay bricks. Consequently stone served as the most important building material in the Eastern Highveld.

Late Iron Age communities who contributed to the Eastern Highveld's stone walled architecture were the Sotho, Pedi, Ndebele and Swazi. The tradition set by these indigenous groups may have influenced the first settlers from Natal and the Cape Colony to utilize the same resources that their predecessors did. Many farmers from Scottish, Irish, Dutch, German and Scandinavian descend settled and farmed in the Eastern Highveld. These colonials brought the knowledge of stone masonry

from Europe which compensated for the lack of fire wood necessary to manufacture baked clay bricks.

6 THE PHASE I HERITAGE IMPACT ASSESSMENT

6.1 Types and ranges of heritage resources

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

- Informal graveyards and graves.

These heritage resources were geo-referenced and mapped (Figure 2; Table 1).

The significance of the graveyards and graves are also indicated (Table 1) while mitigation measures are proposed for those graveyards and graves which may be affected by the proposed new open cast and underground mining activities.

The Phase I HIA study is now briefly discussed and illustrated with photographs.

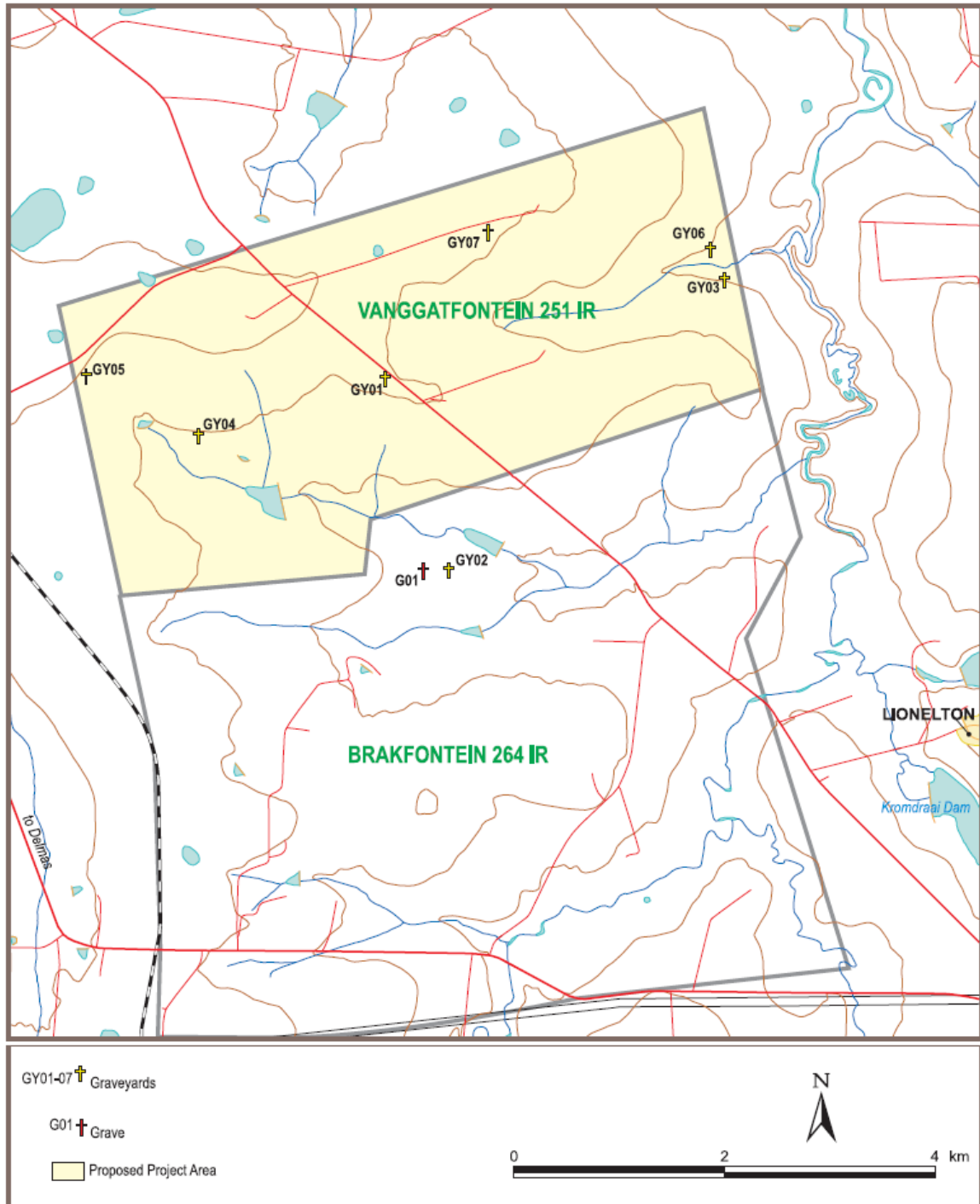


Figure 2- The proposed new Keaton Project Area on the farm Vanggatfontein 251 to the east of Delmas in the Mpumalanga Province of South Africa. Note the presence of informal graveyards and graves in and near the project area (above).

6.1.1 Graveyards and graves

The following graveyards and graves were observed in and near the Keaton Project Area (Figures 2, 3-8; Table 1).

6.1.1 Graveyard 01

This informal graveyard is located near a sisal bush and possible remains from the recent past. The graves are barely visible in tall grass. There may be as many as five graves scattered around the sisal clump. One is fitted with a cement head stone.



Figure 4- GY01 is located near a sisal bush and holds as many as five graves (above).

6.1.2 Graveyard 02

This informal graveyard is located on the edge of a maize field and may contain as many as fifteen graves, most of which are covered with piles of stone. Eight of the graves are fitted with cement head stones. One of the headstones holds the following inscription:

- 'Langoxolo Mokoco'(sic)



Figure 5- GY02 is located on the edge of a maize field and holds as many as thirty-five graves most of which are covered with stones (above).

6.1.3 Graveyard 03

This large graveyard is located near the eastern border of the project area close to the edge of a maize field. It holds at least thirty- five graves of which a number is fitted with cement headstones. An inscription on one of the headstones reads as follows:

- 'Laphakulele libarar marombuka waiaia ogo maaka'(sic) 9-4-1967'

6.1.4 Graveyard 04

This informal graveyard in a maize field contains three graves all fitted with cement headstones and are edged with cement strips. The headstones hold the following inscriptions, namely:

- 'Lettie Nalkere Mbonani'
- 'Frans Tswarri Mbonani'
- 'Nomah ? Maggie Mbonani'

6.1.5 Graveyard 05

GY05 is situated near one of Eskom's pylons in the middle of a maize field. The graves are currently covered with kosmos flowers and are not visible. GY04 may hold as many as seven graves.



Figures 6 & 7- Three graves (GY04) between maize fields on Vanggatfontein 251 (above). GY05 is located in a maize field near an Eskom pylon (below).



6.1.6 Graveyard 06

GY06 contains approximately twenty graves and is located near the eastern border of the Keaton Project Area. Most of the graves are covered with heaps of stone. A few cement head stones also occur. Two of these cement headstones bear the following inscription:

- 'Christina 1964-02-14 Nalala Ngorlyaka 1984-02-04 wabekwa (sic) 14-021989'
- 'Maria Msiza'

6.1.7 Graveyard 07

GY07 is located in a maize field and contains approximately thirty graves all currently covered with kosmos flowers. A single grave fitted with an elaborate granite headstone is visible. It contains the following inscription:

- 'Bhuda In loving memory of our mother Nomangisi Maria † 1940-04-30
May your soul rest in peace'

6.1.6 Grave 01

This solitary grave occurs near GY02. It is marked by a white-washed cement head stone and white painted stones on top of the grave.



Figure 8- GY07 is located in a maize field and contains approximately 30 graves, all except one is covered with kosmos flowers (above).

Graveyards and graves	Coordinates	Significance
GY01. Approximately 5 graves next to a sisal bush. Covered with stones. One grave fitted with cement head stone.	26° 10.928' 28° 50.733'	HIGH
GY02. Covered with stones, some fitted with cement head stones. On edge of maize field.	26° 11.918' 28° 51.057'	HIGH
G01. Single grave between maize fields. Edged with white washed stones and fitted with cement head stone.	26° 11.915' 28° 50.930'	HIGH
GY03. Approximately 30 graves on eastern border of project area.	26° 10.422' 28° 52.472'	HIGH
GY04. Three graves between maize fields. Fitted with cement head stones with inscriptions.	26° 11.224' 28° 49.773'	HIGH
GY05. In maize field near pylon. Covered with kosmos flowers.	26° 10.919' 28° 49.196'	HIGH
GY06. Approximately 20 graves near border of Vanggatfontein. Mostly covered with stones	26° 10.290' 28° 52.398'	HIGH
GY07. Approximately 30 graves in maize field. Covered with kosmos flowers	26° 10.228' 28° 51.142'	HIGH

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

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

7.1 Types and ranges of heritage resources

The Phase I HIA study for the Keaton Project Area revealed the following types and ranges of heritage resources in and near the project area:

- Informal graves and graveyards

7.2 The significance of the heritage resources

The significance of the heritage resources is indicated by means of stipulations derived from the National Heritage Resources Act (No 25 of 1999) and specific criteria relating to the type of heritage resource that is evaluated.

7.2.1 Graveyards and graves

All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

7.3 Mitigating the heritage resources

It is highly likely that GY01, GY4 and GY07 in the Keaton Project Area may be affected by the proposed new open cast and underground mining activities on Vanggatfontein 251. Consequently, the following mitigation measures have to be applied to these heritage resources and to those graveyards that will not be affected by the proposed mining activities.

7.3.1 Graveyards and graves

Graveyards and graves in the Keaton Project Area can be mitigated by following the following strategies, namely:

- Graveyards can be demarcated with brick walls or with fences. Conserving graveyards *in situ* in mining areas create the risk and responsibility that they may be damaged, accidentally, that the mine remains responsible for its future unaffected existence, maintenance and that controlled access must exist for any relatives or friends who wish to visit the deceased.
- Graveyards can also be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

7 CONCLUSION AND RECOMMENDATIONS

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

- Informal graveyards and graves.

These heritage resources were geo-referenced and mapped (Figure 2; Table 1).

The significance of the graveyards and graves are also indicated (Table 1) while mitigation measures are proposed for those graveyards and graves which may be affected by the proposed new open cast and underground mining activities.

The significance of the heritage resources

The significance of the heritage resources is indicated by means of stipulations derived from the National Heritage Resources Act (No 25 of 1999) and specific criteria relating to the type of heritage resource that is evaluated.

All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

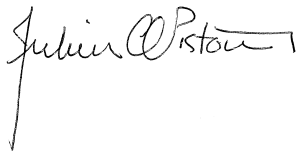
Mitigating the heritage resources

It is highly likely that GY01, GY4 and GY07 in the Keaton Project Area will be affected by the proposed new open cast and underground mining activities on Vanggatfontein 251. Consequently, the following mitigation measures have to be

applied to the heritage resources and to those graveyards that will not be affected by the proposed mining activities.

Graveyards and graves in the Keaton Project Area can be mitigated by following one of the following strategies, namely:

- Graveyards can be demarcated with brick walls or with fences. Conserving graveyards *in situ* in mining areas create the risk and responsibility that they may be damaged, accidentally, that the mine remains responsible for its future unaffected existence, maintenance and that controlled access must exist for any relatives or friends who wish to visit the deceased.
- Graveyards can also be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.



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Mr. Carel Peach, farm owner Vanggatfontein 251

Mr. Filemon Mgoni, farm labourer Vanggatfontein 251.