

Prepared for:

PILANESBERG PLATINUM MINES (PTY) LTD (PPM)

SLR CONSULTING (AFRICA) (PTY) LTD

**A PHASE I HERITAGE IMPACT ASSESSMENT STUDY FOR A
COMBINED PLATINUM MINING OPERATION NEAR THE
PILANESBERG IN THE NORTH-WEST PROVINCE: THE
PILANESBERG PLATINUM MINE TUSCHENKOMST PIT
EXTENSION**

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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 (No 25 of 1999) was done for Pilanesberg Platinum Mine's (PPM) proposed expansion of its existing opencast platinum mining operation on the farms Tuschenkomst 135JP and Witkleifontein 136JP. The PPM's mining infrastructure and mining activities are situated on several farms to the north of the Pilanesberg Nature Reserve in the North-West Province. It is proposed that the existing opencast pit on the farm Tuschenkomst be extended eastwards and southwards onto the farms Wilgespruit 2JQ and Rooderand 46JQ and the Waste Rock Dump (WRD) further westwards on Tuschenkomst 135JP and onto stone walled sites as well as entering a conceptualised cultural landscape between the mountains Mogare, Matone and Patswane.

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

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (Box 1) do occur in the PPM Project Area and, if so, to determine the nature, the extent and the significance of these remains.
- To determine whether such remains will be affected by the proposed PPM Project and, if so, to determine appropriate mitigation (management) measures for those heritage resources which may be affected by the project.

The extension of the Tuschenkomst Open Pit requires that the opencast mining activities being extended onto the adjacent farms Wilgespruit 2JQ and Rooderand 46JQ and therefore into an easterly and a southerly direction whilst the existing WRD has to be extended westwards along the farm Tuschenkomst 135JP onto stone walled sites along the eastern base of Patswane and into a conceptualised cultural landscape situated between Mogare, Matone and Patswane.

Possible impact on the heritage resources

The eastern and southern extension of the open cast pit onto Wilgespruit 2JQ and Rooderand 46JQ will not have any influence on any heritage resources in this part of the PPM Project Area.

However, the western extension of the current WRD along Tuschenkomst 135JP will have an influence on the cultural landscape and sites in this cultural landscape. Sites PTS01 and PTS02 along the eastern perimeter of Patswane will be destroyed (covered) by the extended WRD whilst the cultural landscape will be affected as a result of the extended WRD penetrating into this landscape and therefore affecting the intangible heritage components and the sense of place associated with the cultural landscape.

The significance of the heritage resources

The significance of the sites and the cultural landscape can be described as high when considering criteria such as the following (Pistorius 2006c):

- The mountains of Matone, Mogare and Patswane (as well as others such as Mukukunupu, Mabjaneng and Motsosodi outside the current PPM Project Area) are historical beacons, as they are associated with human occupation during the last three hundred and fifty to four hundred years.
- The complexes of sites associated with these mountains represent different villages which were occupied simultaneously by thousands of people who lived in these villages from pre-historical times (AD1650) well into the historical period (AD1850). (According to a reliable spokesperson, the village of Mabjaneng was still occupied during the Anglo Transvaal War [1899-1902]).
- The villages and the surrounding landscape represent a 'cultural landscape or townscape' which is unique, as it reflects a regional history, in particular that of the Kgatla and the impact of Mzilikazi's Ndebele on this clan.
- This townscape reflects intangible heritage attributes such as a sense of place, the majesty of mountains associated with the social (political) importance of rulers, activity areas which served as pastures for stock, wood and water collecting spots, possible places of sacrifice and worship.
- These site complexes are unique in the context of the Late Iron Age, as they contain settlements that are characteristic of Tswana, Zulu (Ndebele) and mixed Tswana/Zulu (Ndebele) populations.
- It seems, according to archaeological observations and historical information, that some settlements in these village complexes may have been occupied, temporarily at least, by Mzilikazi's Ndebele (Matabele) from AD1827 to AD1832. (At least four other village complexes between Pretoria and Rustenburg have been occupied by

Mzilikazi's Ndebele. The Pilanesberg complex therefore may represent a fifth Ndebele complex).

- The four villages are in an excellent (pristine) condition and have not been affected by any development in the past. (This is in contrast with numerous other Late Iron Age sites which have been affected in one way or another by mining or other development activities in the North-West).
- These sites offer outstanding research opportunities, as they represent archaeological 'laboratories' which can be utilised for decades to come. Tangible heritage remains in the form of artefacts, structures and features are in abundance in the archaeological deposits that are associated with the sites.
- The village complexes offer exceptional educational and tourism potential, if they are developed according to scientific and museum principles and guidelines.

Mitigating the heritage resources

The following mitigation measures are proposed for sites PTS01 and PTS02 that will be covered (destroyed) by the WRD as well as for the cultural landscape as this feature will be penetrated by the extended WRD.

The sites in the cultural landscape

Sites PTS01 and PTS02 must be subjected to Phase 2 archaeological investigations. This means that the sites have to be surveyed, excavated and documented. Archaeological material that is retrieved from these sites must be analysed, dated and interpreted. After the archaeological material have been studied in laboratories it must be treated, accessed in registers and curated at a declared institution (museum) in South Africa. The results of the Phase II investigation must be published in a report that must be prepared for the South African Heritage Resources Authority (SAHRA) who then will authorise the destruction of the stone walled sites.

The cultural landscape

It is recommended that PPM maintains and promotes its existing Cultural Heritage Management Program (CHMP). This will ensure that heritage resources in the mine lease area are conserved according to national and international guidelines for heritage management. This program will also enhance PPM's commitment towards natural and

heritage conservation whilst also contributing to the mine's social (community) obligations and the mine's closure plans.

PPM is located in the heartland of the proposed Pilanesberg Heritage Corridor and in close proximity of the Pilanesberg Nature Reserve, a natural and cultural resource of international significance. The archaeological remains in PPM therefore are part of a wider sphere of natural and cultural significance which demand specific requirements for conservation. Those living and working in the heritage corridor will inevitably be drawn into the protection, promotion and utilization of the region's natural and cultural heritage. PPM's responsibility towards communities and the natural and cultural heritage will increase rather than diminish as time passes. Environmental and heritage management has become an integral part of 'progressive' mining world-wide. PPM's obligation towards this end will last as long as the mine is operational and will reach fruition when the mine implements its closure objectives.

General

It is possible that this Phase I HIA study may have missed heritage resources in the PPM Project Area as heritage sites may occur in 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 the project 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 notified 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.

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1 INTRODUCTION

As part of a joint venture agreement, the Itereleng Bakgatla Mineral Resources (Pty) Ltd (IBMR), Pilanesberg Platinum Mines (Pty) Ltd and Richtrau No 123 (Pty) Ltd (Richtrau) proposed to develop three separate projects that could function as a combined mining operation situated to the north of the Pilanesberg National Park in the Moses Kotane Local Municipality, of the Bojanala Platinum District Municipality in the North West Province. The mining operation will include three mining areas, namely the operational Pilanesberg Platinum Mine (PPM), the approved and currently developing Sedibelo Platinum Mine (Sedibelo), and the proposed Magazynskraal Mine (Magazynskraal).

This report only focuses on Pilanesberg Platinum Mine's (PPM) proposed expansion of its existing opencast platinum mining operation on the farms Tuschenkomst 135JP and Witkleifontein 136JP. It is proposed that the existing pit on the farm Tuschenkomst be extended eastwards and southwards onto the farms Wilgespruit 2JQ and Rooderand 46JQ and the Waste Rock Dump (WRD) further westwards on Tuschenkomst 135JP entering a conceptualised cultural landscape demarcated between the mountains Mogare, Mmatone and Phatswane. The mining right is held by Boynton Investments (Pty) Ltd.

This document therefore contains the report on a Phase I Heritage Impact Assessment (HIA) study which was done for the PPM's proposed expansion of its existing opencast pit.

The North-West Province of South Africa has a rich heritage comprised of remains dating from the pre-historic and from the historical (or colonial) periods of South Africa. Pre-historic and historical remains in the North-West Province present 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' (outlined in Section 3 of the National Heritage Resources Act, Act No 25 of 1999) occur in this region (see Box 1).

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

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

- (a) places, buildings structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites;
- (g) graves and burial grounds including-
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the Gazette;
 - (v) historical graves and cemeteries; and
 - (vi) other human remains which are not covered in terms of the Human Tissue Act (Act 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) moveable objects, including -
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, material, meteorites and rare geological specimens;
 - (ii) objects to which oral traditions are attached or which are associated with living heritage;
 - (iii) ethnographic art and objects;
 - (iv) military objects;
 - (v) objects of decorative or fine art;
 - (vi) objects of scientific or technological interest; and
 - (vii) books, records, documents, photographs, positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act (Act 43 of 1996).

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

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

2 AIMS OF THIS REPORT

PPM's proposed expansion of its existing opencast pit may have an effect on any of the types and ranges of heritage resources which are outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) as some of these resources may occur in the area where the proposed expansion of the open cast mine will take place.

Therefore, SLR Consulting (Africa) (Pty) Ltd, the environmental company responsible for compiling the Environmental Impact Assessment (EIA) for the project, commissioned the author to conduct a Phase I Heritage Impact Assessment (HIA) study for the PPM Project with the following aims, namely:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (Box 1) do occur in the PPM Project Area and, if so, to determine the nature, the extent and the significance of these remains.
- To determine whether such remains will be affected by the proposed PPM Project and, if so, to determine appropriate mitigation (management) measures for those heritage resources which may be affected by the project.

3 METHODOLOGY

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

- Considering and evaluating data collected during earlier surveys for the PPM (previously Boynton Platinum) (see 'Select Bibliography', Part 8).
- Surveying literature relating to the pre-historical and historical context of the Pilanesberg region.
- Surveying with a vehicle and on foot the proposed PPM Project Area.
- Synthesising the information obtained from the activities outlined above in this report.

3.1 Earlier data

Several Phase I HIA studies were done for the PPM during the last decade. The results of these studies were published in the following reports:

- Pistorius, J.C.C. 2006a. *A Phase I Heritage Impact Assessment (HIA) study for Boynton Platinum's new proposed mining areas near the Pilanesberg in the North-West Province of South Africa*. Unpublished report prepared for Metago Environmental Engineers.
- Pistorius, J.C.C. 2006b. *An extended Phase I Heritage Impact Assessment (HIA) study for Pilanesberg Platinum Mines (PPM) new proposed mining areas near the Pilanesberg in the North-West Province of South Africa*. Unpublished report prepared for Metago Environmental Engineers.
- Pistorius, J.C.C. 2006c. *A Phase I Heritage Impact Assessment (HIA) study for Boynton Platinum's new proposed mining areas near the Pilanesberg in the North-West Province of South Africa*. Unpublished report prepared for Metago Environmental Engineers (combination of first two studies).
- Pistorius, J.C.C. 2009. *A Phase I Heritage Impact Assessment (HIA) study for Pilanesberg Platinum Mine's (PPM) proposed rock waste dump extension near the Pilanesberg in the North-West Province of South Africa*. Unpublished report prepared for Pilanesberg Platinum Mine.

- Pistorius, J.C.C. 2010. *Brief report on heritage matters at Pilanesberg Platinum Mine*. Unpublished report prepared for Pilanesberg Platinum Mine.
- Pistorius, J.C.C. 2011. *A Phase I Heritage Impact Assessment (HIA) study for Pilanesberg Platinum Mine's (PPM) proposed amendment of the closure objectives of the Tuschenkomst Open Pit and community water supply scheme near the Pilanesberg in the North-West Province*. Unpublished report prepared for Pilanesberg Platinum Mine.

3.2 Literature survey and maps

Literature relating to the pre-historical and the historical unfolding of the Pilanesberg area was reviewed. This review focused on local Tswana groups such as the Kgatla Kgafêla and the Tlhako who live along the northern perimeters of the Pilanesberg. (The history of the origins of the Tlôkwa who live slightly further to the west of the Pilanesberg was not reviewed). The presence and influence of Mzilikazi of the Ndebele in the Pilanesberg was also emphasised, as some of the remains found in the PPM Project Area may be associated with the Ndebele).

It is important to contextualise the pre-historical and historical background of the Pilanesberg area in order to comprehend the identity and meaning of heritage sites which occur in and near the PPM Project Area (see Parts 4 & 8).

In addition, the project and wider area were also studied by means of the 1:50 000 topographical maps on which the proposed development occur (2527AA Saulspoort, 1:50 000).

3.3 Fieldwork

The PPM Project Area covers part of the farms Wilgespruit 2JQ and Rooderand 46JQ to the north of the Pilanesberg and to the east and south of the existing

opencast pit. The PPM Project Area was surveyed with a vehicle while sensitive spots were surveyed on foot.

3.4 Limitations of the study

It is possible that this Phase I HIA study may have missed heritage resources in the PPM Project Area as heritage sites may occur in 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 the project 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.

3.5 Some remarks on terminology

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

- **Conservation:** The act of maintaining all or part of a resource (whether renewable or non-renewable) in its present condition in order to provide for its continued or future use. Conservation includes sustainable use, protection, maintenance, rehabilitation, restoration and enhancement of the natural and cultural environment.
- **Cultural resource management:** A process that consists of a range of interventions and provides a framework for informed and value-based decision-making. It integrates professional, technical and administrative functions and interventions that impact on cultural resources. Activities

include planning, policy development, monitoring and assessment, auditing, implementation, maintenance, communication, and many others. All these activities are (or will be) based on sound research.

- Cultural resources: A broad, generic term covering any physical, natural and spiritual properties and features adapted, used and created by humans in the past and present. Cultural resources are the result of continuing human cultural activity and embody a range of community values and meanings. These resources are non-renewable and finite. Cultural resources include traditional systems of cultural practice, belief or social interaction. They can be, but are not necessarily identified with defined locations.
- Heritage resources: The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. 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.
- In-Situ Conservation: The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.
- 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.
- Maintenance: Keeping something in good health or repair.

- 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 PPM Project Area, to the first appearance or use of 'modern' Western writing brought to the Eastern Highveld by the first Colonists who settled here from the 1840's onwards.
- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.
- 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.
- Protected area: A geographically defined area designated and managed to achieve specific conservation objectives. Protected areas are dedicated primarily to the protection and enjoyment of natural or cultural heritage, to the maintenance of biodiversity, and to the maintenance of life-support systems. Various types of protected areas occur in South Africa.
- Reconstruction: Re-erecting a structure on its original site using original components.
- Replication: The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, object, or a part thereof, as it appeared at a specific period.
- Restoration: Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components.

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

4 THE PILANESBERG PLATINUM MINE PROJECT AREA

4.1 Location

The PPM is located on several farms to the north of the Pilanesberg Nature Reserve in the Moses Kotane local municipality of the Bojanala district municipality in the North-West Province (2527AA Saulspoort, 1:50 000) (Figure 1). This part of the North-West Province, from a heritage point of view, is amongst others characterised by large numbers of stone walled sites which can be associated with Late Iron Age and historical Tswana and Nguni speaking communities. Descendants of these extinct communities today still live in the Pilanesberg region.

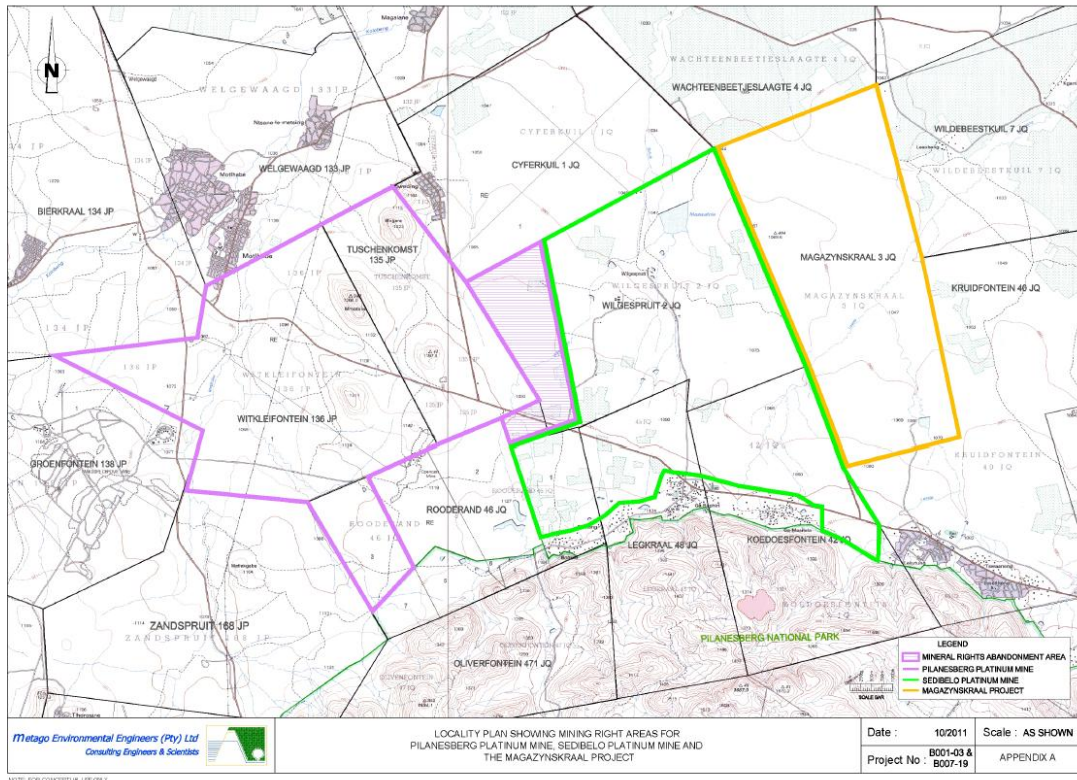


Figure 1- The Pilanesberg Platinum Mine (purple demarcation) covers several farms to the north of the Pilanesberg in the North-West Province (above).

The extension of the Tuschenkomst Pit requires that the opencast mining activities being extended onto the adjacent farms Wilgespruit 2JQ and Rooderand 46JQ and therefore into an easterly and a southerly direction whilst the existing WRD has to be extended westwards along the farm Tuschenkomst 135JP onto stone walled sites along the eastern base of Patswane and into a conceptualised cultural landscape situated between Mogare, Matone and Patswane.

The proposed extension of the opencast mining area (eastwards and southwards) as well as the extension of the existing WRD (westwards) is hereafter referred to as the PPM Project whilst the areas to be affected by the extension of the opencast mining pit and the WRD is referred to as the PPM Project Area.

4.2 In a natural and cultural landscape

The PPM Project Area is located near the Pilanesberg which is a unique natural landmark and therefore forms part of South Africa's natural heritage. This complex of mountains consists of an eroded circular alkaline volcanic structure, 1 250 million years old, in the low-lying Bushveld Complex. This extinct volcano is 27km in diameter and it is surrounded by six rings of mountains. The result is a circular mountainous region which stands in stark contrast to the surrounding open plains, creating a unique enclave for human occupation and utilisation from the earliest times. During the Late Iron Age, access to the Pilanesberg was controlled by well-positioned and extensive settlements near the periphery of this circular mountain range, close to some of the entrances leading to the pathway-like valleys which criss-cross the central part of the Pilanesberg.

The Pilanesberg National Park was developed in and around this extinct volcano and covers a surface of 500km². The park was opened in 1979 and it now contains examples of most southern African mammals and some 300 bird species. The central feature of the park is a man-made lake known as Mankwe on the river by the same name.

Sun City, on the southern edge of the Pilanesberg, was the first of several casinos and holiday resorts to be established in South African soon after the Bophuthatswana homeland was granted independence in 1977. The complex incorporates the Superbowl, a huge concert area, four luxury hotels, including the Palace of the Lost City, as well as many sporting and gambling facilities and an artificial beach, the Valley of the Waves.

Stone walled sites dating from the Late Iron Age and historical period have been recorded around the base line of mountains such as Mogare, Matone and Patswane as well as along the base of Mukukunupu which is located to the south of these three mountains on the farms Witkleifontein 136JP and Tuschenkomst 135JP during earlier heritage studies. Large, single stone walled sites were also recorded at isolated kopjes such as Motsotsodi and Mabjaneng in close proximity of these four mountains (Pistorius 2006a & 2006b).

All these sites were geo-referenced and mapped and it was indicated in the studies that these sites have high archaeological, historical and cultural significance and that they should be conserved, particularly in view of the establishment of the envisaged Pilanesberg Heritage Corridor (Pistorius 2009). The high occurrence of sites along the base lines of Mogare, Matone and Patswane consequently lead to the demarcation of a conceptualised triangular-shaped cultural landscape between these mountains with the aim to prevent development from taking place in this landscape and to conserve the archaeological remains which may be utilised in the future envisaged Pilanesberg Heritage Corridor (Figure 2).

The cultural and historical context of this cultural landscape and the PPM Project Area is outlined in Part 5, 'Contextualising the PPM Project Area' of this report.

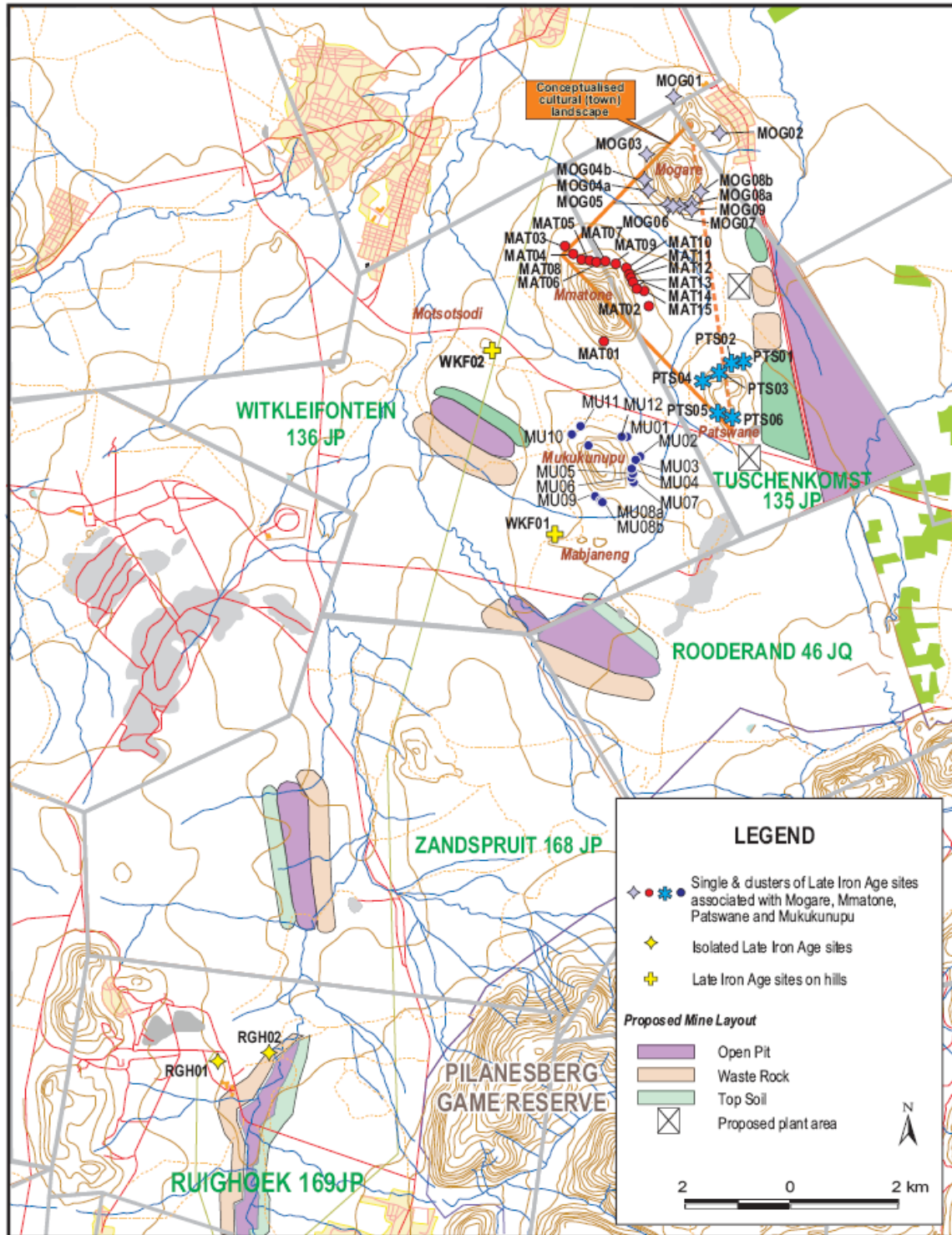


Figure 2- Stone walled sites dating from the Late Iron Age on isolated hills and on spurs and slopes of large mountains such as Mmatone, Mogare, Patswane and Mukukunupu in the Pilanesberg Platinum Mines Project Area. These settlements were occupied by Tswana, Zulu (Ndebele) and mixed populations of Tswana and Ndebele populations.

5 CONTEXTUALISING THE PILANESBERG PLATINUM MINE PROJECT AREA

A brief overview of pre-historical and historical information is provided below to contextualise the broader PPM Project Area in order to help to determine the significance of any heritage resources that may occur in the PPM 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 that are part of deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (the period from 2.5 million years ago to 250 000 years ago), the Middle Stone Age (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 about 2 000 years ago).

These three Stone Ages can be divided into different 'cultural' periods, each of which is characterised by specific hominids, artefact types and lifestyles. These cultural periods existed under different climatic conditions and did not necessarily cover the same periods in different regions of South Africa.

A few isolated, haphazardly scattered stone tools were observed throughout the Pilanesberg Platinum Mines PPM Project Area. These tools date from the Middle Stone Age and include two Mousterian cores, a blade and an end scraper. These stone tools were not geo-referenced, as they were too limited in number.

The Late Stone Age is associated with rock paintings and engravings done by the San, Khoi Khoi and, in more recent times, by Negroid (Iron Age) farmers. More than one spokesperson told the author that there are caves higher up Mmatone Mountain. Such phenomena, if they do exist, may contain stone tools dating from

the Stone Age, Late Iron Age remains and even rock paintings. A few rock paintings have already been recorded in the Pilanesberg.

5.2 Late Iron Age remains

The Pilanesberg area is dominated by stone walled sites that date from the Late Iron Age, some of which were occupied into the historical period. These sites are associated with Tswana groups such as the Kgatla Kgafêla, the Tlhako, the Tlôkwa and Nguni-affiliated clans who were either living in the area from an earlier time, before the Sotho-Tswana arrived, or who were descended from Mzilikazi's Ndebele who temporarily occupied several settlement complexes in the area before they moved to the Zeerust-Marico area in AD1832. Large numbers of the descendants of these original Nguni-speaking people today live in Groenfontein, Rhenosterhoek and Kraalhoek, to the north of the PPM Project Area.

The following contextual evidence serves as background to the PPM Project Area: the origins of the Kgatla group; the history of the Kgatla Kgafêla and the Tlhako; the arrival of the first colonists and early chrome mining in the area.

5.2.1 Origins of the Kgatla group

The ancestral Kgatla were composed of the Kgatla, the Tlôkwa, the Makgolokwe and probably the Bahlakwana and the Basia sections. (The latter three clans no longer exist). The Kgatla also maintained that there was an early relationship with the Hurutshe (under common chiefs such as Malekele-Masilo-Legabo) which may date back to AD1450 when the Hurutshe and Kwena separated. These earliest Kgatla groups initially lived in the central part of the former Transvaal province, somewhat to the south of what is today Thabazimbi, near the Rooiberg Tin Mines.

Phohoti, the son of Mokgatle, is usually regarded as the first Kgatla chief. His son and successor was Botlholo (Mashiasebara), whose sons Mogale, Pule and Modise split up. Pule initially ruled on behalf of Mogale's son Moseitlha, who died before he could succeed, and this encouraged Pule (whose son Masego died before his father) to leave the tribe and to form a separate tribe under his grandson Kgafele. The Botlholo's third son, Modise, and his son Tabane were the forefathers of the sections of the Mmakau, the Motša and the Seabe.

Today there are numerous subsections of the Kgatla. In 1953, a leading anthropologist distinguished at least eleven tribes within this group.

The totem of the Kgatla is the blue monkey (*kgabo*), although they also had another totem, the 'kgabo ya mollo', or the 'tip of the flame', which they used when the Kgatla were on the warpath.

Mogale, the ancestor of the Moseitlha, lived at a place called Dirolong/Direleng in the Bela Bela area (some say in the Rustenburg area). Mogale (Moseitlha) or Mashego (Kgafela) moved to Momuseng (the old Makapans Location). Towards the end of the 17th century, the Kgafela section broke away under Mahego (the son of the regent, Pule). However, Kgafela and his son Tebele remained east of the Crocodile River and Kgafela's grandson Masellane moved to Molokwane ('Vlieggepoort') near the confluence of the Crocodile and Pienaars Rivers. (This split was the result of a dispute whether Moseitlha, a woman, should rule the tribe). This was also the time when Tabane (the Mmakau section) broke away and settled at Mogwete (Varkfontein, in the Premier Mining area).

While the Kgatla Moseitlha remained one section, Tabane's branch later broke up into several tribes. Modise or Moptsha had a young wife who left the tribe while she was pregnant, as she was accused of witchcraft, saying that her child was crying in her womb. It was called 'lelela teng' ('crying inside'). This child later became the great Pedi chief Thulare, who was also called 'Thulare a Mmakau'.

Further divisions of the Kgatla were caused by internal strife during the time of Mzilikazi.

5.2.2 Brief history of the Kgatla Kgafêla and the Tlhako

After the Kgafêla broke away from the Mosetlha at Momusweng (Makapans Location, Hammanskraal), probably during the first half of the 17th century, they settled in various places on their way to the north-west and the Crocodile River. Known places of settlement were Ntuane (to the north-west of Makapans Location near the Pienaars River), Momoseu (near Ntwane), and Tshekane (Leeuwpoot, south of the Rooiberg Tin Mine). Tshekane proved to be unhealthy, so they dwelt at Matone (Tuschenkomst) for a while and then settled at Molokwane ('Vlieggepoort', at the confluence of the Crocodile and Pienaars Rivers) near Ramakokas Location.

At the start of the 18th century, they lived at Mabule, Kruidfontein (near Saulspoort). During the first half of the 18th century, Kgwefane lived at Saulspoort in the Dithubaruba section of Moruleng. Molefe lived at Maramapong at Saulspoort. Towards the end of the 18th century, Phetso lived at Sefikile (Spitskop, 8km to the west of Northam). Letsebe ruled at Mabule (Kruidfontein) at the confluence of the Modderkuil and Middelkuil. When Senwelo was invested as chief, he moved from Mabule to Tlokwane (Rhenosterkop). Motlotle ruled at Magakwe or Dithubarubu (Kruidfontein).

Pilane built his village at Monamaneng (Kafferskraal). Later he moved to Bogopana (Witfonteinrand), to the north-east of Witfontein, and from there to Mmamodimokwana (Schilpadsnest) near the Crocodile River.

After the Matabele invasion in 1827, Pilane went to live at Motsitle (Mabeskraal). After 1837, he settled at the Elands River at Mmasebudule (Rhenosterfontein).

During the Matabele invasion, the Kgatla were too weak to defend themselves. Consequently, they paid a tribute to the Ndebele. Nevertheless, their villages were destroyed and the young men were incorporated into the Ndebele army. After the Ndebele had left the Pilanesberg area in 1832, Ndebele raiders returned to the area and took three of Pilane's sons with them in 1842. Molefi, Pilane's uncle, negotiated their release. Molefi, who maintained good relations with the Ndebele, took charge of the tribe when Pilane fled to the Langa Ndebele.

The far northern part of Kgatla territory, incorporating the farms Holfontein, Cyferfontein and Rhenosterkraal, was a separate tribal section for some years under the authority of a sub-chief, Dikema Pilane. He played an important role in the times of Paul Kruger. It was also in this far northerly area that the descendants of one of Mzilikazi's sons lived.

Kgamanyana lived at Moruleng, the present tribal headquarters at Saulspoot. In 1869, Kgamanyana and many tribesmen left the country to settle at Mochudi, on the banks of the Nkgotwane River in Botswana, after camping one year at Tshwene-Tshwene (near Vleesfontein). The other part of the tribe remained at Saulspoot and acquired most of the farms to the north of the Pilanesberg.

Many of these Tswana clans were uprooted during the *difaqane* when Mzilikazi's Matabele (Ndebele) entered the North-West Province, crossing the Magaliesberg at Mpame (Kommandonek) in the middle of August 1832.

From this brief historical overview, it is clear that the mountain Mmatone was occupied by the Kgatla, while the Pilanesberg Platinum Mines PPM Project Area to the north of the Pilanesberg covers much of the sphere of influence of one section of the Kgatla. This group probably intermarried with Mzilikazi's Ndebele, especially given that some of his sons remained in the area after the Ndebele moved westwards. Descendants of this mixed Ndebele/Tswana population still live in the area today. A similar situation occurred to the north of Rustenburg,

south of Phokêng, where the Ndebele intermarried with their Tswana neighbours, the Fokeng.

The Tlhako is one of the numerous Nguni-related clans who lived in the central part of the former Transvaal province from early on. They branched off from the Ndzundza-Ndebele who lived near what is today the Premier Mine (Cullinan, Mangolwana) and Wonderboom (Pretoria). Thereafter they dwelt in the Boshhoek (Pharami) area for some time, before settling along the Thulani River near Pella towards the end of the 17th century.

Chief Seutlwane settled on the northern slope of Pilwe Mountain. His son, Mabe, who lived about the middle of the 18th century, moved six kilometres further to the north to Mothoutlung on the eastern part of Palmietfontein. Mabe's youngest son, Motsisi, went to live at Legatalle, to the north-east of Ruighoek 426, where he became involved with a long struggle with the Kgatla Kgafêla. His son, Molotsi, also lived and died at Legatalle, probably around AD 1820 to 1830.

Mabe became chief in 1820 and settled at Motsitle, today known as Mabieskraal. When Mzilikazi invaded the region, the Tlhako did not leave the area, but were subjugated by the Ndebele. Many of the Tlhako later accompanied the Ndebele and crossed the Marico River to settle with the Ndebele at Silkaatskop. However, when the Ndebele were defeated by the Voortrekkers in the far North-Western Transvaal, many returned to their old home at Motsitle in 1837.

Maabe and the Voortrekkers' relationship deteriorated. After he was flogged by the Boers in c 1860, the tribe moved to Molepolole and settled at Magagarape, where Maabe died in 1869. His sons Moetle, Mokgatele, Leotwane and Setadi returned to Mabieskraal.

Moetle Mabe became chief in 1870. He raided the cattle of the local white farmers and also supplied labour to surrounding white farmers. He died on 15 May 1908.

The Tlhako's sphere of influence overlaps the southern and western parts of the Pilanesberg Platinum Mines. Stone walled sites on Ruighoek 169JP can therefore possibly be associated with this group.

5.3 Arrival of the first colonists

During the first half of the 19th century, the first colonial traders who operated between the far north-west and the central part of the Bankeveld used the gap between the northern tip of the Magaliesberg and the south-western edges of the Pilanesberg, near the Pilanesberg Platinum Mines, as a corridor. Wagons passed through this corridor on their way to Rustenburg and further to the east. Several traders, missionaries, a scientific expedition and adventurers trekked between the Magaliesberg and the Pilanesberg and they observed numerous Late Iron Age communities living in this part of the north-west.

Rustenburg, to the far south of the PPM, was the first colonial town to be established by Europeans (Voortrekkers) during the first half of the 19th century. Closer to Pilanesberg, Boshhoek was established along the railway line from Pretoria, and the town initially served as a terminus.

5.4 Early chrome mining

It has long been known that there were chrome ores in the Bushveld Igneous Complex. They were indicated on Carl Mauch's geological map of the area close to the Hex River near Rustenburg, which he visited in 1865. Chromite is also mentioned in official reports that were compiled by a certain Molengraaf. The first

exploration for chrome occurred in 1917, and general production of the metal began in 1924, when 4 570 tons were mined.

Chromite is present in the Bushveld Igneous Complex as layers in the piroxinite, norite and anorthosite units and to a certain extent also in the harzburgiet unit. The deposits in the Complex can be divided into a Western Zone and an Eastern Zone.

The deposits in the Western Zone stretch for approximately 200km from Brits to Rustenburg, further northwards to the west of the Pilanesberg, and from there, with some interruptions of seven to thirteen kilometres, to near the Crocodile River. The Eastern Complex starts near Draaikraal at the upper reaches of the Dwars River in the Lydenburg district. Further northwards the deposit crosses the Steelpoort River near the Steelpoort station and gradually turns north-westwards as far as Scheiding – a total distance of 120 kilometres.

The Western Zone can be divided into four sections, namely a sector to the north of Rustenburg, two sectors to the west and to the north of the Pilanesberg, and a sector in the Brits-Rustenburg area.

The sector to the west of the Pilanesberg seems to have been exploited the most. Here two distinct layers were distinguished, namely the Groenfontein layer and the Main Layer higher up in the sequence. These layers vary in thickness on farms such as Palmietfontein 208JP, Groenfontein 138JP and Ruighoek 169JP.

By the start of 1974, seventeen chrome mines were already operating: eight in the Western Zone, six in the Eastern Zone, two in Marico and one near Mokopane.

6 THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY (HIA)

6.1 Types and ranges of heritage resources

The Phase I HIA study for the PPM Project Area is briefly described and illustrated with a few photographs.

6.1.1 The eastern and southern extension of the open cast pit

The extension of the Tuschenkomst Pit requires that the opencast mining activities be extended onto the adjacent farms Wilgespruit 2JQ and Rooderand 46JQ, and therefore into an easterly and a southerly direction (Figures 3-8).

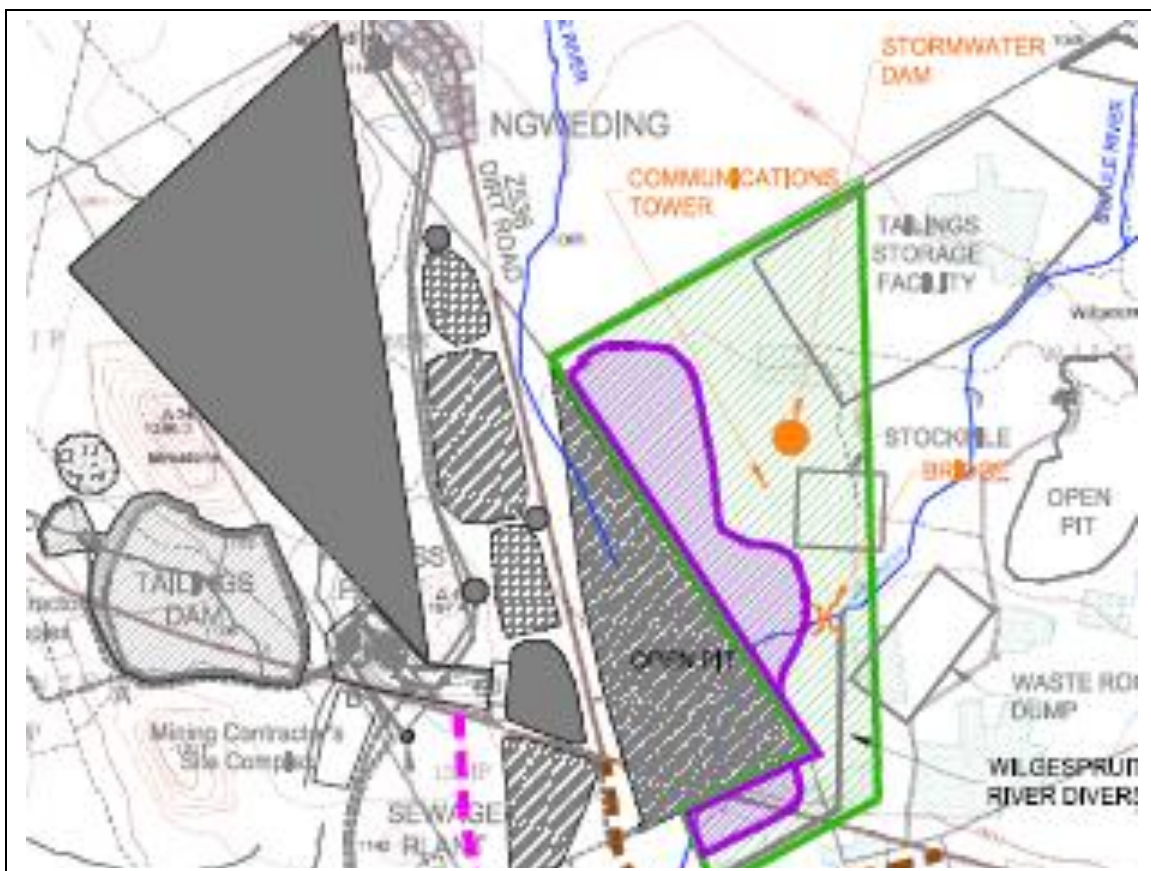


Figure 3- The PPM Project Area (shaded in blue) involves the extension of the existing Tuschenkomst pit eastwards onto Wilgespruit 2JQ and southwards onto Rooderand 46JQ (above).



Figures 4 & 5- The extension of the Tuschenkomst pit onto Wilgespruit 2JQ stretches across a flat, featureless plain with natural bush (above) which has been cleared in places to make way for agricultural fields some of which now have been abandoned by the farmers (below).





Figures 6 & 7- Evidence for the more recent occupation of Wilgespruit 2JQ such as this heap of clay which represents the remains of a collapsed house do occur (above). The eastern extension of the Tuschenkomst pit enters the abandonment mineral area where the Wilgespruit has been deviated (below).





Figure 8- The extension of the opencast pit onto Rooderand 46JQ occurs on a scarred piece of land with on-going mining activities (above).

6.1.2 The western extension of the Waste Rock Dump

The PPM Project also requires that the existing WRD be extended westwards on Tuschenkomst 135JP and onto stone walled sites along the eastern perimeter of Patswane and into a conceptualised cultural landscape (Figures 2, & 9-11). The cultural landscape comprises two geographical components. The flat area between Mogare, Matone and Patswane which is associated with aspects of heritage which left little or no remains, e.g. subsistence practises such as grazing fields for cattle and small stock, agricultural fields, spots for the collecting of fire wood and water as well as symbolic activities involving ritual, religion and initiation. The flat area is mainly associated with intangible aspects of heritage as well as with the sense of place. The base lines and spurs of mountains are associated with the stone walled sites which were occupied by a population which numbered thousands of individuals who lived here during the 17th century to the mid-19th century AD.

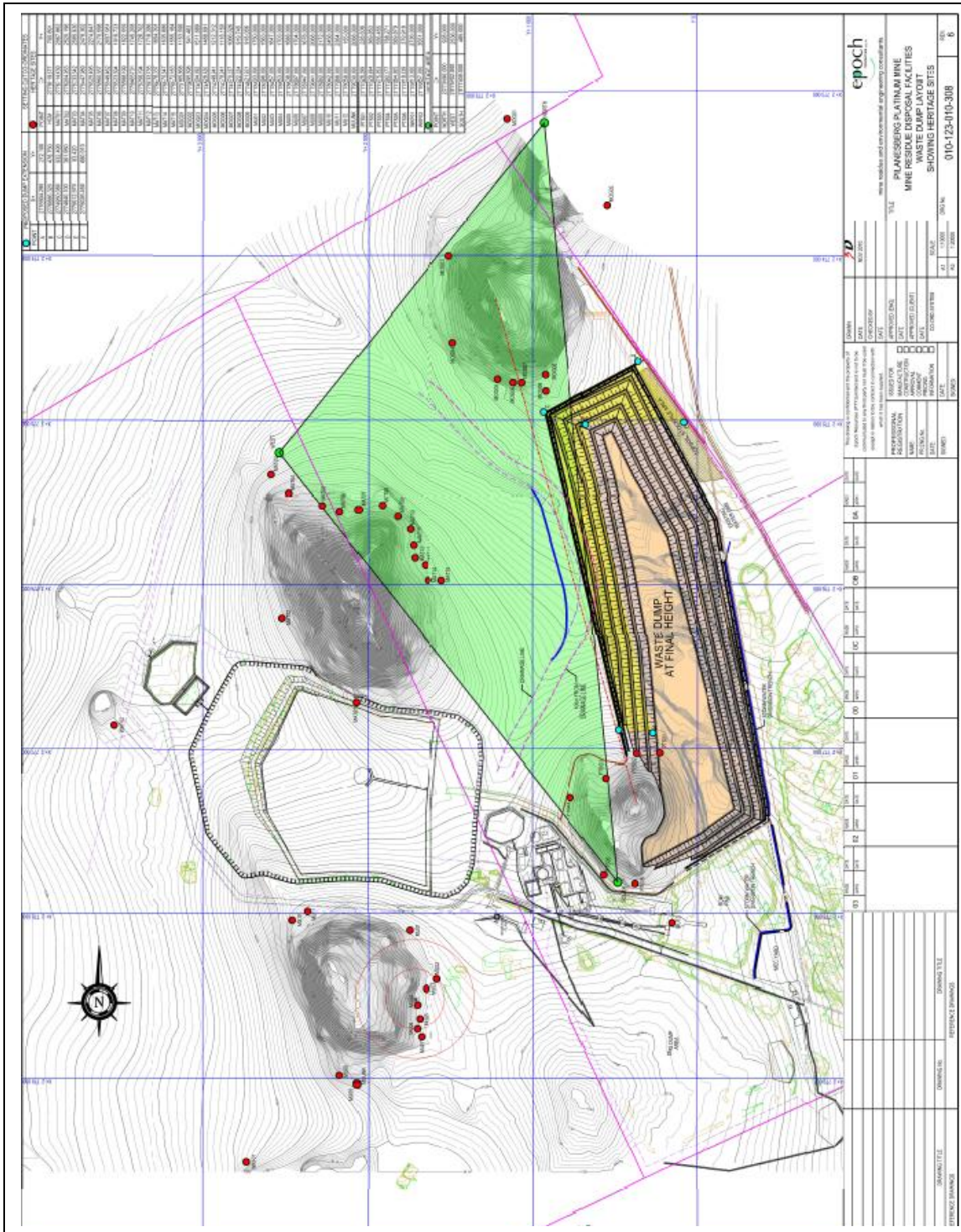


Figure 9- The extension of the WRD (yellow shaded) westwards on Tuschenkomst 135JP onto sites along the eastern perimeter of Patswane (PTS01, PTS02) and into a conceptualised cultural landscape situated between Matone, Mogare and Patswane (above).



Figures 10 & 11- A conceptualised cultural landscape between Mogare, Patswane and Matone is home to numerous Late Iron Age stone walled sites (above). When the current WRD (in the background) is extended it will cover sites such as PTS01 and PTS02 (below).



6.2 Possible impact on the heritage resources

The eastern and southern extension of the open cast pit onto Wilgespruit 2JQ and Rooderand 46JQ will not have any influence on any heritage resources in this part of the PPM Project Area.

However, the western extension of the current WRD along Tuschenkomst 135JP will have an influence on the cultural landscape and sites in this cultural landscape. Sites PTS01 and PTS02 along the eastern perimeter of Patswane will be destroyed (covered) by the extended WRD whilst the cultural landscape will be affected as a result of the extended WRD penetrating into this landscape and therefore affecting the intangible heritage components and the sense of place associated with the cultural landscape.

6.3 The significance of the heritage resources

The significance of the sites and the cultural landscape can be described as high when considering criteria such as the following (Pistorius 2006c):

- The mountains of Matone, Mogare and Patswane (as well as others such as Mukukunupu, Mabjaneng and Motsosodi outside the current PPM Project Area) are historical beacons, as they are associated with human occupation during the last three hundred and fifty to four hundred years.
- The complexes of sites associated with these mountains represent different villages which were occupied simultaneously by thousands of people who lived in these villages from pre-historical times (AD1650) well into the historical period (AD1850). (According to a reliable spokesperson, the village of Mabjaneng was still occupied during the Anglo Transvaal War [1899-1902]).
- The villages and the surrounding landscape represent a 'cultural landscape or townscape' which is unique, as it reflects a regional history, in particular that of the Kgatla and the impact of Mzilikazi's Ndebele on this clan.

- This townscape reflects intangible heritage attributes such as a sense of place, the majesty of mountains associated with the social (political) importance of rulers, activity areas which served as pastures for stock, wood and water collecting spots, possible places of sacrifice and worship, etc.
- These site complexes are unique in the context of the Late Iron Age, as they contain settlements that are characteristic of Tswana, Zulu (Ndebele) and mixed Tswana/Zulu (Ndebele) populations.
- It seems, according to archaeological observations and historical information, that some settlements in these village complexes may have been occupied, temporarily at least, by Mzilikazi's Ndebele (Matabele) from AD1827 to AD1832. (At least four other village complexes between Pretoria and Rustenburg have been occupied by Mzilikazi's Ndebele. The Pilanesberg complex therefore may represent a fifth Ndebele complex).
- The four villages are in an excellent (pristine) condition and have not been affected by any development in the past. (This is in contrast with numerous other Late Iron Age sites which have been affected in one way or another by mining or other development activities in the North-West).
- These sites offer outstanding research opportunities, as they represent archaeological 'laboratories' which can be utilised for decades to come. Tangible heritage remains in the form of artefacts, structures and features are in abundance in the archaeological deposits that are associated with the sites.
- The village complexes offer exceptional educational and tourism potential, if they are developed according to scientific and museum principles and guidelines.

6.4 Mitigating the heritage resources

The following mitigation measures are proposed for sites PTS01 and PTS02 that will be covered (destroyed) by the WRD as well as for the cultural landscape as this feature will be penetrated by the extended WRD.

6.4.1 The sites in the cultural landscape

Sites PTS01 and PTS02 must be subjected to Phase 2 archaeological investigations. This means that the sites have to be surveyed, excavated and documented. Archaeological material that is retrieved from these sites must be analysed, dated and interpreted. After the archaeological material have been studied in laboratories it must be treated, accessed in registers and curated at a declared institution (museum) in South Africa. The results of the Phase II investigation must be published in a report that must be prepared for the South African Heritage Resources Authority (SAHRA) who then will authorise the destruction of the stone walled sites.

6.4.2 The cultural landscape

It is recommended that PPM maintains and promotes its existing Cultural Heritage Management Program (CHMP). This will ensure that heritage resources in the mine lease area are conserved according to national and international guidelines for heritage management. This program will also enhance PPM's commitment towards natural and heritage conservation whilst also contributing to the mine's social (community) obligations and the mine's closure plans.

PPM is located in the heartland of the proposed Pilanesberg Heritage Corridor and in close proximity of the Pilanesberg Nature Reserve, a natural and cultural resource of international significance. The archaeological remains in PPM therefore are part of a wider sphere of natural and cultural significance which demand specific requirements for conservation. Those living and working in the heritage corridor will inevitably be drawn into the protection, promotion and utilization of the region's natural and cultural heritage. PPM's responsibility towards communities and the natural and cultural heritage will increase rather than diminish as time passes. Environmental and heritage management has become an integral part of 'progressive' mining world-wide. PPM's obligation

towards this end will last as long as the mine is operational and will reach fruition when the mine implements its closure objectives.

7 CONCLUSION AND RECOMMENDATIONS

The extension of the Tuschenkomst Pit requires that the opencast mining activities being extended onto the adjacent farms Wilgespruit 2JQ and Rooderand 46JQ and therefore into an easterly and a southerly direction whilst the existing WRD has to be extended westwards along the farm Tuschenkomst 135JP onto stone walled sites along the eastern base of Patswane and into a conceptualised cultural landscape situated between Mogare, Matone and Patswane.

Possible impact on the heritage resources

The eastern and southern extension of the open cast pit onto Wilgespruit 2JQ and Rooderand 46JQ will not have any influence on any heritage resources in this part of the PPM Project Area.

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The following mitigation measures are proposed for sites PTS01 and PTS02 that will be covered (destroyed) by the WRD as well as for the cultural landscape as this feature will be penetrated by the extended WRD.

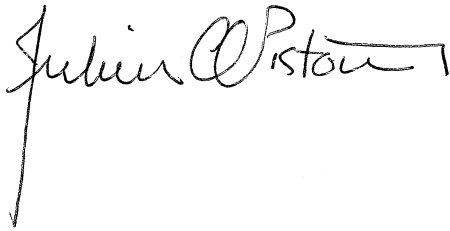
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A handwritten signature in black ink, reading "Julius CC Pistorius". The signature is written in a cursive style with a long vertical line extending downwards from the end of the name.

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Member ASAPA

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