

# CONSERVATION MANAGEMENT PLAN

## PLATREEF PROJECT

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The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information.



The report is based on survey and assessment information as received from Digby Wells and the recommendations and approval from the SAHRA prior to HCAC being appointed on the mitigation and conservation management plan compilation.

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### Abbreviations

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CMP: Conservation Management Plan
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
GRP: Grave Relocation Plan
HCAC: Heritage Contracts and Archaeological Consulting CC
HIA: Heritage Impact Assessment
IAP: Interested and Affected Parties
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency
WHS: World Heritage Site

## Executive Summary

Ivanplats (Pty) Ltd (“Ivanplats”) formerly known as Platreef Resources (Pty) Ltd applied for a mining right application for the proposed Platreef Project located near Mokopane in the Limpopo Province. The proposed project is located on the farms Turfspruit 241KR, Macalacaskop 243KR and Rietfontein 2KS. Platreef proposes to develop an underground mine with associated surface infrastructure. To comply with legislation a Heritage Impact assessment (HIA) was conducted for the mine lease area (Higgitt *et al* 2013) and the following sites were identified:

- Three archaeological sites;
- Fifty-five burial grounds;
- A historical werf;
- In addition, twenty five Iron Age and Stone Age occurrences of low significance have been identified throughout the area.

Heritage Contracts and Archaeological Consulting (HCAC) was appointed to develop a Conservation Management Plan (CMP) for the Platreef Project lease area as the construction and operation of the Platreef mine could have a negative impact on the heritage resources found within the project area. The purpose of the CMP can be summarised as follows.

### **Purpose of the CMP**

The overall purpose of the conservation management plan for the Platreef Project is:

- To provide a framework for ensuring a balance between legislative requirements, development and economic opportunities and non-renewable heritage resources in the project area;
- Ensuring long term protection of the Heritage resources and the heritage record of the area through conservation, management and maintenance of heritage resources;
- To provide a framework for the long term monitoring of the CMP;
- To provide a dynamic plan for heritage conservation that should be revised annually.

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## 1. INTRODUCTION

Digby Wells Environmental (Digby Wells) was requested by Ivanplats (Pty) Ltd (Ivanplats) to conduct an Environmental and Social Impact Assessment (ESIA), public consultation process and specialist studies for the proposed Platreef Project in accordance with the Mineral and Petroleum Resources Development Act, 2002 (Act No.28 of 2002) (MPRDA), National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), and National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) NEMWA) for submission to the Department of Mineral Resources (DMR) in support of a Mining Right Application (MRA). A Heritage Impact Assessment (HIA) (Higgitt *et al* 2013), was conducted as part of the specialist studies required for the compilation of the ESIA.

As per the comments received from SAHRA on the HIA, SAHRA requested that a Conservation Management Plan (CMP) should be developed for the continued protection of heritage resources identified in the HIA. The construction and operation of the Platreef mine could have an irreversible impact on heritage resources found within the project area. It is therefore important that the Conservation Management Plan include the development of management plans/actions that will minimise and avoid negative changes/impacts to heritage resources and enhance the positive. Heritage Contracts and Archaeological Consulting CC (HCAC) was contracted to address this recommendation from SAHRA and to develop a CMP for the Platreef Project lease area.

## 2. BACKGROUND TO THE PROJECT

In accordance with the National Heritage Resources Act (NHRA) (Act 25 of 1999) a Notice of Intent to develop (NID) was submitted for the project. The South African Heritage Resources Agency (SAHRA) requested that a HIA be conducted inclusive of archaeological resources, Palaeontological resources, Burial grounds and graves, and Intangible Heritage. Additionally, SAHRA has requested that given the proximity (20km) of the mine to the National and World Heritage Site of Makapan, that the possible impact of the mine on this site be assessed. This assessment must also consider the likely visual impact. Subsequent to the comments received from SAHRA a HIA (Higgitt *et al* 2013) was conducted for the Platreef Project lease area (Case 566).

The HIA was submitted to SAHRA and Limpopo Heritage Resources Agency (LIHRA) for approval and statutory comment. LIHRA did not comment on the HIA but final comments were received from SAHRA on 8 November 2013.

During the survey the following sites were identified:

- Three archaeological sites;
- Fifty-five burial grounds;
- A historical werf;

- In addition, twenty five Iron Age and Stone Age occurrences have been identified throughout the area.

## **2.1 Location**

Ivanplats proposes to develop a underground mine on the farms Turfspruit 241KR, Macalacaskop 243KR and Rietfontein 2KS in the Limpopo Province, approximately 10 km north west of Mokopane. Surface infrastructure (operational area and tailings facility) will be located on Turfspruit 241KR, and Rietfontein 2KS.

The project area is situated within the Savannah biome, which is the largest biome in Southern Africa. It consists of a grassy ground layer and a woody plant upper layer. It is known as Shrubveld when the woody layer is close to the grass layer and as Bushveld in any intermediate phases. Three vegetation types can be found within the project area: Clay thorn Bushveld, Mixed Bushveld and Waterberg (moist) mountain Bushveld (Low & Rebelo, 1996; Mucina, Rutherford, & Powrie 2006).

## **2.2. Nature of the development**

Infrastructure associated with the project includes a production shaft, ventilation shafts, crushers, stockpiles, conveyors, a concentrator plant, offices, roads, bulk power and water infrastructure as well as other associated infrastructure. The site of the mine encompasses 345.2 ha, the surface infrastructure 3 ha and the tailings area 256.54 ha.

### 2.3 Location Map

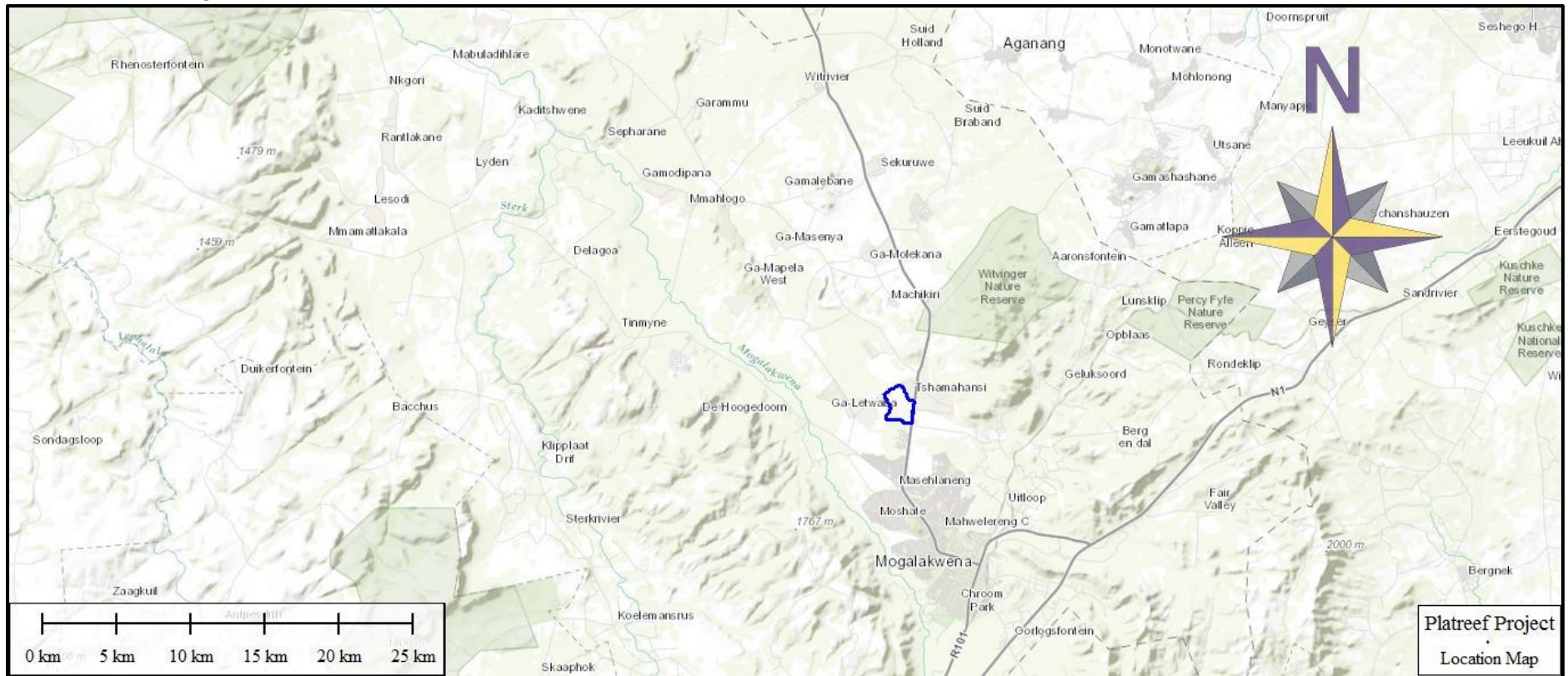


Figure 1. Location Map of the Platreef Project

### **3. PROJECT SCOPE**

HCAC was appointed to develop a Conservation Management Plan (CMP) for the Platreef Project lease area to comply with the requirements from SAHRA for the project. The construction and operation of the Platreef mine will have an impact on the heritage resources found within the project area. It is therefore important that the CMP includes the development of management plans that will minimise and avoid negative changes/impacts to heritage resources and enhance the positive.

#### **3.1. Aims of the CMP**

The overall purpose of the CMP for the Platreef Project is:

- » To provide a framework for ensuring a balance between legislative requirements, development and economic opportunities and non-renewable heritage resources in the project area;
- » Ensuring long term protection of the Heritage resources and the heritage record of the area through conservation, management and maintenance of heritage resources;
- » To provide a framework for the long term monitoring of heritage resources in the project area;
- » To provide a dynamic plan for heritage conservation that should be revised annually.

## **3.2 Goals and objectives of the CMP**

### **3.2.1. Goals**

The goals of the CMP for the Platreef project are to ensure the following:

- » Increased general heritage awareness at the Platreef project.
- » The long-term conservation of heritage resources and the archaeological record of the area through an open and transparent process.
- » A balanced approach between development, conservation and utilization.
- » Easy, clear guidelines on cost effective maintenance and management of heritage resources in the project area.

### **3.2.2. Objectives**

The objectives of the CMP for the Platreef project include:

- » To ensure the conservation of the various heritage resources in a sustainable manner.
- » To define management responsibilities for the identified heritage resources.
- » To provide clear management actions for the different sites and chance finds.
- » To provide a management framework to monitor and define the success of the CMP.

## **3.3. Legal Framework**

The following legal framework was used in compiling this management plan:

- » Site Management Plans: Guideline for the development of plans for the management of heritage sites or places – South African Heritage Resource Agency 2014;
- » The National Heritage Resources Act 1999, (Act No. 25 of 1999);
- » National Environmental Management Act, (Act No. 107 of 1999);
- » Human Tissue Act (Act No. 65 of 1983);
- » ICOMOS (The Burra Charter) (2013).

## **4. BACKGROUND HISTORY OF THE STUDY AREA**

### **4.1 Stone Age**

#### **4.1.1. Background of the Earlier Stone Age**

Hominids began to make stone tools about 2.6 million years ago. Known as the Oldowan industry, most of the earliest tools were rough cobble cores and simple flakes. The flakes were used for such activities as skinning and cutting meat from scavenged animals. These early artefacts are difficult to recognize and have so far only been found in rock shelters such as the Sterkfontein Caves (Kuman, 1998) and also in Makapan Valley in the caves in this area. .

At about 1.4 million years ago hominids started producing more recognizable stone artefacts such as hand axes, cleavers and core tools (Deacon & Deacon, 1999). Among other things these Acheulian tools were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus that had died from natural causes. Acheulian artefacts are usually found near the raw material from where they were quarried, at butchering sites, or as isolated finds. However, isolated finds have little value. Therefore, the project is unlikely to disturb a significant site.

Evidence suggests that the region surrounding the project area has been inhabited during all periods of the Stone Age, including the Early Stone Age (ESA), Middle Stone Age (MSA) and Later Stone Age (LSA). This is most evident and extensively documented at the Cave of Hearths in the Makapans Valley some 20 km to the east (McNabb & Binyon, 2004 and Phillipson, 2005). Fourie (2002) reported on a possible ESA core found on the surface to the west of the study area.

Makapans Valley was declared a World Heritage Site in 2005. The UNESCO website states the following: "Fossils found in the many archaeological caves of the Makapan Valley have enabled the identification of several specimens of early hominids, more particularly of Paranthropus, dating back between 4.5 million and 2.5 million years, as well as evidence of the domestication of fire 1.8 million to 1 million years ago." (UNESCO, 2013).

The proposed development is not expected to have a visual impact on the area and the development is located in the servitude of other developments in the area and is not expected to have an impact on the World Heritage Site.

#### **4.1.2. Background to the Middle Stone Age**

By the beginning of the Middle Stone Age (MSA), tool kits included prepared cores, parallel-sided blades and triangular points hafted to make spears (Volman, 1984). MSA people had become accomplished hunters by this time, especially of large grazing animals such as wildebeest, hartebeest and eland.

These hunters are classified as early humans, but by 100,000 years ago, they were anatomically fully modern. The oldest evidence for this change has been found in South Africa, and it is an important point in debates about the origins of modern humanity. In particular, the degree to which behaviour was fully modern is still a matter of debate. The repeated use of caves indicates that MSA people had developed the concept of a home base and that they could make fire. These were two important steps in cultural evolution (Deacon & Deacon, 1999). Previous impact assessments (Huffman, 1997; Fourie, 2002; Pistorius, 2002; Roodt, 2007; Roodt, 2008a; Roodt, 2008b) conducted in the greater study area have all reported stone tool scatters associated with the MSA and LSA. These finds are commonly associated with water sources, such as rivers and pans.

#### **4.1.3. Background to the Later Stone Age**

By the beginning of the Later Stone Age (LSA), human behaviour was undoubtedly modern. Uniquely human traits, such as rock art and purposeful burials with ornaments, became a regular practice. These people were the ancestors of the San (or Bushmen).

San rock art has a well-earned reputation for aesthetic appeal and symbolic complexity (Lewis-Williams, 1981). In addition to art, LSA sites contain diagnostic artefacts, including microlithic scrapers and segments made from very fine-grained rock (Wadley, 1987). Spear hunting probably continued, but LSA people also hunted small game with bows and poisoned arrows. Important LSA deposits have been excavated in Oliboempoort Cave (Mason, 1962) and other sites in the Waterberg to the West (Van der Ryst, 1998). According to Bergh (1999) some rock paintings, are known 20 to 30 km north east of Mokopane and the Archaeological database at Wits also have paintings on record to the east of the study area on the Planknek Mountain range. Scatters of Stone Age artefacts in the open are usually poorly preserved and therefore have less value than sites in caves or rock shelters. As there are no caves in the study area, there is a low possibility of finding sites of high significance in the area.

#### **4.2. Iron Age**

According to the 2013 HIA the following background applies:

Based on ceramic distributions as defined in Huffman (2007), the project area may possibly produce sites that span from the Early Iron Age through to the Late Iron Age (LIA). Several *Eiland facies* ceramics have been identified in the region surrounding the project area (WITS, 2010). Huffman (1997) identified two 'Moloko' settlements in the region dating to approximately 1500 CE – 1600 CE and several have been recorded by the University of the Witwatersrand. Based on these dates and ceramic distributions, these sites are likely associated with the *Madikwe facies* of the western Sotho-Tswana. It is also possible that these ceramics belonged to the Ndebele that also occupied the area but whose ceramics belonged to the *Letaba* or *Moloko* Traditions (Loubser, 1994). Sites recorded on the University of the Witwatersrand Archaeological Database (WAD) indicate that several Ndebele sites occur around this project area.



Ethnographically, the Ndebele of the region are divided into two groups with claims to similar origin in the north-west of Kwa-Zulu Natal. It is from here that they moved into the Gauteng and Limpopo region during the 16<sup>th</sup> – 17<sup>th</sup> century where they settled and subdivided into separate groups. Metal smelting sites are prevalent within the North-West (NW) Province near Zeerust Rooiberg and the Waterberg region in Limpopo approximately 150 km south-west from the project area (Boeyens, Küsel, & Miller, 1995). Evidence of iron, tin and copper smelting is present in these areas with smelting furnaces, tuyere pipe fragments and slag excavated from sites near Rooiberg, NW province (Miller & Hall, 2008).

### **4.3. Historical Sites**

By the 19<sup>th</sup> century, several local Ndebele communities occupied the region, one of the most prominent being the Kekana. Few Afrikaner people visited the Zoutpansberg Region before the first Voortrekker Leaders, Louis Tregardt (1783–1838) and Lang Hans van Rensburg crossed the Pietersburg Plateau during 1836. They were merely travelling through the area and only during 1848 did Andries Hendrik Potgieter (1792-1852) arrive to establish a permanent Afrikaner settlement in this part of the world. This was agreed with Tregardt ten years earlier. Andries Hendrik Potgieter set up the first Afrikaner settlement in Ohrigstad in 1845, some distance from Pietersburg. Later some Voortrekkers moved with Potgieter late in 1848 and settled in a town they called Zoutpansberg-dorp, about 100 km North West of the current town of Polokwane. This was later changed to Schoemansdal ([www.sahistory.co.za](http://www.sahistory.co.za)).

“Swart” Barend Vorster and some other families settled to the north of the present town of Polokwane during the winter of 1847 in anticipation to the arrival of Potgieter. Potgieter moved to the Zoutpansberg but many Voortrekkers chose farmland on the plateau. Amongst those were ancestors of present day community leaders, including the Vorster, Duvenhage, Snyman, Vercueil and Grobler-families.

Meanwhile, the Volksraad, acting on a request from Potgieter, founded a town in Makapanspoort called Vredenburg. Later renamed Potgietersrus, it became the neighbor of Pietersburg, a town of similar size some 60km to the south, and part of the ZAR. Potgieter died in December 1852, and his son Piet Potgieter succeeded him in 1854.

There was tension between the Boers in and the local populations in the 1850’s due to competition for land and the local trade (Tobias, 1945; Bonner, 1983; Delius & Trapido, 1983; Hofmeyr, 1988; Esterhuysen, et al., 2009; Esterhuysen, 2010; Morton, 2005). The clashes between the two groups culminated in the Mugombane siege of 1854 at Historic Cave in the Makapans Valley (Tobias, 1945). Hermanus Potgieter, brother of Piet, was killed during clashes with Chief Makapaan. Piet mobilized a command and drove Makapaan into hiding in a cave, where he was besieged. Both Makapaan and Piet Potgieter were killed in this battle, and Vredenburg was renamed Pietpotgietersrus in honour of the leader ([www.sahistory.co.za](http://www.sahistory.co.za)).

After this siege in 1858 a second group of Ndebele, the Langa of Hlubi (Nguni) origin under the Chief Mankopane, were attacked by a Boer expedition. Around 800 Langa Ndebele were killed. After their defeat, Chief Mankopane settled on Thutlwane Hill which is today located on the farm Kromkloof 744 LR (Jackson, 1969; Jackson, 1982). After this the Ndebele wanted nothing to do with Boers or Europeans ([www.sahistory.co.za](http://www.sahistory.co.za)).



In 1865 the Berlin Mission Station was given permission to establish a mission under W. Moschutz at the foot of Sefakaola Hill (Macalacaskop). Tensions between the Boers and Ndebele caused the mission stations abandonment and it was later used by the Boers as a garrison where they could fire upon Mokopane's chieftom, this resulted in the destruction of the mission station.

The mission was reoccupied in 1868 but in 1877, Mokopane exercised his authority and ousted the missionaries as he decided that it was a good vantage point for his enemies to spy on him. The chief erected an iron structure from the remains of the station as a symbol of his resistance to European interference.

Many colonial people living in Pietpotgietersrus died of malaria, and by April 1870 the town was abandoned. They returned in 1890 and Marabastad became the northernmost point of the ZAR. It was also the seat of the landdrost ([www.sahistory.co.za](http://www.sahistory.co.za)).

In 1890, Mokopane died and his successor was Lekgobo Valtyn. Valtyn's view of literacy was different to that of Mokopane, who regarded writing as Boer Business and refused to adopt it (Hofmeyr, 1991). Valtyn regarded literature as a resource that could be exploited (Hofmeyr, 1991) and therefore he allowed the mission station to be rebuilt. In 1890, a township was unofficially established named after Chief Valtyn. By the early 20th century the Berlin Mission Society began to fence off portions of land which caused tension between local inhabitants and Europeans resulting in what was called 'The Fence War' (Hofmeyr, 1990).

#### **4.4. Palaeontology**

"Most of the development area is underlain by Precambrian igneous rocks of the Rustenburg Layered Suite of the Bushveld Complex. The south-west section part of the property is underlain by the Molendraai Magnetite Gabbro of the Rustenburg Layered Suite. The south eastern portions of the property are underlain by the Duitschland Formation and the Malmani Subgroup of the Chuniespoort Group. To the extreme south-east, a small section of the property is underlain by the Uitloop Granites of the Mashashane Suite. The Bushveld Complex is a layered igneous intrusion containing a large reserve of platinum group metals (Lee, 1996; Eales & Cawthorn, 1996). Associated with this complex is the Rustenburg Layered Suite known to be the oldest mafic layered complex on earth (Wilson, 2012). As these rocks are Precambrian in age and of igneous origin it is unlikely that fossils will be affected. The Malmani Subgroup generally comprises dolomite, interbedded chert and shales, quartzite, and a variety of stromatolite structures. The dolomitic rocks this subgroup will contain stromatolites and will also have the potential to have sinkholes and caves which may have Quaternary deposits" (Higgit *et al* 2013).

## 5. PREVIOUS WORK

A desk top based Heritage Statement (du Piesanie 2013) has been submitted to which SAHRA provided comment on 21 August 2013, requesting the following:

- » *A heritage impact assessment must be compiled and included in the environmental impact assessment report.*
- » *The heritage impact assessment must include archaeology, palaeontology, intangible heritage and an assessment of burial grounds and graves (s. 36 of the NHRA).*
- » *Given the proximity (20km) of the mine to the National and World Heritage Site of Makapan, SAHRA recommends that the possible impact of the mine on this site be assessed. This assessment must also consider the likely visual impact.*
- » *The palaeontological impact assessment, conducted by a palaeontologist, must take into consideration the entire mining area. SAHRA leaves it to the discretion of the specialist to decide which sections of the project area should be subjected to a field survey.*

A HIA (Higgitt *et al* 2013) was conducted based on the SAHRA comments. The HIA assessed various areas and alternatives and identified the following sites (Figure 2):

- » Three archaeological sites;
- » Fifty-five burial grounds;
- » A historical werf;
- » Twenty Five Iron Age and Stone Age occurrences.

The report also considered the visual impact of the proposed mine on the Makapan World Heritage Site which is situated approximately 20 km from it.

Identified sites were recorded using handheld GPS's and documented through photographs and detailed notes.

Sites identified during the survey were named by using the Digby Wells project number, followed by the map sheet number and the relevant NHRA section suffixed with the site number: **PLA1677/2428BB /S.35-001** or **PLA1677/2429AA/S.35-001**. This number is abbreviated in tables and/or on plans or maps using the NHRA reference number suffixed with the site number: **S.35-001**. For continuation purposes this numbering system is followed in the CMP

## 5.1. Finds

### **TSF Option 2 located on the farm Rietfontein 2 KS.**

In this area eleven isolated surface occurrences and one stone walled site were identified. Of the eleven isolated occurrences, three are Stone Age and eight Iron Age occurrences. According to the report, **S.35-001, S.35-005, S.35-007 to S.35-13** were assigned a low significance field rating and the authors recommended no further action for these occurrences.

According to the report, **S.35-006** is an Iron Age smelting site with terraced walling and located in two sections. A portion of the site falls within the area earmarked for the Tailing Storage Facility. The other section is located 800 meters outside of the TSF. The site will be destroyed by the TSF and requires mitigation.

### **TSF Option 2 Pipeline, Located on the farm Rietfontein 2KS and Turfspruit 241 KR.**

This area contained collapsed stone walling, **S.35-077**, and five burial grounds. It was recommended that the burial grounds be avoided and if this is not possible relocation will have to occur. The collapse stone walling is considered to be of low significance and no further action was recommended.

### **TSF Option 3, Located on the farm Bultongfontein 239 KR.**

This area contains ten isolated surface occurrences and one burial ground. Of the ten isolated occurrences, three were Stone Age scatters, and eight were Iron Age scatters. The archaeological scatters are considered to be of low significance and the author recommended no further action.

The single grave, **S.36-023**, is being cared and maintained for and may be associated with the local community. The authors recommended relocation if the grave cannot be incorporated within the development.

### **TSF Option 3 Pipeline, Located on the farm Holmesleigh 1 KS.**

In this area one surface scatter and one historical werf was identified. The authors recommended that the **Site 34.083** (Historical Werf) should be avoided and if this is not possible, recorded fully by a Built Environment specialist. **Site 36-085** is a formal cemetery. The authors requested that the cemetery should be avoided.

### **Operational Area, Located on the farm Turfspruit 241 KR.**

Two isolated surface occurrences in the form of 1 Middle Stone Age Artefact and 1 potshard were identified. In addition, forty-two burial grounds identified all of which may be impacted by the proposed development. An Iron Age/Historical Site (**S.35-027**) was also identified. The site is dominated by circular and rectangular stone foundations and remnants of walls. According to the report five burials are within the site, although these are not actually related to the site.

It is indicated in the report that all sites will be impacted by the proposed development. The report recommended that if the burials cannot be incorporated into the development they will have to be relocated.

### **Alternative Plant Area, Located on the farm Turfspruit 241 KR**

An archaeological site, five burial grounds and a single grave was identified in the area. The archaeological site **S.35-071** is situated over 90 percent of the Plant area. It will not be able to incorporate the site and it will have to be mitigated. The authors recommended relocation of the graves if it is not possible to incorporate them within the Alternative Plant Area.

### **Palaeontological Resources**

According to the heritage report no surface fossils were identified during the field assessment, especially in areas overlying the rocks of the Duitschland Formation and the Malmani Supergroup of the Chuniespoort Group. The Chuniespoort Group has high palaeontological significance due to the likelihood of impact to cave breccia resources such as are found in the Makapan WHS. As such, there is a possibility that fossils may be uncovered during excavation and however, this can only be verified through strict paleontological monitoring.

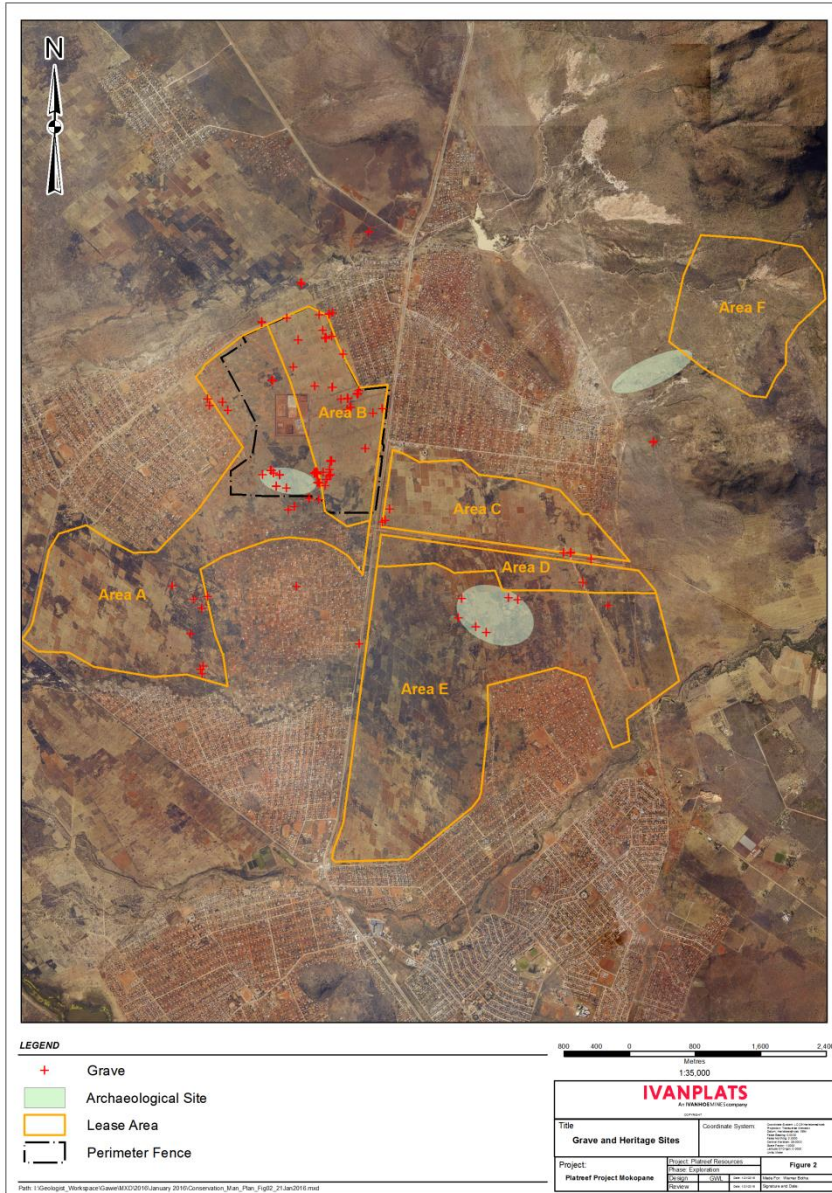


Figure 2: Heritage Site Distribution Map

## 5.2. SAHRA Comments

SAHRA commented on the HIA in December 2013 (Case Id 566) and requested the following:

- » Since no archaeological or any other heritage resources were identified in the area proposed for the Tailings Storage Facility Option 1 and its proposed pipeline, SAHRA prefers this option considering that the TSF2 and TSF3 and its related pipelines will likely result in negative impact on heritage resources. If either TSF Option 2 or 3 and their associated pipeline are selected for development, SAHRA must be informed in writing as to the motivation for this selection and further mitigation studies may be required. A Comparative EIA was conducted for this reference (Ramalivhana 2015) and will be submitted to SAHRA together with the Conservation Management Plan.
- » No further action is required for the isolated surface occurrences in the Operational Area.
- » Should it not be possible to retain the Iron Age Sites, S.35-027 and S.35-071 *in situ* by incorporating them into the design of the proposed mine, these sites will have to be fully mitigated. The responsible archaeologist will require a Phase 2 permit in terms of section 35 of the NHRA which will have to be obtained from SAHRA before work can commence. The sites will have to be fully documented, with detailed site photographs, scaled drawings and excavated representative samples where required.
- » The SAHRA Burial Grounds and Graves Unit will only support relocation of burials in the Operational Area and the Alternative Plant Area if it is not feasible or practical to retain the identified graves. The developer will have to provide proper motivation for relocation. Please note that a permit in terms of section 36 of the NHRA will have to be obtained from SAHRA and a 60 day public consultation process followed.
- » The recommendation for monitoring for palaeontological resources is supported. A strict monitoring and reporting protocol must be included in the EMP which must be approved by SAHRA.
- » All other heritage resources identified in the HIA including those impacted by TSF2, TSF3 and its proposed pipelines will have to be retained *in situ* and a Conservation Management Plan development for their continued protection. Grave sites 60 years or older in these areas will have to be cleaned, fenced and access gates installed to allow visits from relatives and family friends.
- » If any archaeological/palaeontological or any other heritage resource is uncovered during the course of construction activities SAHRA APM Unit (Mrs. Colette Scheermyer/Mr. Phillip Hine, tel. 021 462 4502) or an archaeologist/paleontologist must be alerted immediately to inspect the findings. If the newly discovered heritage resource is considered to be significant a rescue excavation may be required at the cost of the developer.



## 6 Data Interpretation: Assessment of Significance

### 6.1 Significance of Sites

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the Platreef project the entire lease area was surveyed during the 2013 HIA. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites that will be impacted on. The following criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposits;
- » The wider historic, archaeological and geographic context of the site;
- » The location of the site in relation to other similar sites or features;
- » The depth of the archaeological deposit (when it can be determined/is known);
- » The preservation condition of the sites;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) 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:

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

## 6.2. Field Rating of Sites

Site significance classification standards prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report.

<b>FIELD RATING</b>	<b>GRADE</b>	<b>SIGNIFICANCE</b>	<b>RECOMMENDED MITIGATION</b>
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected (GP.A)	A	-	High/medium significance Mitigation before destruction
Generally Protected (GP.B)	B	-	Medium significance Recording before destruction
Generally Protected (GP.C)	C	-	Low significance Destruction

## 6.3 Heritage sites in development area and SWOT Analysis

The final mine surface layout consists of the operational area on the farm Turfspruit 241 KR and the tailings facility (TSF site 2 as assessed in 2013 HIA) on Rietfontein 2KS. Several burial sites as well as two Iron Age sites will be impacted on by the surface infrastructure (Figure 3 & 4). Please refer to Section 8 for the Heritage register that include co-ordinates, site significance and management actions. A short description of the sites follows.



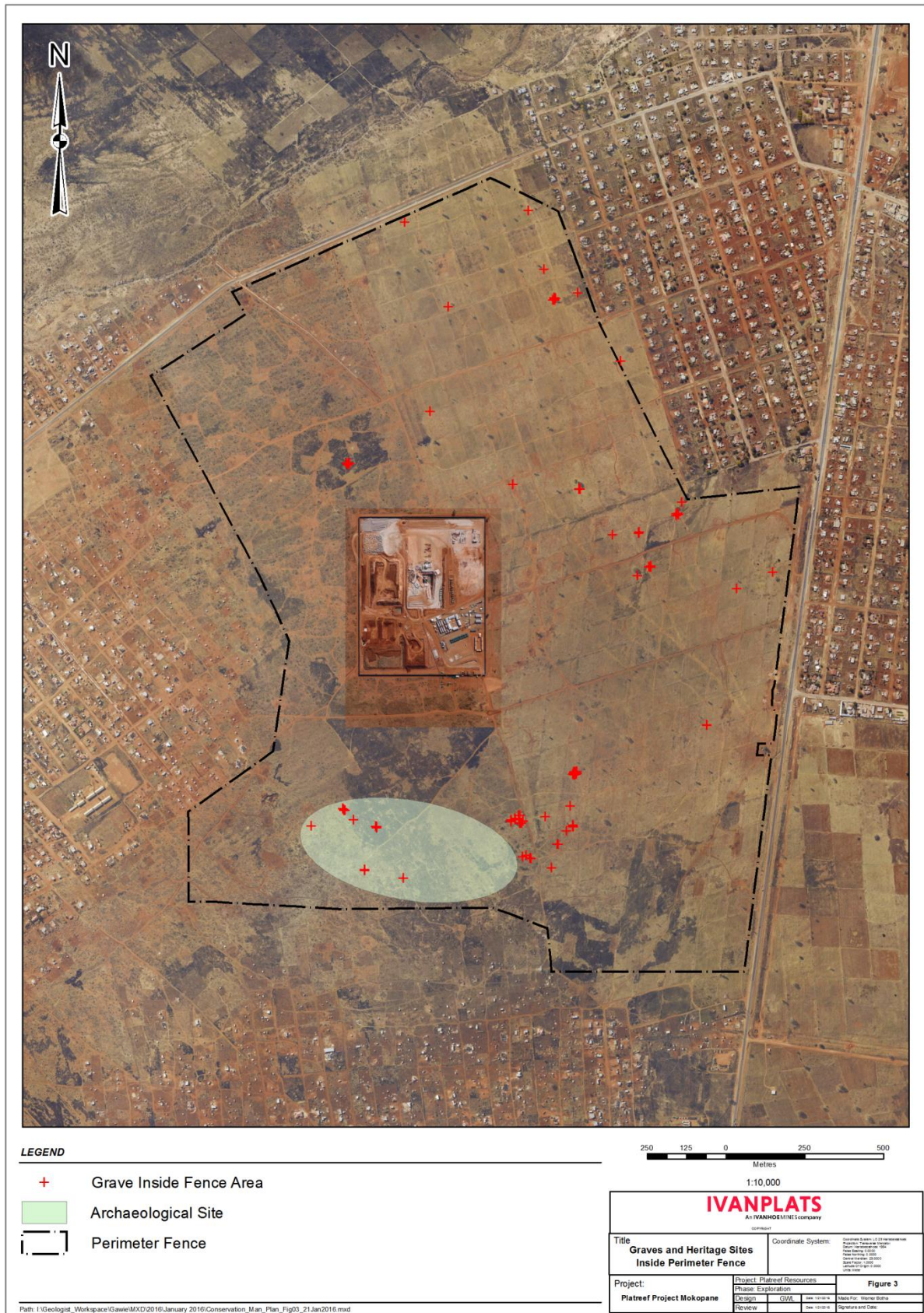


Figure 3: Heritage Sites within the Operational area.





Figure 4: Heritage Sites within the TSF area.



**PLA1677/S.35-006 – Iron Age Site**

The site of **PLA1677/S.35-006** consists of different archaeological features, of which a section is located within the tailings facility. The site is located around a group of koppies, just north of the village of Tshamahansi. The site includes terraced walling, large middens with undiagnostic potsherds and faunal remains as well as vitrified kraal deposits (Figure 5). Evidence of Iron working (possibly smithing) is recorded on a slope of a small hill, with *tuyere* pipe pieces located within the slag deposit as well as smaller clusters of slag (Figure 6) scattered between the stone walls. This site will require mitigation prior to construction. Several erosion gullies are present with numerous surface occurrences of MSA lithics of negligible significance.



Figure 5: Large cattle kraal





Figure 6: Slag fragments



**PLA1677/S.35-027 – Iron Age/Historical Site**

**S.35-027** is located on a flat landscape between the villages of Ga-Kgubudi and Ga-Magongoa, and an informal settlement, Mzombane. The site is characterised by both circular (Figure 7) and rectangular stone foundations and remnants of linear walls (Figure 8). There are at least 5 burials within the site which have all been fenced. Undiagnostic potsherds, glass and metal fragments were found scattered over the site. This site will require mitigation prior to construction.



Figure 7: Circular Foundations



<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>» The sites are protected by the Act.</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>» Iron Age scatters might not be correctly identified, especially by the untrained eye, and sites might be damaged or destroyed.</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>» Through mitigation more information will be yielded on Iron Age Heritage in the project area.</li> <li>» The sites will then contribute to the archaeological record of the area</li> <li>» By educating employees and contractors further sites might be identified.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>» The sites will be directly impacted on by the mine infrastructure</li> <li>» Damage to the site by uninformed staff</li> </ul>



Figure 8: Linear walls

## Grave Sites

The final tally of graves is not known at this point as several other grave sites were recorded after the 2013 HIA. A separate study is addressing the grave sites and this information will be incorporated into the final CMP. At this stage it is estimated that approximately 32 grave sites are impacted on by the operations area and will have to be relocated. All visible graves have been tallied and linked to the relevant next of kin. All the graves impacted on by the operational area footprint will be relocated and consent for the relocation was obtained from the family's next of kin.

<b>Strengths</b> <ul style="list-style-type: none"> <li>» The sites are protected by the Act.</li> </ul>	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>» Several grave sites occur in the project area and informal graves may be undetected.</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>» Through proper documentation and mapping the sites can be preserved properly or relocated.</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>» Unintentional damage to grave sites.</li> </ul>

## Iron Age and Stone Age occurrences

A number of Iron Age and Stone Age occurrences have been identified throughout the area considered to be of low significance by the Digby Wells specialist and no further action has been recommended for these occurrences.

<b>Strengths</b> N.A	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>» Occurrences are not always recognisable by the untrained eye and could easily remain unidentified or interpreted as being of significance.</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>» The occurrences have been recorded and mapped providing information for updating the heritage record of the area.</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>» Sites like these can be unknowingly destroyed.</li> </ul>

#### 6.4. Other Heritage resources in the lease area and SWOT Analysis

##### Palaeontology

During the 2013 field survey, no surface fossils were identified in the project area, specifically in the areas overlying the rocks of the Duitschland Formation and the Malmani Supergroup of the Chuniespoort Group. Fossils may exist beneath the surface but their existence can only be verified through monitoring excavations. In this sense, the impact of construction activities such as excavations is positive for palaeontology, provided that efforts are made to monitor and rescue fossils. These areas will have to be monitored during construction.

<b>Strengths</b> <ul style="list-style-type: none"> <li>» The sites are protected by the Act.</li> </ul>	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>» Fossils can easily be missed by the untrained eye.</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>» Through proper documentation and mapping the sites can be preserved or recorded adding to the heritage record of the area.</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>» Unintentional damage and destruction of palaeontological sites.</li> </ul>

##### Medicinal Plants

The 2013 study indicated that 13 medicinal plants occur in the operations area. The team interviewed Dr Mohatla who is a registered Traditional Health Practitioner (THP). He is also the District Chairperson of THP's for the Waterberg Municipality, District Leader of the Mogalakwena Municipality and the Limpopo Provincial Committee Member. He indicated that while these plants were important to his work, they are found in many places and are not only found within the project area. These Medicinal plants that were identified during the fauna and flora report, as well as through consultation were found to occur across the project area; however they are not endemic to the project area.

<b>Strengths</b> <ul style="list-style-type: none"> <li>» The plants are widespread and do not only occur in the project area.</li> </ul>	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>» Plants that do grow in the project area will be destroyed and will no longer be available to the community for use.</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>» The plants can be grown outside of the project area and unlike other heritage resources these are renewable.</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>» Increase in developments result in fewer areas where these plants occur.</li> </ul>



## Grave Sites

The final tally of graves is not known at this point as several other grave sites were recorded after the 2013 HIA. A separate study is addressing the grave sites and this information will be incorporated into the final CMP. At this stage it is estimated that at least 4 additional grave sites are located within the lease area.

<b>Strengths</b> <ul style="list-style-type: none"> <li>» The sites are protected by the Act.</li> </ul>	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>» Many grave sites occur in the project area and informal graves may be undetected.</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>» Through proper documentation and mapping the sites can be preserved properly or relocated.</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>» Unintentional damage to grave sites.</li> </ul>

### PLA1677/S.35-071 – Iron Age/Historical site

The site measures approximately 500 m x 300 m and is located on a small rise consisting of rectangular and circular stone foundations with monolithic stone walling at the southern end of the settlement. One area has two circular stone foundations with sun-baked bricks that had collapsed towards the centre. Surface occurrences of undiagnostic potsherds are found scattered throughout the western side of the settlement. At least three burials are located within the site. Features on site consist of two raised stone walled platforms that are located north of a rectangular structure. A resounding rock or “gong rock” is located on the western side of the settlement. MSA lithics are scattered around the “gong rock”, which include flakes with retouch. This site will not be affected by the proposed mining and no pre construction mitigation is needed.

<b>Strengths</b> <ul style="list-style-type: none"> <li>» The sites are protected by the Act.</li> </ul>	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>» Iron Age scatters might not be correctly identified, especially by the untrained eye and might be interpreted as being of significance.</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>» Through mitigation more information will be yielded on the Iron Age Heritage in the project area.</li> <li>» The sites will then contribute to the archaeological record of the area</li> <li>» By educating employees and contractors further sites might be identified.</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>» The sites will be directly impacted on by the mine infrastructure.</li> <li>» Damage to the site by uninformed staff.</li> </ul>

**PLA1677/S.34-083 - Historical Werf**

From the historical background we know that the project area and surrounding areas have been inhabited and have set the scene for various conflict situations for hundreds of years.

The HIA recorded a historical werf and recommended that this should be avoided by the development. Should the werf be impacted on it is recommended that the site should be assessed by a conservation architect and the structures recorded and mapped.

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>» The site is protected by the Act.</li> <li>» The site will not be impacted on.</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>» Some of the structures cannot be reused for the purposes of the mine.</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>» Through recording the site will add to the heritage record of the area..</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>» If left unattended the buildings and remaining character of the site will deteriorate.</li> </ul>

### 6.5. SITE SIGNIFICANCE OF SITES IN DEVELOPMENT FOOTPRINT

All Grave Sites and Burial Grounds are of High Social Significance and have a Field rating of Generally Protected A.

Site ID	Type	Location Data	Significance	Field Rating
PLA1677/S.35-006	Iron Age Site	Latitude=-24.078160 Longitude=29.001860	Medium	Generally Protected B
PLA1677/S.35-027	Iron age/ Historical Settlement	Latitude=-24.091940 Longitude=28.956640	Low	Generally Protected B
PLA1677/S.35-071	Iron Age/ Historical Settlement	Latitude=-24.105950 Longitude=28.983750	Low - Medium	Generally Protected B
PLA1677/S.34-083	Historical Werf	Latitude=-24.037678 Longitude=28.980444	Low - Medium	Generally Protected B
PLA1677/S.36-077	Stone Walling	Latitude=-24.086500 Longitude=29.001472	Low	Generally Protected C

## **6.6 Re-evaluation of heritage**

Prior to the compilation of the CMP the two archaeological sites that will be impacted on were re-visited through numerous site visits conducted by Jaco van der Walt from May to October 2015. The CMP is based on the results of the initial HIA, subsequent site visits by the author and comments from SAHRA on the initial 2013 HIA.

## **7. CONSULTATION**

During the 2013 ESIA a Public Participation Process (PPP) was conducted that identified a total of 1432 stakeholders who have registered as IAPs. These included private individuals, representatives from Government Institutions and Non-governmental organizations (NGOs) Although no registered local heritage conservation bodies were identified, certain organisations and individuals were identified that may have interests in heritage resources. During the process, two individuals commented during the public meetings regarding heritage issues. Their concerns were about graves that may be disturbed, and the destruction of medicinal plants. According to the authors of the 2013 report these concerns were answered during the public meetings and were addressed in the HIA study by collecting information regarding graves and medicinal plants.

### **7.1 Consultation in relation to the Conservation management plan**

A public participation process was undertaken to invite interested and affected parties to provide inputs into the CMP.

The following actions were taken to facilitate the public participation for the project

Midturon Information Consultants (MIC) was commissioned by Heritage Contracts and Archaeological Consultants (HCAC) to undertake a Public Participation Process for the proposed Conservation Management Plan within the Platreef Area. Proofs of advertisements and photographs of site notices are attached as Annexure A.

### **Announcement and opportunity to become involved**

The opportunity to participate in the CMP was announced in September 2015 as follows:

- » Newspaper advertisement was placed in:
- » Bosveld (English) 11 September 2015 and
- » Capricorn Voice (Sepedi, Xitsonga) 09 September 2015 newspaper and requesting Interested and Affected Parties (I&APs) to register with, and submit their comments to MIC.
- » Distribution of flyers (17 September 2015), inviting I&APs to become involved,

### **Site Notices**

To inform surrounding communities and immediately adjacent landowners of the proposed development of a CMP, MIC placed site notices within the boundaries of the study area on Monday, 17 September 2015.

## **Public Meeting**

A Public meeting was held to discuss the project and invite comments and inputs from the local community on 03 November 2015. An invitation to attend the meeting was announced as follows:

- » Newspaper advertisement was placed in:
- » Bosveld (English) 30 October 2015 and
- » Capricorn Voice (English) 28 October 2015.
- » Invitation circulated to Kgobudi and Tshamahansi traditional leadership 22 October 2015.
- » Invitation emailed to SAHRA & LIHRA 26 October 2015.

## **7.2. Stakeholder Participation**

An Interested and Affected Parties (I&APs) database was developed for any I&APs to register on the project. The database will be expanded through networking as new I&APs respond. No stakeholders have registered on the database up to date.

## **8. PLATREEF HERITAGE MANAGEMENT ACTIONS**

### **8.1. Heritage Awareness**

It is important to ensure that all employees and contractors working on the Platreef project are aware of the applicable Heritage legislation and what heritage resources are. It is recommended that this is communicated during induction training as well as through notices placed in strategic places.

In terms of the South African Heritage Resources Act (Act 25 of 1999) the following applies:

**Structures**

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

**Archaeology, palaeontology and meteorites**

**35.(4) No person may, without a permit issued by the responsible heritage resources authority—**

*(e) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*

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

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

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

**36. Burial grounds and graves**

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

*(d) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*

*(e) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or*

*(f) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.*

It is important to include the following information in the site induction.

- Heritage resources are protected by the NHRA.
- Heritage resources can occur subsurface and therefore chance find procedures need to be included in the heritage management framework.
- Where heritage resources might be impacted, the proper authorisation and permits should be obtained from the SAHRA. The project archaeologist can assist with this.

## **8.2. Heritage Management Framework**

Heritage Management in the Platreef project area will be governed by the National Heritage Resources Act (Act 25 of 1999) as well as the National Environmental Management Act (Act 107 of 1998) together with recommendations from SAHRA and Archaeological best practice.

In terms of a high level framework the following development actions will trigger the National Heritage Resources Act (Act 25 of 1999) for areas or project components not previously covered by a HIA.

- (a) the construction of a road, wall, transmission line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50m in length;
- (c) any development or other activity which will change the character of a site-
  - (i) exceeding 5 000 m<sup>2</sup> in extent; or
  - (ii) involving three or more existing erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- (d) the re-zoning of a site exceeding 10 000 m<sup>2</sup> in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

In terms of the day to day management of heritage resources in the project area the following framework is suggested:

### **High and Medium high significant sites (e.g. grave sites)**

#### **Management Actions**

These areas should be avoided by mining activities and demarcated to limit access and create and increase awareness of the sites. Future developments in these areas should be limited and if development cannot be avoided in these areas, the development will be subject to SAHRA approval and the correct permit application procedure.

#### **Monitoring actions**

The sites should be inspected quarterly by the ECO and annually by the project archaeologist whose recommendations should be included in the annual review of the CMP.

## Medium Significant sites (e.g. Iron Age Sites)

### Management Actions

It is important that mine employees are aware of the importance of heritage resources and where these sites are located on development plans. The areas do not need limited access.

### Monitoring Actions

The sites should be inspected quarterly by the project archaeologist whose recommendations should be included in the annual review of the CMP or if the ECO deems it necessary.

## Low Significant Sites

### Management Actions

Chance find procedures apply to these areas.

### Monitoring Actions

The ECO will manage and monitor these sites at their discretion.

## 8.3. Specific Management Actions

### 8.3.1 Stone Age

The Stone Age occurrences are of low significance and no further action is required. It is however recommended that a chance find procedure is put in place for the project and also that as the project lay outs and development plans change AIA surveys should be conducted prior to development as per the NHRA Act 25 of 1999.

### 8.3.2. Iron Age

Three Iron Age sites have been identified in the HIA. According to the information received the Operational Area cannot be relocated because it will surround the production shafts that were dictated by access to underlying ore bodies. "The operational area was therefore situated as close to the Production shaft as possible to minimize additional footprint areas that may have been required otherwise. A Formal site selection was done as part of the EIA investigations, but the other viable options were fatally flawed due to potential resource sterilization and proximity to flood plain". Therefore site **S.35-027** will be directly impacted on by the operations area and must be mitigated as per the comments received from SAHRA. Another site located in the tailings facility option 2 (**S.35-006**) will also be directly impacted on and must be mitigated as per the comments received from SAHRA. This option was decided on after a comparative EIA was conducted indicating that option 2 is more viable than option 1 (Ramalivhana 2015).

The responsible archaeologist will require a Phase 2 permit in terms of section 35 of the NHRA to be obtained from SAHRA before work can commence. The sites will have to be fully documented, with detailed site photographs, scaled drawings and excavated representative samples where required. When a destruction permit is granted for these sites by SAHRA these sites must be monitored by the project archaeologist during destruction.



The 2013 HIA also recorded eight Iron Age scatters that the authors deemed of low significance. The HIA indicated that no further action is required in terms of the Iron Age scatters that were recorded. It is however recommended that the scatters are mapped and that a chance find procedure is put in place. The areas should be monitored by the ECO (who had archaeological induction) with the project archaeologist on standby if significant finds are exposed.

### **8.3.3. Historical Sites**

The HIA recorded a historical werf (**Site 34.083**) and recommended that this should be avoided by the development. Should the werf be impacted on it is recommended that the site should be assessed by a conservation architect and the structures recorded and mapped. Based on the results of the conservation architect's assessment a destruction permit must be applied for.

### **8.3.4. Cemeteries and Graves**

The HIA recorded numerous burial sites and cemeteries in the project area. It is recommended that burial sites located within operational areas should be avoided by the development where possible. The sites should be cleaned and fenced off with an access gate for family members and demarcated with an adequate buffer zone determined in conjunction with the project archaeologist. It is recommended that a chance find procedure should be implemented for unidentified and unmarked graves and burial sites that include a reporting system to the project archaeologist.

According to the information received the Operational Area cannot be relocated because it will surround the production shafts that were dictated by access to underlying ore bodies. "The operational area was therefore situated as close to the Production shaft as possible to minimize additional footprint areas that may have been required otherwise. A Formal site selection was done as part of the EIA investigations, but the other viable options were fatally flawed due to potential resource sterilization and proximity to flood plain".

Therefore several (32) grave sites will be directly impacted on by the development. Should it not be possible to retain the burial sites, the graves should be relocated with the required permits from the SAHRA and according to the required process from the NHRA. This process should be overseen by a qualified archaeologist. The grave relocation process must include as a minimum:

- » A detailed social consultation process, that will trace the next-of-kin and obtain their consent for the relocation of the graves, that will be at least 60 days in length;
- » Site notices and newspaper advertisements indicating the intent of the relocation;
- » Relevant permits from the local authority and Provincial Department of health as well as a permit from the SAHRA for graves older than 60 years or unidentified and presumed older than 60 years;
- » An exhumation process that demonstrates respect for the remains and family;
- » The whole process must be managed preferably by a company that has a proven track record in grave relocations;

- » The process must be conducted in such a manner as to safeguard the legal rights of all parties involved

### 8.3.5. Specific Management Actions Per site from the HIA

Site ID	Type	Location Data	Impact	Mitigation Measures
PLA1677/S.35-006	Iron Age Site	Latitude=-24.078160 Longitude=29.001860	Direct Impact	Mitigation , through excavation, mapping and recording prior to construction and monitoring of the area during construction
PLA1677/S.36-023	Single Grave	Latitude=-24.012918 Longitude=28.983628	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-025	Single Grave	Latitude=-24.093868 Longitude=28.958136	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.35-027	Iron age/ Historical Settlement	Latitude=-24.091940 Longitude=28.956640	Direct Impact	Mitigation , through excavation, mapping and recording prior to construction and monitoring of the area during construction
PLA1677/S.36-028	Single Grave	Latitude=-24.089977 Longitude=28.955075	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-029	Burial Ground	Latitude=-24.091242 Longitude=28.956756	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-030	Burial Ground	Latitude=-24.092667 Longitude=28.960611	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-031	Burial Ground	Latitude=-24.088500 Longitude=28.963222	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-032	Burial Ground	Latitude=-24.080190 Longitude=28.961359	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-033	Burial Ground	Latitude=-24.080340 Longitude=28.963431	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-034	Burial Ground	Latitude=-24.078105 Longitude=28.958794	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-035	Burial Ground	Latitude=-24.088524 Longitude=28.963286	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-036	Burial Ground	Latitude=-24.089939 Longitude=28.963251	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-037	Burial Ground	Latitude=-24.082707 Longitude=28.969505	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-038	Burial Ground	Latitude=-24.082591 Longitude=28.965630	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-039	Burial Ground	Latitude=-24.081565 Longitude=28.965277	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-040	Burial Ground	Latitude=-24.082823 Longitude=28.965238	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-041	Burial Ground	Latitude=-24.074054 Longitude=28.962338	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-042	Burial Ground	Latitude=-24.074860 Longitude=28.962619	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-043	Burial Ground	Latitude=-24.074711	TBC	Graves that cannot be

		Longitude=28.963395		preserved in situ must be mitigated – relocation.
PLA1677/S.36-044	Burial Ground	Latitude=-24.075068 Longitude=28.959432	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-045	Burial Ground	Latitude=-24.090127 Longitude=28.963029	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-046	Burial Ground	Latitude=-24.092743 Longitude=28.961814	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-047	Burial Ground	Latitude=-24.092586 Longitude=28.960643	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-048	Burial Ground	Latitude=-24.076683 Longitude=28.964709	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-049	Burial Ground	Latitude=-24.079643 Longitude=28.956231	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-050	Burial Ground	Latitude=-24.073230 Longitude=28.954965	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-051	Burial Ground	Latitude=-24.080371 Longitude=28.963412	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-052	Burial Ground	Latitude=-24.082645 Longitude=28.965630	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-053	Burial Ground	Latitude=-24.088451 Longitude=28.963236	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-054	Burial Ground	Latitude=-24.082780 Longitude=28.965223	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-055	Burial Ground	Latitude=-24.081648 Longitude=28.948439	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-056	Burial Ground	Latitude=-24.082371 Longitude=28.948690	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-058	Burial Ground	Latitude=-24.082883 Longitude=28.950858	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-059	Burial Ground	Latitude=-24.079611 Longitude=28.956215	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-060	Burial Ground	Latitude=-24.089726 Longitude=28.962312	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-061	Burial Ground	Latitude=-24.081593 Longitude=28.965299	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-062	Single Grave	Latitude=-24.081675 Longitude=28.964468	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-063	Single Grave	Latitude=-24.080206 Longitude=28.961302	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-064	Single Grave	Latitude=-24.078115 Longitude=28.958797	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-065	Single Grave	Latitude=-24.075093 Longitude=28.959434	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-066	Single Grave	Latitude=-24.074713 Longitude=28.963396	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-067	Burial Ground	Latitude=-24.074961 Longitude=28.962666	TBC	Graves that cannot be preserved in situ must be

				mitigated – relocation.
PLA1677/S.36-068	Single Grave	Latitude=-24.074052 Longitude=28.962343	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-069	Single Grave	Latitude=-24.076703 Longitude=28.964744	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-070	Burial Grave	Latitude=-24.103610 Longitude=28.978957	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.35-071	Iron Age/ Historical Settlement	Latitude=-24.105950 Longitude=28.983750	No Direct Impact	Mitigation , through excavation, mapping and recording prior to construction and monitoring of the area during construction
PLA1677/S.36-072	Burial Ground	Latitude=-24.105770 Longitude=28.978567	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-073	Burial ground	Latitude=-24.106735 Longitude=28.980630	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-074	Burial Ground	Latitude=-24.103521 Longitude=28.984591	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-075	Burial Ground	Latitude=-24.103755 Longitude=28.985683	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-076	Burial Ground	Latitude=-24.107360 Longitude=28.981930	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-078	Burial Ground	Latitude=-24.086417 Longitude=29.001972	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-079	Burial Ground	Latitude=-24.086333 Longitude=29.002028	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-080	Burial Ground	Latitude=-24.098600 Longitude=28.991170	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-081	Burial Ground	Latitude=-24.098609 Longitude=28.991124	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-082	Burial Ground	Latitude=-24.099291 Longitude=28.994485	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.34-083	Historical Werf	Latitude=-24.037678 Longitude=28.980444	No Direct Impact	Mitigation prior to construction – assessment, mapping and recording of the site by a conservation architect.
PLA1677/S.36-085	Formal Cemetery	Latitude=-24.063234 Longitude=28.967857	TBC	Graves that cannot be preserved in situ must be mitigated – relocation.
PLA1677/S.36-077	Stone Walling	Latitude=-24.086500 Longitude=29.001472	TBC	Mitigation , through excavation, mapping and recording prior to construction and monitoring of the area during construction

\*Occurrences were not included in this register as they do not constitute heritage sites.

#### **8.4. Heritage Management at the Platreef Project**

Ivanplats management is ultimately responsible for managing heritage resources in the project area in a legally compliant and socially responsible manner. Generally the Environmental Control Officer and environmental team take responsibility for the day to day management and monitoring of heritage resources or appoint a suitably qualified person to do so. The responsible party must ensure that all actions and planned development that might have an impact (indirectly or directly) on heritage resources are subject to the requirements and guidelines in this conservation management plan.

It is recommended that a project archaeologist is appointed on a consultancy basis to work together with the environmental management team and mine management to ensure that heritage resources are managed and monitored as per legal requirements. The project archaeologist will be responsible for training the ECO in heritage related matters as well as to supply the mine with induction training material. The project archaeologist will also be responsible for monitoring of sites and the CMP. This will also provide the mine with a valuable communication channel, who will be the first contact person in all heritage related matters and the contact person for the chance find procedure. It is recommended that the mine should compile a heritage register of all identified sites in the project area with management actions taken. It is also recommended that interpretive panels of finds cultural background to the area should be placed in the community centre display, enhancing the positive contribution of the heritage resources identified and researched in the project area, which would otherwise have remained unknown.

The heritage management team should address heritage concerns with regular feedback and the evaluation of predetermined goals (Monitoring of resources monthly, evaluation of heritage concerns during construction processes, mitigation progress, project timing etc.). A workable process/ system will be finalised with the Ivanplats management after the 25<sup>th</sup> of November.

#### **9. INSTITUTIONAL AGREEMENTS AND CURATION**

The University of the Witwatersrand agreed to curate artefacts recovered from excavations.

## **10. CHANCE FIND PROCEDURE AND PROCEDURE FOR REPORTING.**

This procedure applies to permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds relating to heritage resources.

The term 'heritage resource' includes structures, archaeology, paleontology, meteors, and public monuments as per the South African National Heritage Resources Act (Act No. 25 of 1999) (NHRA) Sections 34, 35, and 37.

Procedures specific to burial grounds and graves as defined under NHRA Section 36 will be discussed separately as these require the implementation of separate criteria for Chance Find procedures.

### **CHANCE FIND PROCEDURES**

The following procedural guidelines must be considered in the event that previously unknown heritage resources or burial grounds and graves are exposed or found during the life of the project. The chance find procedure was compiled based on the accepted Chance find procedure compiled for Platreef by Digby Wells (Pty) Ltd.

#### **Initial Identification and/or Exposure (Chance Find)**

If during the construction, operations, or closure phases of this project, any person employed by the mine, one of its subsidiaries, contractors and subcontractors, or service provider, find any artefact of cultural significance, this person must cease work at the site of the find. They must report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.

The initial procedure when such sites are found aim to avoid any further damage. If during the construction, operations or closure phases of this project, any person employed by the mine, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance the following steps and reporting structure must be observed in both instances:

- The person or group (identifier) who identified or exposed the heritage resource or burial ground must cease all activity in the immediate vicinity of the site;
- The identifier must immediately inform the senior on-site Manager of the discovery;
- The senior on-site Manager must make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area and ensure that the site is secured and control access;
- The senior on-site Manager will inform the ECO and Health and Safety (HS) officer of the chance find and its immediate impact on mine operations. The ECO will then contact the project archaeologist.

- **Chance Find Procedures: Heritage Resources**

In the event that previously unidentified heritage resources are identified and/or exposed during construction or operation of the Platreef Project, the following steps must be implemented subsequent to those outlined above:

- The project archaeologist must be notified of the discovery;
- The project archaeologist will visit the site for a field based assessment of the finds and appropriate mitigation measures will then be presented to Ivanplats;
- Should the specialist conclude that the find is a heritage resource protected in terms of the NHRA (1999) Sections 34, 35, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), the project archaeologist will notify the South African Heritage Resources Agency (SAHRA) and/or the Limpopo Provincial Heritage Resources Agency (LIHRA) on behalf of Ivanplats; and
- Based on the comments received from SAHRA and/or LIHRA, the project archaeologist will provide Ivanplats with a Terms of References Report and relevant associated costs if necessary.

**Chance Find Procedures: Burials and Graves**

In the event that previously unidentified burial grounds and graves are identified and/or exposed during construction or operation of the Platreef Project, the following steps must be implemented subsequent to those outlined above:

- The project archaeologist must immediately be notified of the discovery in order to take the required further steps:
  - The local South African Police Service (SAPS) will be notified on behalf of Ivanplats;
  - The project archaeologist will inspect the exposed burial and determine in consultation with the SAPS if any additional graves may exist in the vicinity as well as the temporal context of the remains, i.e.:
    - forensic
    - authentic burial grave (informal or older than 60 years, NHRA (1999) Section 36); or
    - archaeological (older than 100 years, NHRA (1999) Section 38);
- Should the specialist conclude that the find is a heritage resource protected in terms of the NHRA (1999) Section 36 and NHRA (1999) Regulations (Regulation 38, 39, 40), the project archaeologist will notify SAHRA and/or LIHRA on behalf of Ivanplats;
- SAHRA/LIHRA may require that an identification of interested parties, consultation and /or grave relocation take place;
- Consultation must take place in terms of NHRA (1999) Regulations 39, 40, 42; and 5. Grave relocation must take place in terms of NHRA (1999) Regulations 34.

**CONCLUSION**

The Chance Find Procedures presented in this document serve as international best practice policy for the accidental discovery of heritage resources and burial grounds and graves. Based on the definitions provided within this document and the proposed lines of communication, Ivanplats will be able to mitigate the accidental discovery of heritage resources and burial grounds and graves throughout the various phases of the project.

The project archaeologist will be available to assist with the recommendation of mitigations for the accidental discovery of heritage resources and burial grounds and graves.



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