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Oversel Zwartfontein Potgietersrus Platinum

TO:

SRK CONSULTING ENGINEERS AND SCIENTISTS
POTGIETERSRUS PLATINUM MINE

A CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE
PROPOSED OVERYSEL ZWARTFONTEIN (PPRust NORTH)
PROJECT. AMENDMENT TO POTGIETERSRUST PLATINUMS
LTD'S (PPRust) ENVIRONMENTAL MANAGEMENT
PROGRAMME REPORT (EMPR)

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Appendix H: Cultural heritage impact assessment

EXECUTIVE SUMMARY

The Potgietersrust Platinum Mine intends to develop new open pits, waste rock dumps, mining infrastructure and a tailings dam on the farms Overysel 815LR, Zwartfontein 818LR and Blinkwater 820LR in the Potgietersrust (Mokopane) District of the Northern Province of South Africa. The Potgietersrust (Mokopane) area has a rich cultural heritage that includes a wide range of heritage resources ranging from the prehistoric period through to the Stone Age, the Iron Age and the historical (colonial) period.

The study area was subjected to a cultural heritage impact assessment in order to establish the presence of all possible ranges of heritage resources and sensitive remains in the study area. Data derived from a survey of literature, an archaeological data base, interviews with spokespersons, a census on graves compiled by PPRust, as well as a survey with a vehicle and on foot, were utilized to assess the cultural heritage potential of the study area.

The assessment revealed the presence of a scatter of stone tools and iron slag, dating respectively from the Stone Age and from the Iron Age, near the proposed open pit. The survey also indicated that dwellings and homesteads dating from the historical period (older than sixty years) and from the relatively recent past (not necessarily up to sixty years old) occur in the study area. Many of these remains have been destroyed by 'normal' developmental activities. Some, however, still exist on Blinkwater. The study area also contains a large number of graves and cemeteries dating from the relatively recent past. The heritage resources and graves have been tabulated and their levels of significance have been determined (Tables 1 & 2). Only the graves and cemeteries have a high significance. As the co-ordinates for all heritage resources and graves have been incorporated in a GIS database maintained by PPRust, the co-ordinates for the heritage resources and the graves and cemeteries were not repeated in this report.

(The peripheral area [outside the study area] also contains heritage resources, such as Iron Age sites, dwellings and homesteads dating from the historical and recent past as well as graves and cemeteries.

The proposed Overysel Zwartfontein (PPRust North) Project will impact on these heritage resources and graves in the future. Recommendations therefore have been made for the mitigation of these resources and graves).

Other heritage resources and graves may not have been discovered during this investigation. Mitigation measures, therefore, have been provided for all possible types of heritage resources which may exist in the study area and which may be uncovered during the construction, operation or closure of the mine (Figure 3).

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1 TERMS OF REFERENCE

This document contains the report on the results of a cultural heritage impact assessment study, contracted by SRK Consulting in the Northern Province of South Africa. Parts of the Northern Province, such as Pietersburg, Potgietersrus, Phalaborwa, the Blouberg Mountains, Louis Trichardt, the Steelpoort valley and areas to the north and south of the Soutpansberg have been explored for cultural heritage remains in the past. These explorations have shown that the Northern Province has a rich archaeological heritage, comprising remains dating from the prehistoric and the historical past. Prehistoric and historical remains in the Northern Province reflect the cultural heritage of most cultural groups living in South Africa today.

Potgietersrus Platinum Mine (PPRust) intends to establish a new open pit, a tailing dam, waste rock dumps and other mining infrastructure on the farms Overysel 815LR, Zwartfontein 818LR and Blinkwater 820LR in the Northern Province of South Africa. In order to comply with legislation, PPRust requires knowledge of the presence, relevance and the significance of any heritage resources that may occur in or near the study area. The mine needs this information in order to take pro-active measures with regard to any heritage resources that may be affected by the new development. SRK Consulting therefore commissioned Dr J Pistorius to undertake a cultural heritage impact assessment study of the study area with the following objectives:

- to establish whether any heritage resources do occur in/near to the study areas and, if so, what the nature, the extent and the significance of these remains are;
- to determine whether such remains will be affected by the proposed development activities; and
- to evaluate what appropriate actions could be taken to reduce the impact of development activities on such remains.

This report therefore outlines the types of heritage resources and graves that were discovered in and near the study area and the level of significance of these remains. The report indicates that these remains will be affected (destroyed) by the development project and provides mitigation measures that can be implemented to minimise the effects of the proposed development on the remains identified in the study area. Mitigation measures are also proposed for heritage resources that have not been discovered during this study but which may be uncovered during the development project.

2 METHODOLOGY

2.1 Sources of information

2.1.1 Survey of literature

To establish the possible presence of heritage resources in the study area a literature survey was done, databases on heritage resources were consulted and surveillance aids such as maps were consulted. The survey of literature pertaining to the broad cultural history, ethnography and archaeology of the study area was done in order to contextualise the study area with regard to the presence of humans, cultures and important events in time and space. This provided, although only a broad framework, a sense of the presence of humans and their interaction with the broader environment, therefore also with the study area from the earliest times. This regional historical (chronological) overview of the wider area was linked to the possible ranges of heritage resources one would expect to find in the study area.

2.2.2 Databases

Information derived from databases kept and maintained at institutions, such as the South African Heritage Resources Agency (SAHRA) and the National Cultural History Museum in Pretoria, were used to determine whether any heritage resources have been identified during field surveys or post-graduate studies in the study area. The author has himself completed at least three field surveys in the immediate surroundings of the study area (see Part 7, 'Bibliography').

2.2.3 Maps

Since the early second half of the 1990s PPRust has surveyed and mapped the presence of graves and cemeteries on Overysel 815LR, Zwartfontein 818LR, Vaalkop 819LR and Sandsloot 236KR. A team under Mr. Solly Maleluke has tirelessly, sometimes with the aid of spokespersons, attempted to locate all possible graves and cemeteries in existing and future mining areas. The co-ordinates for these remains are incorporated in the GIS database of PPRust's survey department. Maps, indicating the spatial occurrence and distribution of graves and cemeteries, are therefore readily available when required. The co-ordinates of graves and cemeteries that were discovered during *this* investigation were incorporated in the GIS database.

2.2.4 The survey with a vehicle and on foot

The proposed study area was also subjected to a survey with a vehicle, where accessible routes exist, and with a survey on foot. The survey with a vehicle included a visit to the peripheral area in order to gain a better understanding of the nature and context of the study area. The survey on foot confirmed the presence of graves and cemeteries recorded by PPRust, but also identified a number of new graves on Blinkwater 820LR.

2.2.5 Interviewing local spokespersons

Various spokespersons were interviewed at random while traversing the study area. Local people were well aware of the presence and locations of graves and cemeteries. Two security guards, Ruben Poto and Esaia Ramaoka, escorted the author on his fieldwork trips and assisted with interviewing the local people with regard to the possible presence of graves, initiation sites and other heritage resources.

People who were interviewed included three boys, namely Calvin Molwatsi, Nikiaas Mokwena and Siphon Notwane, who knew the Oversel area very well. A young boy, Adolf Setšiba, identified a grave under a Marula tree on Zwartfontein 818LR, where some of the new mining Infrastructure will be built. Jan Tefu, a 86 year old inhabitant of Ga-Puka, identified graves and villages dating from the relatively recent past on Blinkwater. These remains will all be affected by the proposed new tailings dam.

2.2 Assumptions and limitations

The survey probably did not detect all possible heritage resources and graves, given the size and extent of the study area. While certain remains may simply have been missed during this survey, others may occur below the surface of the earth and may only be exposed once development (such as mining) commences. The mitigation measures proposed, therefore, have considered all possible ranges of heritage resources that may exist in the study area, but which may be uncovered only during the construction, operation or closure of the mine (see Table 3).

Large parts of the study area were utilised for agricultural purposes in the past. Heritage resources will be destroyed (affected) in these areas and it was deemed not necessary to survey these areas due to time constraints. It is, however, possible that dwellings (with family graves) may exist on small pieces of land that have not been disturbed by the agricultural activities.

The position of smaller cemeteries and single graves in the study area can be problematic with regard to a number of issues. Graves are not always clearly marked. Some markings comprise merely stone edgings or a few stones placed on a grave. Graves that are unattended may be covered with soil or vegetation, while markings on graves may be disturbed. It is also possible that some individual 'graves' in fact may not represent graves at all. The majority of the graves that have been identified, however, occur in cemeteries. The number of single and scattered graves throughout the study area, in general, is low.

The degree and magnitude of the impact of the proposed Overyssel Zwartfontein Project on heritage resources, graves and cemeteries must not be underestimated. The development will affect all of the heritage resources, graves and cemeteries that occur in the study area. It is therefore clear that the optimal mitigation measures available for (significant) heritage resources and graves and cemeteries have to be implemented

2.3 Some remarks on terminology

The cultural heritage assessment referred to in the title of this report included a survey of heritage resources as outlined in the National Heritage Resources Act (Act No 25 of 1999).

Cultural heritage (or cultural resources) includes 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 may places that made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

The term 'pre-historic' generally 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 Potgietersrus area, to the first appearance or use of 'modern' Western writing brought to Potgietersrus (Mokopane) by the first Colonists who settled in this area c. 1845. The historical period for Potgietersrus therefore dates from c. 1845.

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

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

The term 'sensitive remains' is sometimes used to distinguish graves and cemeteries as well as ideologically significant features such as holy mountains, initiation sites or other sacred places. Graves, in particular, are not necessarily heritage resources if they date from the recent past and do not have tombstones that are older than sixty years.

The term Stone Age refers to the prehistoric past, although Late Stone Age peoples lived in the area well into the historical period. The Stone Age is divided in an Earlier Stone Age (3 million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years to 20 000 years ago) and the Late Stone Age (20 000 years to 200 years ago).

The term 'Late Iron Age' refers to the period between the 17th century and the 19th century and can therefore include the historical period.

The term 'project area' or 'study area' refers to the area where PPRust wants to focus its mining activities and the establishment of related infrastructure.

The 'peripheral area' refers to the area where PPRust does not intend to focus any mining activities in the near future, but which are in close proximity to the project area.

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

Phase II studies include in-depth cultural heritage studies such as archaeological mapping and excavating, the documenting of rock art/engraving sites or of dwellings or other architectural features and structures, the sampling of archaeological sites or shipwrecks, etc. Phase II work requires the co-operation and approval of the South African Heritage Resources Agency (SAHRA).

3 THE STUDY AREA

3.1 Location

The Potgietersrust Platinum Mine (PPRust) is situated approximately twenty five kilometers to the north-west of Potgietersrust (Mokopane) on the national road (R35) to Limburg and Groblershoop. The platinum mine is established on the Merensky Reef, locally and historically known as the 'Platreef' that was discovered in the 1920's by Hans Merensky. The mine is located on the farms Vaalkop 819LR and Sandsloot 236KR and intends to expand to the adjoining farms Zwartfontein 818LR, Blinkwater 820LR and Overysel 815LR, hence the motivation for this cultural heritage impact assessment study.

Geographically, PPRust is located in the Mokopane District of the Northern Province. The mine is surrounded by communities whose ancestors was once part of the sphere of influence of the Langa Ndebele, a community whose origins can be traced to a Nguni (Kwa Zulu/Natal) ancestry. The Langa Ndebele incorporated, over centuries, numerous Sotho and other speaking clans while occupying villages and homesteads in the territory where the PPRust today mine its platinum resources.

Towns that surround the mining area include Ga Tshaba and Mapela and Ga Mosoga, to the north-west, and Sekuruwe and Mašašane to the north-east. The descendants of the Ledwaba/Maune Ndebele clans live in the Bergzicht-Kalkspruit and Mašašane townships to the east.

Few outstanding geographical features occur in the study area, except the magnificent Matlotlo Mountains. A series of hills running westwards and parallel to the proposed new mining area, but in the peripheral area, as well as the Mohosane and the Sandsloot Rivers situated to the south of the Matlotlo Mountains, are the most prominent features close to the study area. The Magalakwena River flows further to the west, also in the peripheral area, away from the study area. The range of hills to the west of the study area contains numerous settlements, such as Segopa, Magope, Fonthane, Mathogo, Ditlotswane, etc. that can historically (during the 16th to the 20th centuries) be associated with the Langa Ndebele.

PPRust intends to establish new mining infrastructure on the farms Overysel 815LR, Zwartfontein 818LR and Blinkwater 820LR. This infrastructure will consist of an open pit (extending over the farms Overysel and Zwartfontein), stretching westwards along the Matlotlo Mountains, and rock waste dumps situated to the west and parallel to the open pits. A rock waste dump has also

been proposed in what is the present location of the towns of Ga Sekhnaolelo and Ga Puka, covering the lower western foot of the Matlotlo Mountains. Other infrastructure that will be built includes a plant and a main store on Zwartfontein, a magazine on Overysel, as well as a tailings dam that will be built on Blinkwater. The tailings dam will cover a surface of approximately 380 hectares. The mining infrastructure will be linked with roads and services that will alter the larger parts of the natural environment of the study area into a mining landscape (Figure 1).

As the Overysel Zwartfontein Project will cover large surfaces of Overysel, Zwartfontein and Blinkwater, these areas are here collectively referred to as the study area. Individual features of the proposed project, such as the open pit or tailings dams, however, may also be used as reference whenever individual heritage resources or graves located in or near this infrastructure are referred to.

Figure 1. The study area on Overysel 815LR, Zwartfontein 818LR and Blinkwater 820LR, where PPRust intends to establish an open pit, a tailings dam, rock waste dumps and mining infrastructure.

3.2 Brief summary of the historical context of the study area

The original and present occupants of the wider study area are the Langa Ndebele. The names of some of their historical settlements appear in bold. (Also note the 1 50 000 topographical maps of the area (2428BB Timmyne; 2328DD Limburg).

The Ndebele of Langa are of Hlubi (Nguni) origin. The name of their clan, Langa, was derived from the name of their original chief (who lived during the latter half of the 17th century) when the clans were part of the Hlubi. They originated from eNgunungulovu (Pietermaritzburg) where they occupied a place known as **Langaibalele**.

The second half of the 17th century seems to have been a turbulent period in Hlubi history, as the Langa clan hived off from the main body. They were led by Langaibalele/Masebe I from Hlubi country through Swaziland. Their first significant stop was near Leydsdorp (**Mafefera**). They then moved to **Bosega**, east of Pietersburg. After a short stay, the Langa moved to Tšweu (Witkopp Mountain), a few kilometers to the south-east of Pietersburg where they remained for four generations. The chiefs who ruled and died at **Thaba Tšweu** were Masebe I, Mapuso, Podlie and Masebe II.

Seritarita, who succeeded Masebe II at **Thaba Tšweu**, led the clan to **Maleoko** (on the farm Bultongfontein [239KR]), where he remained for three years. From here, the clan moved to **Moumong-wa-Matswake** on the farm Zuid-Holland 773LR. Their settlement was known as **Mokgokong**. Seritarita was succeeded by Mapela, son of Seritarita's third ranking wife.

Two sons of Seritarita higher in rank than Mapela, namely Mosogo and Mamaala established several villages around the royal lineage of Mapela during the 19th century, e.g. **Mabyanamatshwaana**, **Tsotsodi** and **Segodini**. Numerous smaller Sotho clans were subjugated and incorporated in the Langa tribe, e.g. the Tlhaloga Kwena of Tshaba, the Bakwena of Lelaka and the Dikgomo of Lebelo. Internal strife amongst the Phalane enabled the Langa to incorporate a section of this group, as well as the Pedi of Matlou. Also incorporated amongst the Langa were the Kwena of Ramorulane and the Hurutshse of Molokomme. Groups that voluntarily joined the Langa were the Koni of Masenya and Puka; the Tlôkwa of Pila; the people of Tshokwe and the Koni of Seema.

When he was old, Mapela moved his village to **Fothane Hills** (Moordekopje) where he died in 1825. Maleya ruled from **Ditlotswana** hills until Mankopane (the rightful heir) ousted him. The Langa stronghold, **Magagamatala**, a high flat-topped mountain with steep cliffs on Ruigtevlei 710LR, was attacked on 14 April 1858 by a punitive expedition sent by the Voortrekkers and 800 of Mankopane's subjects were killed. After the Langa's defeat, the Mankopane settled on **Thutlwane Hill** (Kromkloof 744 LR). The first mission stations of the Berlin Missionary Society were established in Langa country in 1867.

Other events were the following:

- the Langa expedition in 1837 aimed to expedite Mzilikazi's departure from what is today the North-West Province into Botswana;
- the Langa (and Kekana) were involved in the massacre of Voortrekker parties and the siege of the Makapans Caves in 1854;
- the Langa Ndebele (Lamola clan) scattered the copper miners of Mussina (Messina) with whom they bartered copper shortly before 1854; and
- the Langa subjugated the Bididi (Songwana) until 1890, exacting heavy tribute from this clan.

The second encounter between the Voortrekkers and the Langa took place in 1868. At the time, the Langa were in an alliance with the Kekana Ndebele of Mogemi (a regent for Mankopane). While the Boers besieged **Sefakaulo Hill** where Mogemi lived, Mankopane raided white farmers and outposts. The Voortrekkers attacked Mankopane at **Thutlwane** but they could not take the highest part of the mountain where Mankopane's headquarters were. The Boers could also not achieve much success with their raids on Mogemi's mountain fortress. The Voortrekkers then evacuated Potgietersrus.

Mankopane died on 30 May 1877 and was buried in his cattle kraal on **Thutlwane**. Masebe III was proclaimed chief on 3 June 1877. Sporadic wars continued between the Langa and the Kekana chiefdoms from 1883 to October 1886, when President Paul Kruger summoned the two chiefs before him.

After the death of Masebe III on 4 May 1890, a succession dispute split the tribe into two sections, namely the Ndebele of Bankeberg and the Ndebele of Hans Langa. Hans Langa became chief of the southern portion and Bankeberg of the northern portion. As the ancient grounds of Mapela (**Fothane Hill**) fall in the southern portion, this section of the Langa became known as the Bagamapela.

3.3 The altered nature of the study area (not conducive for the conservation of heritage resources)

The study area, comprising large tracts of land on Overysel, Zwartfontein and Blinkwater, has been extensively disturbed and changed by human activity. These farms have been exploited for agricultural activities for decades. These agricultural pursuits are visible on the 1983 edition of the 1: 50 000 topographical map of Limburg (1: 50 000; 2328 DD). According to an eighty-six year old local spokesperson, Jan Tefu, agricultural lands already existed before the second half of the 20th century on Blinkwater. Hunting, gathering, cultivating and stock farming therefore were for decades the main economic activities of the Langa Ndebele of Ga Mapela. Some people still depend on agriculture and stock farming to supplement their income and communities still maintain agricultural plots and utilise the veld for grazing.

In the past, chiefs allocated pieces of land to the heads of the various wards, who in turn provided plots to married men. The size of these plots was determined by the number of wives a man had, but each plot was usually one to two hectares, which is the maximum that a woman could cultivate using a hoe. The introduction of the plough allowed families to cultivate larger areas of land, up to about 4,5 hectares.

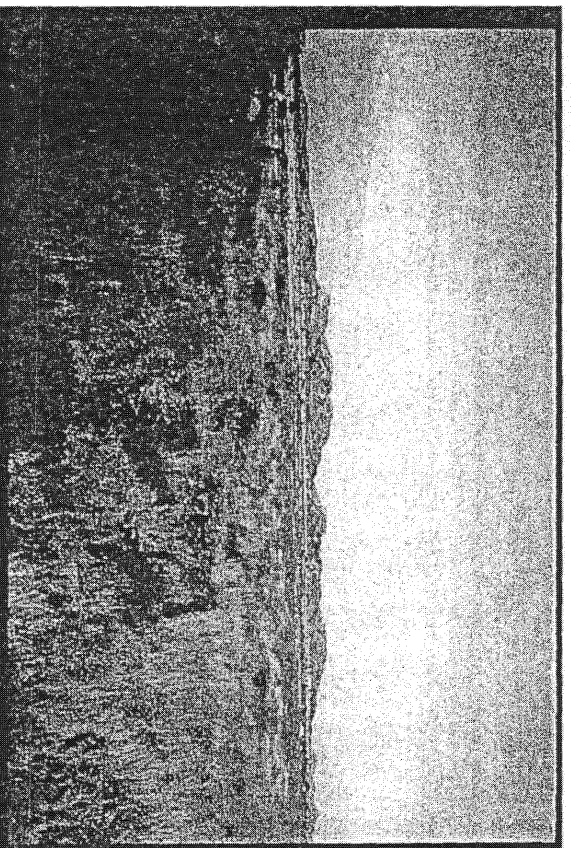
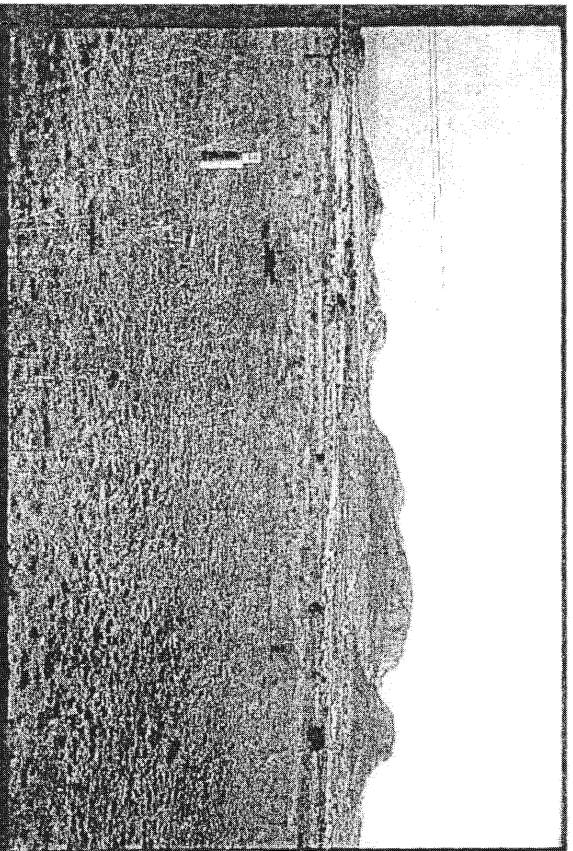
Crops included sorghum (*mabele*) and millet (*letsoa*), which were later largely replaced by maize (*mahéa*) as a staple food. Supplementary crops included pumpkins (*marotse*), various varieties of gourd (*maraka*), beans (*dinawa*) and a type of groundnut (*diflao*). Tobacco and sugarcane were also planted.

Although each person usually possessed his own stock, pasturage was used on a communal basis. At a fixed time, the tribal ruler declared the reaped grain fields open for use as winter grazing. Grazing cattle in particular disturbs heritage resources, as deposits on sites are churned under the hoofs of the cattle and low stone foundations are broken and scattered.

The scarring effect of earlier ploughing is visible where the veld is cleared from trees and other bush. Open patches of land covered only with grass mostly represent old agricultural fields. At least one soil dam that was used to store running water from the higher Matlotlo Mountains and used to cultivate fields was found on Blinkwater. The tilling of fields in more recent times may have covered graves near old abandoned villages. At least one instance is known to the author where people who had left the area came back to visit the graves of relatives, but who could not find the graves as they have been ploughed under.

3.4 Visual presentation of the study area

Figures 2 & 3. A panoramic view of the study area as seen from the north-east (left) and from the far north-west (right). PPRust's proposed new mine will be located to the west and to the south of the Matlotlo Mountains.



Figures 4 & 5. Large parts of Overysel and Zwartfontein, where the open pit will be located, have been used for agricultural fields in the past (left and right) and contain no heritage remains of significance. A few stone flakes (mostly waste products) and iron slag have been found near the pit. Potsherds, iron slag or stone tools that are found in these ploughed areas, however, are from an archaeological point of view considered 'out of context' and of little use for scientific investigation.

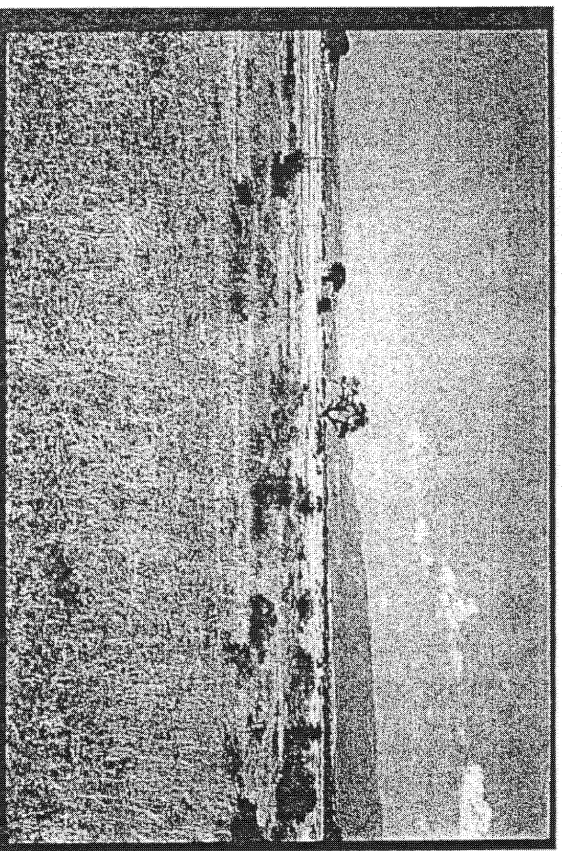
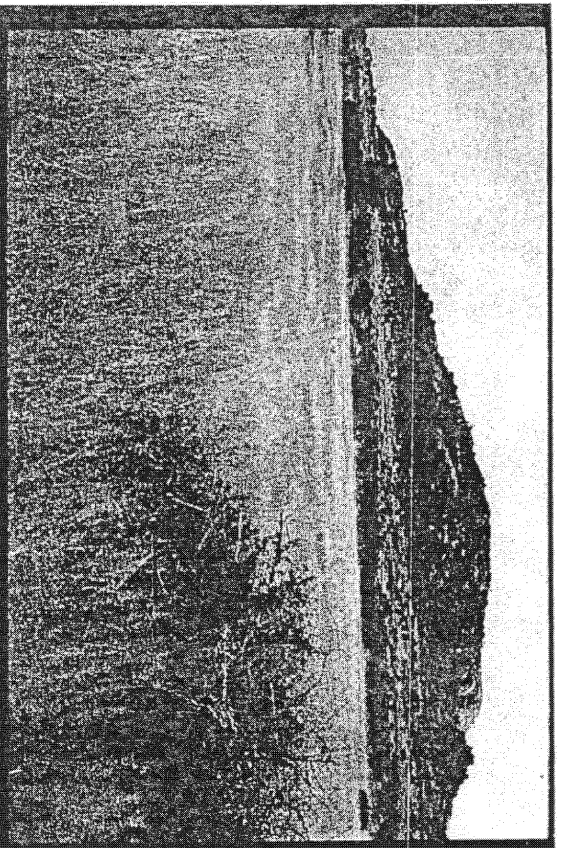
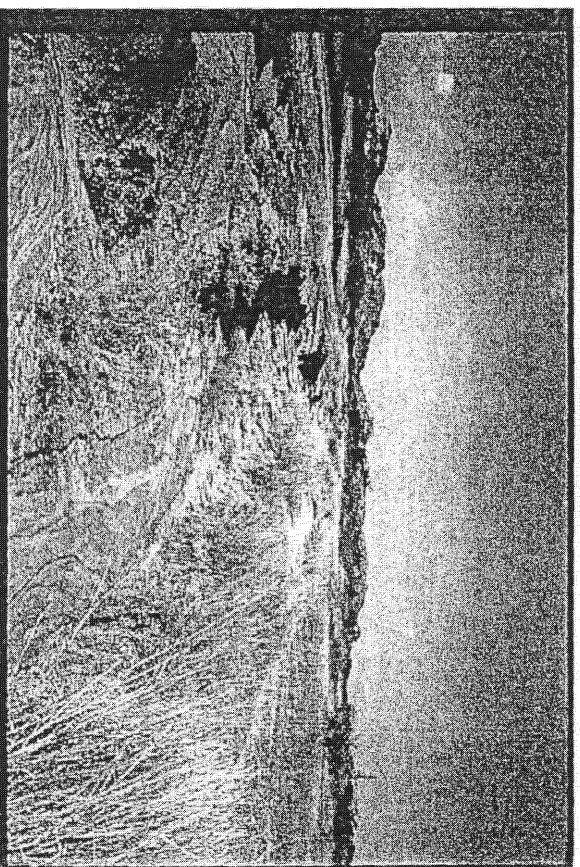
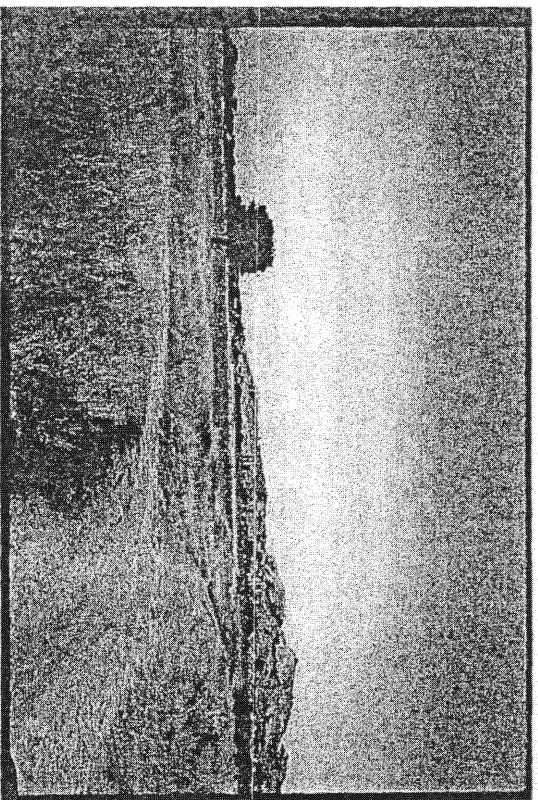


Figure 6 & 7. The main dirt road leading to the villages against the western foot of the Matlotlo Mountain have divided into numerous smaller secondary roads. These roads have, together with footpaths, scarred the study area. Some of the roads promote erosion (left).



Figures 8 & 9. Erosion, caused by water running from the higher Matlotlo plateau, has cut dongas through the open pit area and the proposed new tailings dam area on Blinkwater. These dongas join the Sandsloot further to the south. Some of the dongas on the western slopes of the Matlotlo Mountains, where the open pit will be developed, are broad and deep.

Some of these water courses may be hundreds of years old and may expose stone tools dating from the Stone Age and even Early Iron Age sites (although these are not expected in the study area). Stone tools were observed in at least one locality in these dongas.

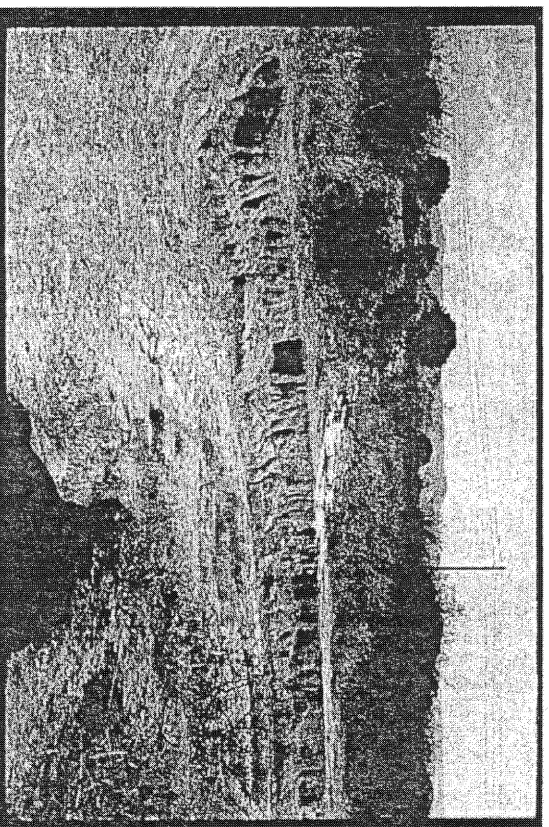
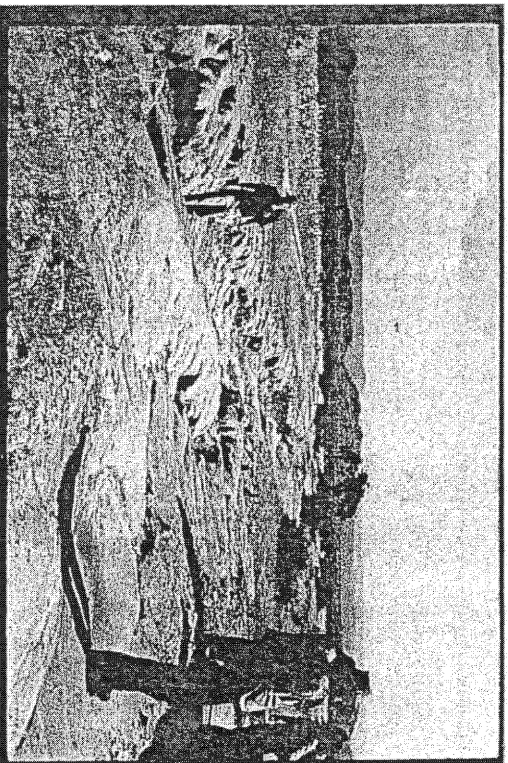
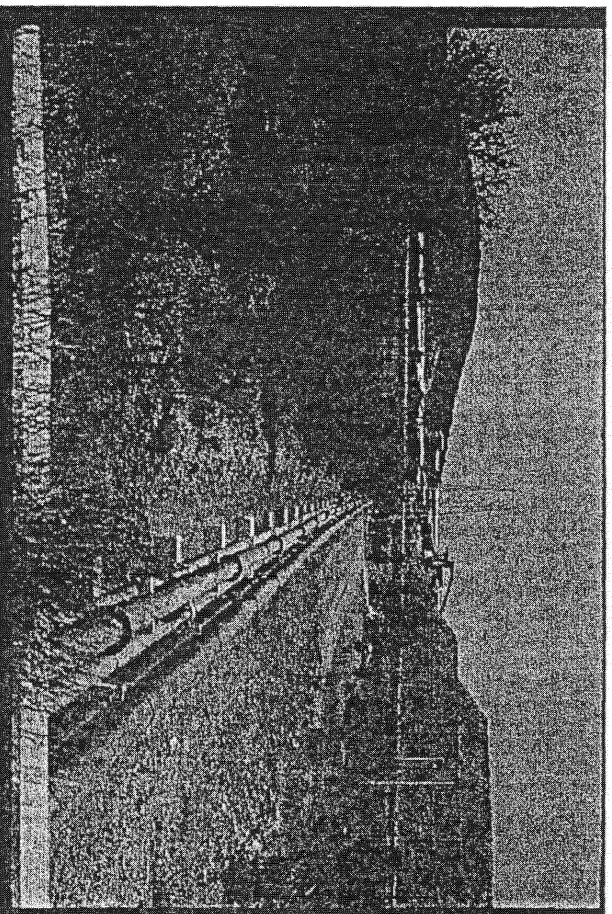
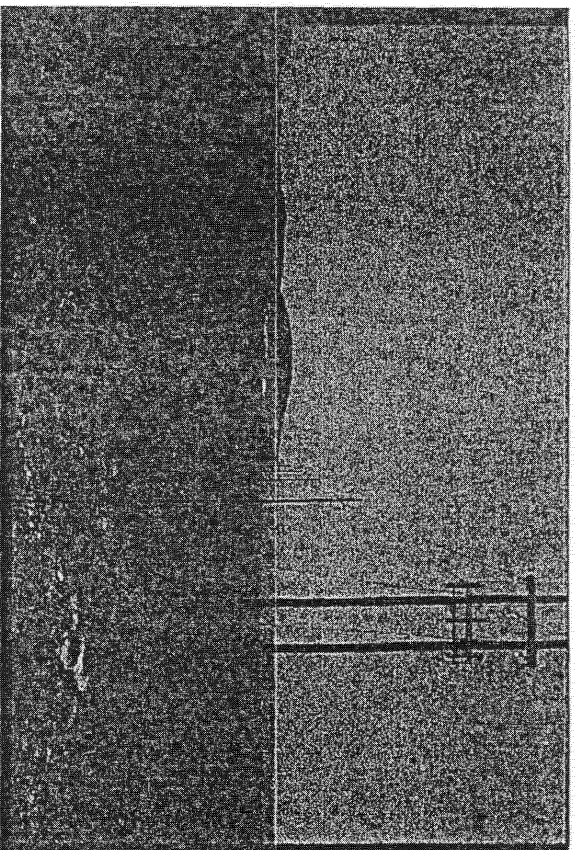
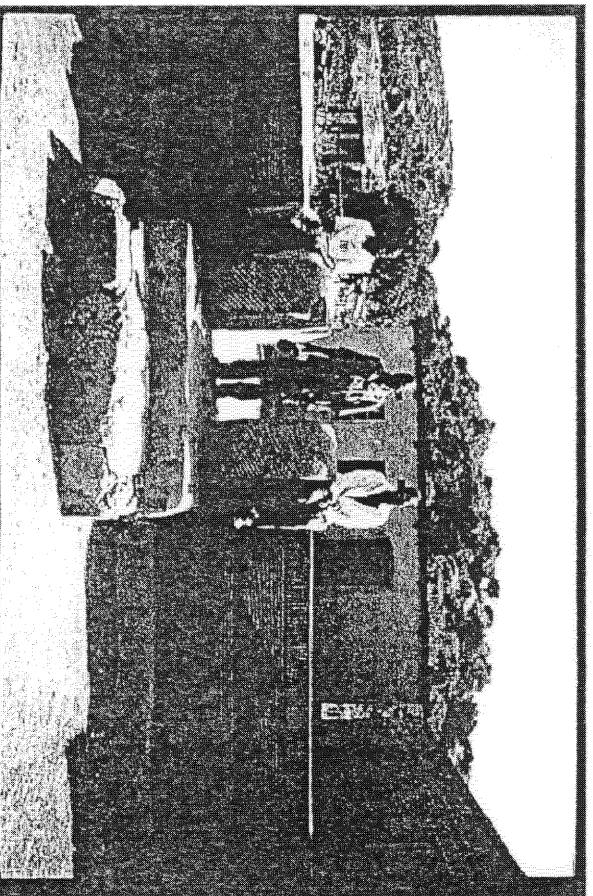
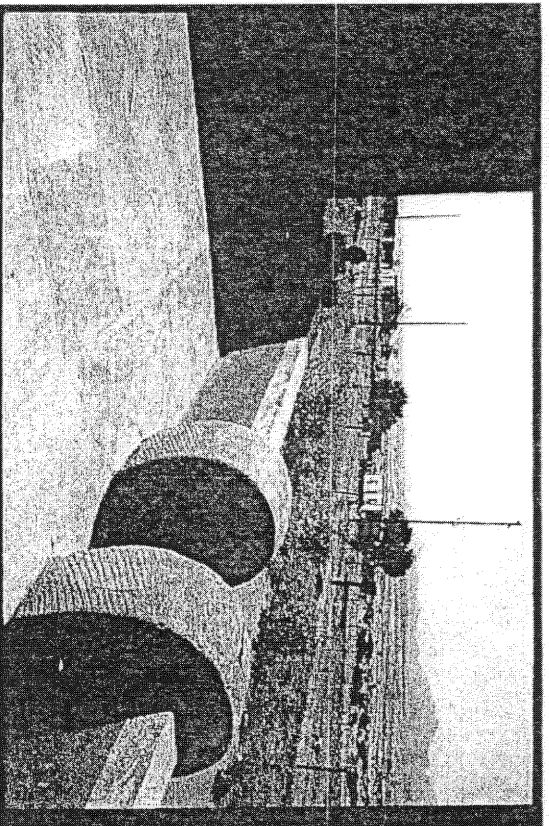


Figure 10 & 11. Human built features such as a soccer field, transmission lines, pipelines running from the existing mine, furrows and shacks have altered the natural character of the study area (left and right).



Figures 12 & 13. The Ga Puka and Ga Sekhaelelo towns along the foot of the Matlotlo Mountain contain dwellings with a unique indigenous architecture. These dwellings are mostly rectangular, are multi-component and arranged around inner courtyards. Notable features of the houses are elaborately constructed entrances with walls which are sometimes decorated. (Note how the floor of the inner courtyard of the dwelling photographed [below] has been smeared with cattle dung).



4 ASSESSMENT OF THE HERITAGE POTENTIAL OF THE STUDY AREA

4.1 Heritage resources in the study area

Very few heritage resources were discovered in the study area. However, sensitive remains, consisting of graves and cemeteries, were present in substantial numbers in the study area. The heritage resources and graves are briefly discussed. The graves and cemeteries have also been tabulated (Table 1), while their location in the study area, together with those of the heritage resources, are indicated in Figure 14.

4.1.1 Stone Age sites

It can be accepted that stone tools dating from the Stone Age may exist on a larger scale than the mere one site discovered in the study area, particularly when considering the fact that the study area incorporates approximately two thousand hectares of land.

A few stone tools were observed in a donga near the open pit. The number of tools observed, however, was limited. The Stone Age material also included waste material, which indicated that the tools may have been manufactured 'on site'. The tools may date from the later parts of the Middle Stone Age (approximately 100 000 to 20 000 years ago).

4.1.2 Iron Age sites

Iron slag and potsherds (probably Late Iron Age) were found in a donga where it was exposed by erosion. No remains of furnaces were found. These remains occur where the open pit will be developed.

No conclusion regarding the origin, meaning and significance of the material could be made.

4.1.3 Historical sites and sites dating from the relatively recent past

Numerous historical sites and dwellings (dating from the 20th century) and sites or dwellings dating from the relatively recent past (not necessarily older than sixty years) occur in the study area. The farms Overysel, Zwartfontein and Blinkwater have been occupied for decades. Many of these sites and dwellings, however, have been destroyed by 'normal' development such as the abandoning of homesteads and villages, the building of roads, the preparation of

new agricultural fields and during the provisioning of basic services. Villages and homesteads have also, from time to time, being removed to make way for mining development.

A number of these villages have been recorded on Blinkwater (together with graves and cemeteries). These villages and homesteads are close to sixty years old and may, in some instances, be older. These remains, however, are not considered as significant when considering criteria such as the uniqueness (scarcity), cultural historical significance, aesthetic appearance, or architectural design of these structures. These remains also have little research value, as they are dilapidated. More value could be gained from a research project aimed at documenting the unique architectural features of some of the (historical) dwellings in the Ga Puka and Ga Sekhaelelo villages.

4.1.4 Graves and cemeteries

A substantial number of graves and cemeteries occur on Overysel, Zwartfontein and Blinkwater. PPRust's survey department has mapped the majority of these features. However, as pointed out previously, it can be accepted that some graves may not have been noted during the grave census. The graves and cemeteries that have been recorded have been tabulated in Table 1 and are indicated in Figure 14. Only the graves and cemeteries on Blinkwater are discussed as they have not yet been recorded by PPRust. The co-ordinates of all the graves and cemeteries have been incorporated in PPRust's GIS data base and are not repeated in this report.

4.1.4.1 Graves and cemeteries on Blinkwater

The proposed new tailings dam will be situated on the south western portion of Blinkwater 820LR and will cover approximately 380 hectares of land. Several villages that seem to have been abandoned during the 1950's occur in or near the proposed new tailings dam. The majority of these villages are associated with individual graves or with small family cemeteries. The following villages, cemeteries and individual graves were discovered in this area:

Jan Tefu's village

Jan Tefu, who lives in Ga Puka, occupied this village together with other family groups. These families were known as (not necessarily spelled correct): Molamo, Kutumela, Kimabela, Kipagadi, Kilanga and Matloung.

Jan Tefu was born in 1916 and is therefore 86 years old. This site is associated with two abandoned villages and three small cemeteries.

The individual graves, cemeteries and remains of villages that were discovered included the following:

A first village

The remains of this village comprise of at least six to seven dwellings, a cattle kraal and a piece of agricultural land. The dwellings were built with mud and with stone. Some of the dwellings may have been circular in shape (such as huts), while others had square plan forms. Two cemeteries were found in association with this village.

A graveyard for children and a graveyard for adults

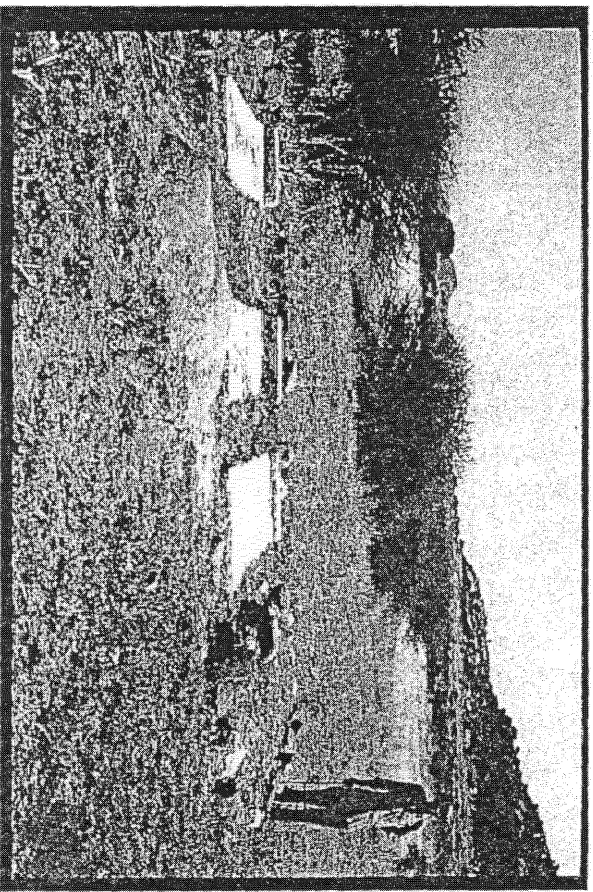
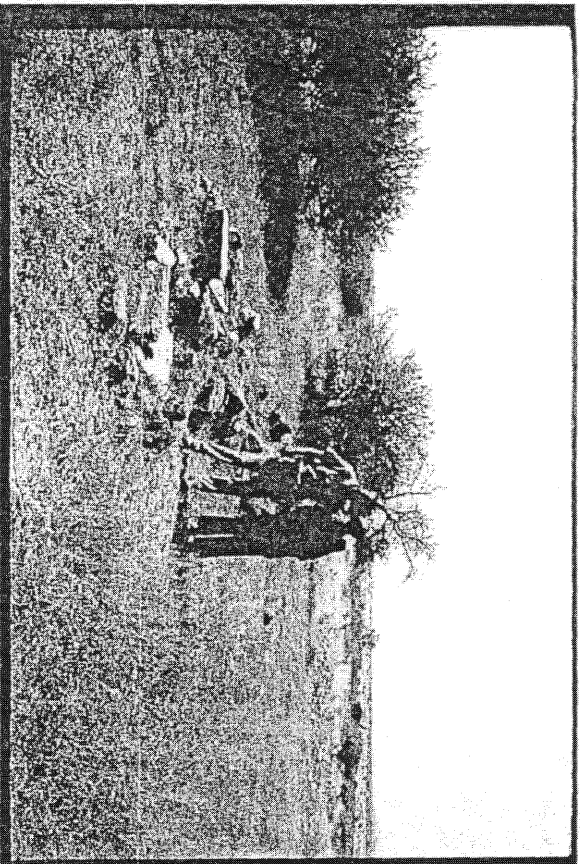
The two cemeteries found in association with the first village consisted of a graveyard with the remains of five children. Two of the graves are covered with cement slabs. The remaining three graves are demarcated with stone edgings.

The second graveyard contained the remains of four adults. The deceased include the following family members of Jan Tefu: his mother (Ramakgemetsha), his grandfather (Masobane Tefu), his grandmother, his father (Aalwyn Madimetsha) and his brother's wife (Ramaselela).

A second village

A second village is associated with the first village. According to Jan Tefu this village consisted of at least five dwellings. Two heaps of soil mark the former presence of two of the dwellings of this village. This village is associated with a graveyard for children.

Figures 15 & 16. The graveyards for children (above) and for adults (below) on Blinkwater 820 LR that are part of the village once occupied by Jan Tefu and other families.



A graveyard for children

This graveyard contains three graves of children of Jan Tefu's brothers and sisters. Although these graves are marked with stone linings they are not easily recognisable.

A Changaan village

In close proximity to Jan Tefu's village, a Changaan community occupied a village that is associated with a few graves. The Changaan village housed as many as ten families with the following names (not necessarily spelled correctly): Nkuna, Maluleka, Tolo, Shelenge, Boloi, Ngobeneni and Nyoni. It seems as if the descendants of these families have moved out of the area. This village consists of the following remains:

The village: the remains of several heaps of soil attest to the former existence of this village. The following graves are located in close proximity to the village.

- ♦ *The Nyoni grave*: this grave is covered with a cement slab with the inscription 'Nyoni'.

A Baloyi and a Ngobeneni grave: two graves covered with cement slabs. The one grave is that of a 'Baloyi' and the second that of a 'Ngobeneni'.

A single grave: this grave is located in a dense clump of bush and therefore is barely recognisable. It is also covered with a cement slab with the following inscription partly visible:

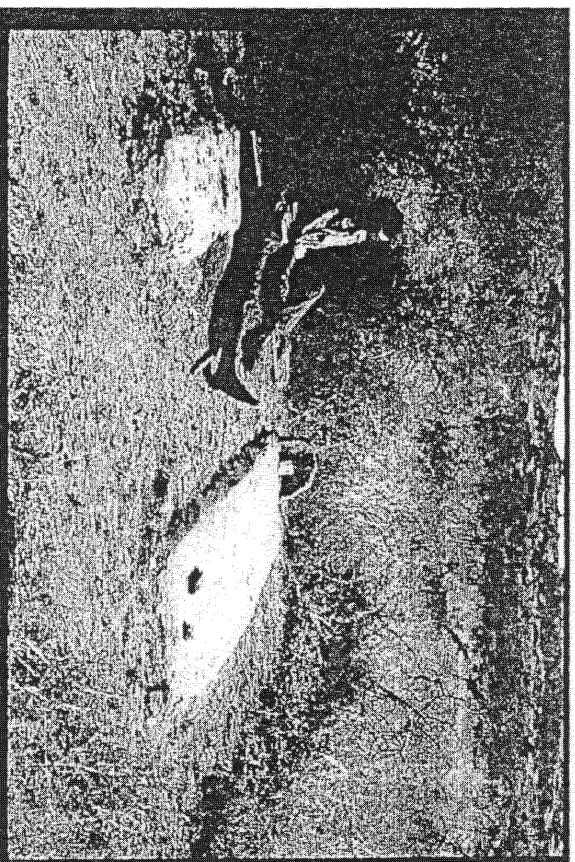
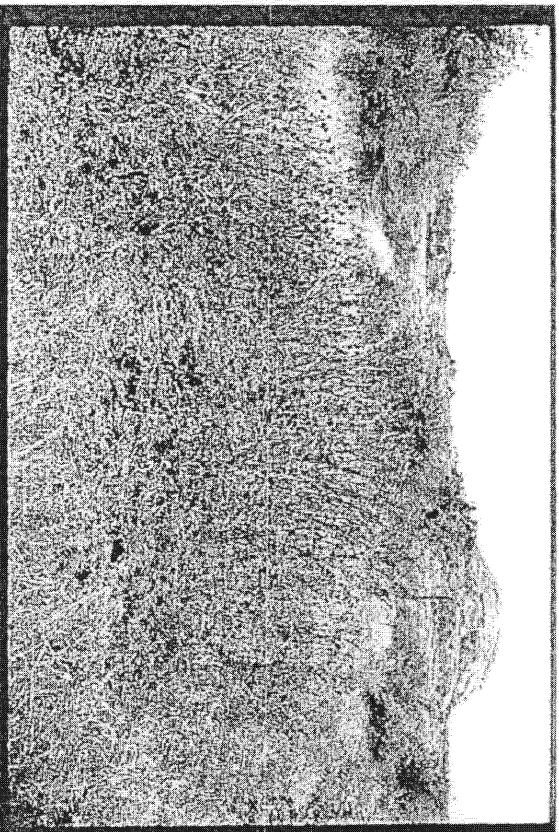
'HE VEKE (which means one week)

HI MAAKA' (which refers to the Nyosi Changaan)

A Ngobeneni grave: this grave is barely visible and merely consists of two visible stones next to an ant heap that is situated in close proximity to a large Marula tree.

A graveyard for Changaan children: this graveyard contains the remains of children of the Changaan community. The graves are outlined with stones but not all the graves can clearly be distinguished. At least four or five children were buried in this graveyard.

Figures 17 & 18. The remains of the Changaan village (above) and two graves covered with cement slabs (below). The one grave is that of a 'Baloyi' and the second that of a 'Ngobenl'.



The Ramatswi village

The Ramatswi family occupied this small village which has no graves associated with it. The village is associated with only a single large heap of soil.

The Maakamedi village

This village consists of the remains of dwellings and a grave.

The village

The remains of this village consist of at least two heaps of soil. The fields that were cultivated by this family are still visible as are delineated with lines of aloes.

A single grave

This single grave is located under a large Marula tree and is outlined with stones.

The Mmamasela village

This family lived next to the Maakamedi family and also cultivated fields. Their village is located close to a circular dam (diameter, approximately 12 m) built with soil in which water, running from the Matlotlo Mountains, was stored. The water was used to irrigate their crops. A second structure close to the Mmamasela village is the square foundation (12mx8m) of the Zion church that used to serve the religious beliefs of the communities in the area.

The village

The remains of this village are marked by at least one prominent heap of building material consisting of cement and bricks. A part of a possible square foundation consisting of upright stones marks a second structure that is associated with this village.

The grave

The grave is outlined with stones and covered with a heap of soil. It is not clearly visible.

The Nkona village

The village

This village is located close to the dirt road that runs from the Groblersbrug road into Ga Phuka village. The remains of this village are not clearly visible anymore. It may have been damaged when the soil around the village was ploughed. Grey ashy deposits may be associated with the dwellings and other features of this village. The village site is associated with a single grave.

The grave

This grave is situated near a large Marula tree. It is clearly outlined with a cement border and contains a tombstone without any inscriptions.

4.2 Heritage resources in the peripheral area (outside the study area)

The following ranges of heritage resources and sensitive remains occur in the peripheral area (outside the study area). These resources and graves are not discussed in detail as they fall outside the scope of this study. Considering the magnitude of the Overysel Zwartfontein (PPRust North) Project and its overall impact on the area, however, these remains are briefly summarised here.

4.2.1 Stone Age sites (including rock paintings)

Stone tools may be found near the Sandsloot River and the Mochosane River further to the south of the study area or near other prominent dongas where they may have been exposed by erosion activities.

Rock paintings occur within the Masêbê Nature Reserve further to the north.

4.2.1 Iron Age sites

The only Early Iron Age site so far recorded in the Potgietersrust District is a site that was excavated in the 1980's at Ficus Cave, near Potgietersrus. It is therefore unlikely that Early Iron Age sites will occur in the PPRust study area. These sites may occur closer to where the Magalakwena River joins small rivers and tributaries on its way to the Limpopo River in the north.

It is possible that Late Iron Age sites consisting of stone walls (ruins) may occur along the base line and at higher altitudes of the Matlotlo Mountains. PPRust's surveyors have mapped three 'ruins' in the Matlotlo Mountains. These remains may either date from the historical period or from the Late Iron Age. Such remains, if they existed, would have been destroyed on the northern, western and southern slopes of the mountain when Ga Puka and Sekhaelelo were developed.

The Matlotlo Mountains are part of the peripheral area and are not presently endangered by the proposed development. The mountains, however, must be surveyed before the proposed development may affect any remaining Late Iron Age sites or features, such as initiation cairns. (The latter is stone structure used

during initiation schools for boys. They are usually located in private, secluded areas, such as on mountains).

4.2.3 Historical sites and sites dating from the relatively recent past

A number of dwellings with associated infrastructure (kraals, fields, etc) that qualify as historical structures (because they are close to sixty years of age) still exist in Ga Puka and Ga Sekhaolelo. Not all of these structures, however, can be considered as historical significant. The indigenous architecture of some of these dwellings, nevertheless warrants proper documentation before these dwellings are demolished. The Ga Puka and Ga Sekhaolelo villages, are located in the peripheral area and fall outside the scope of this study.

4.2.4 Graves and cemeteries

A considerable number of graves and cemeteries occur in the peripheral area, outside the study area. These graves be summarised as follows:

- Four graves located near Borehole P81 on Vaalkop 819LR near the proposed new Zwartfontein South open pit.
- Three new sites with graves recently discovered by a team of PPRust on the eastern part of Zwartfontein.
- One modern, formal graveyard on Drenthe 778LR, located to the north-west of Ga Sekhaolelo.
- A single grave located next to the dirt road between Ga Puka and the national road to Groblersbrug. This grave is located near the Groblersbrug road.
- The grave of Jim Mutshinya situated close to the dirt road between Ga Puka and the Groblersbrug road. This grave is neatly maintained and fenced in. Its tombstone bears the following inscription:

Jim Mutshinya

B 25081904

D 05071960

Mes: kha vha edele

Nga Mulalo Ram bau

5 THE IMPACT OF THE PROPOSED NEW DEVELOPMENT ON HERITAGE RESOURCES AND GRAVES

5.1 Heritage resources and levels of significance

The survey of the study area covering the open pits, waste rock dumps, tailings dam and the area where mining infrastructure will be established, indicated that a limited range of heritage resources were present in these areas, although the study area covers a considerable surface area. Graves and cemeteries, however, were recorded in a relatively large number in and near the study area. The small range of heritage resources discovered in the study area may be attributed to the fact that large parts of the study area were utilised for agricultural purposes in the past. It is also possible that heritage resources and graves may have been missed during the survey.

The heritage resources that have been discovered in the study area are listed in Table 2. This table also outlines the level of significance of these remains and the degree (or severity) of impact that these remains will experience with the proposed new development. Three levels of significance were used to grade the heritage resources, namely 'high', 'medium' and 'low'. These levels of significance were determined by considering criteria such as the ideological/symbolic, and aesthetic values, uniqueness, cultural historical value, the state of preservation and the research value of the different types of heritage resources.

The graves and cemeteries have high levels of significance while the single Stone Age site and the (single) Iron Age site have been allocated a low significance. The villages and homesteads on Blinkwater dating from the relatively recent past, or which may approach sixty years of age, have been rated of low significance. However, some of their counterparts in the Ga Puka and Ga Sekhaolelo villages, outside the study area, are rated of high significance and mitigation measures have been recommended for those dwellings and homesteads that are worth documenting.

5.2 Legislation, mitigation and heritage resources

The *status quo* of the heritage resources and graves in and near the open pit is determined by cultural heritage legislation. A synopsis of all legislation relevant to the mitigation of the heritage resources and graves is outlined in an Appendix. Mitigation measures also have to be implemented whenever hitherto undiscovered heritage resources or graves are (accidentally) discovered during

the construction, operation or closure of the proposed new mine. Consequently, mitigation measures have been spelled out with regard to all types of heritage resources that may be discovered when the proposed new mine is developed or in operation (Table 3).

6 RECOMMENDATIONS

Considering the historical context of the wider area, it is clear that the PPRust study area has a rich cultural heritage. This has been amply proven by the presence of heritage resources and sensitive remains in and near the study area. The single Stone Age and Iron Age sites, as well as the graves and cemeteries discovered in the study area, will be affected when the proposed new development commences. Heritage resources as well as graves and cemeteries also occur in the peripheral area (outside the study area). Although these remains fall outside the scope of this study there is little doubt that these remains will also be affected (directly or indirectly) by the proposed Overysel Zwartfontein (PPRust North) Project, considering the magnitude and extent of this project.

Legislation requires mitigation whenever heritage resources or sensitive remains are to be affected by development activities. The relevant legislation includes the National Heritage Resources Act (Act No 25 of 1999), the Ordinance on Exhumations (Ordinance No 12 of 1980) and the Human Tissues Act (Act No 65 of 1983 as amended). Mitigation measures are therefore proposed with regard to heritage resources and sensitive remains (in and outside the study area) that may be affected by the proposed Overysel Zwartfontein (PPRust North) Project. It is also possible that heritage resources and graves not yet discovered during this study may be uncovered when the new mine is in construction, in operation or when the mine is closed in the future. Mitigation measures have been outlined for all possible types of heritage resources that may be discovered in the mining area (Table 3).

Mitigation measures that are recommended for heritage resources and graves and cemeteries located in the study area and in the peripheral area include:

- The exhumation and removal of all graves and cemeteries (study area);
- A survey and mapping of Late Iron Age sites located in the Matlotlo Mountains (peripheral area);
- The documenting of historical dwellings and homesteads in the Ga-Puka and Ga-Sekhaoleleo villages (peripheral area).

The specialists pointed out in Table 3, namely archaeologists, historical architects and forensic archaeologists, are acquainted with legislation relating to these remains and the administrative procedures to obtain the necessary

permits for mitigation. As can be seen from Table 3, mitigation measures will include actions such as the exhumation and reburial of human remains, the documentation of historical structures or the surveying and excavation of Late Iron Age settlements. Specialists to be consulted on the ranges of heritage resources that may be affected by PPRust's proposed development project are:

- Prof. Maryna Steyn, Department of Anatomy at the University of Pretoria, for the exhumation of human remains;
- Dr Julius Pistorius, the Department of Anthropology and Archaeology at the University of Pretoria, for the surveying and excavation of Iron Age settlements.
- Mr Mauriz Naude of the National Cultural History Museum in Pretoria, for the documentation of historical structures.

DR JULIUS CC PISTORIUS

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Table 1. Graves and cemeteries located in the study area that will be affected by the proposed Overysel Zwartfontein Project.

CODE OR IDENTITY	FARM	IMPACTED BY	NO OF GRAVES	COMMENTS
A	OVERYSEL	Rock waste dump	9	Cemetery
B	Ditto	Rock waste dump	5	Cemetery
C	Ditto	Rock waste dump	1	Single grave
D	Ditto	Rock waste dump	3	Three graves
E	Ditto	Rock waste dump	1	Single grave
F	Ditto	Open pit	4	Four graves
1 of 3	Ditto	Open pit	307	Cemetery
2 of 3	Ditto	Open pit	71	
3 of 3	Ditto	Open pit & rock waste dump	11	Scattered
OV New 1	Ditto	Open pit & rock waste dump	2	Two graves
OV New 2	Ditto	Open pit & rock waste dump	1	One grave
OV New 3	Ditto	Open pit & rock waste dump	9	Nine graves
New cemetery	Ditto	Rock waste dump	?	
Zwartfontein North	ZWARTFONTEIN	Open pit		
New cemetery	Ditto		?	
Grave under tree	Ditto	Mine infrastructure	1	
Grave next to road	Ditto	Open pit	1	
ZW New 1	Ditto		3?	No of graves uncertain
ZW New 2	Ditto		1?	No of graves uncertain
ZW New 3	Ditto		1?	No of graves uncertain
Zwartfontein South	Ditto		6 sites	Open pit area.
Borehole P81	VAALKOP		4	
Adult graveyard	BLINKWATER		4	
Children's graveyard	Ditto	Tailings dam	5	
Children's graveyard	Ditto	Tailings dam	3	
Changaan grave (Mr Matlana?)	Ditto	Tailings dam	1	
Baloyi grave	Ditto	Tailings dam	1	
Ngobeni grave	Ditto	Tailings dam	1	
A single grave	Ditto	Tailings dam	1	
Children's graveyard (Changaan)	Ditto	Tailings dam	5?	No of graves uncertain
A Ngobeni grave	Ditto	Tailings dam	1?	No of graves uncertain
Maakamedis grave	Ditto	Tailings dam	1	
Mamasela grave	Ditto	Tailings dam	1	
Nkona grave	Ditto	Tailings dam	1	

Table 2. Heritage resources and graves present in the study area, the level of significance of these remains and the level of impact that the Overysel Zwartfontein Project will have on these remains.

	Present (A) / Absent (A) in the study area	Level of significance	Level of impact
Graves	P	HIGH	HIGH
Stone Age	P	LOW	HIGH
Iron Age	P	LOW	HIGH
Historical sites	P	LOW	HIGH
Sites from the recent past	P	LOW	HIGH

Table 3: Heritage resources and sensitive remains that exist in and near the PPRust study area. Note the mitigation measures to be followed whenever any of these resources will be affected during the construction, operation and closure of the new mine.

HERITAGE RESOURCES	MITIGATION MEASURES	PROCEDURES	GENERAL REMARKS
Stone Age sites and scatterings of stone tools	<ul style="list-style-type: none"> Collection from surface and donation to Potgietersrus Museum Test excavations if unique Extended excavations if exceptionally unique 	<ul style="list-style-type: none"> Permit from SAHRA and collaboration with archaeologist 	One Stone Age site exists in the study area and will be destroyed by the development
Early Iron Age sites	<ul style="list-style-type: none"> Surveys and test excavations Extended excavations if unique 	<ul style="list-style-type: none"> Permit from SAHRA and collaboration with archaeologist 	It is highly unlikely that there are Early Iron Age sites in the study area
Late Iron Age sites	<ul style="list-style-type: none"> Survey and test excavations Extended excavations if unique 	<ul style="list-style-type: none"> Permit from SAHRA and collaboration with archaeologist 	No Late Iron Age sites exist in the study area
Historical sites and structures (houses, farm homesteads, etc.)	<ul style="list-style-type: none"> Documentation before destruction Restoration and utilisation Incorporation into new development schemes 	<ul style="list-style-type: none"> Permit from SAHRA and collaboration with historical architect 	Dwellings and homesteads dating from the relatively recent past and the historical period exist in the study area. Many of these remains have been destroyed. Some still exist on Blinkwater. These remains are not considered to be significant. Mitigation measures have been recommended for dwellings and homesteads in Ga-Puka and Ga-Sekhaolelo outside the study area.
Graves and graveyards	<ul style="list-style-type: none"> Incorporation of graveyards in development schemes Relocation of graves and graveyards 	<ul style="list-style-type: none"> Permits from SAHRA, national health departments, Community consultation, Collaboration with forensic archaeologist. 	Graves and cemeteries exist in the study area

APPENDIX: LEGISLATION RELEVANT TO THE CULTURAL HERITAGE RESOURCES IN THE PPRust STUDY AREA

1 The National Heritage Resources Act (Act No 25 of 1999)

The National Heritage Resources Act (Act No 25 of 1999) requires all developers (including engineers, farmers [agriculturists] and mines, previously excluded from the bill) to undertake impact assessment studies whenever any development activities are undertaken. The law provides guidelines for impact assessment studies to be done whenever cultural resources may be destroyed by development activities. Permits must be acquired from the South African Heritage Resources Agency (SAHRA) before a heritage site can be affected or destroyed during the course of development activities.

Archaeological impact assessment studies have therefore become a common procedure for all development activities, even if such development may be exempted in terms of the Environment Conservation Act.

The new law stipulates the types of remains that qualify as heritage resources (heritage). These cultural resources are classified into national, provincial and other cultural heritage resources. The law stipulates general principles for heritage resources management and involves all three levels of government in the management of the country's cultural heritage. The law also requires community participation in the protection of living heritage resources.

SAHRA establishes and maintains a national policy, strategy plans and standards for heritage resources management and monitors the system as a whole. Heritage authorities assist and co-operate with individuals and organisations concerned with the study, the conservation and the promotion and utilisation of national heritage resources. A newly established National Heritage Resources Fund provides financial assistance for heritage projects.

2 Graves, the exhumation and relocation of human remains

Different legislation applies to different categories of graves, namely:

2.1 Graves younger than 60 years

Graves younger than 60 years are protected by Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983). These graves fall under the jurisdiction of

the National Department of Health and the relevant Provincial Department of Health. Approval for the removal of graves and bodies must be directed to the Office of the relevant Provincial Minister. (This function is usually delegated to the Provincial MEC for Local Government and Planning, or, in some cases, the MEC for Housing and Welfare). Authorisation for exhumation and re-interment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must be adhered to. In order to handle and transport human remains, the institution conducting the relocation must have authorisation under Section 24 of Act 65 of 1983 (the Human Tissues Act).

2.2 Graves older than 60 years

Graves older than 60 years, but younger than 100 years, fall under Section 36 of Act 25 of 1999 (the National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983) and under the jurisdiction of the South African Heritage Resources Agency (SAHRA). The Procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5] of Act 25 of 1999, National Heritage Resources Act) is applicable to graves older than 60 years which are situated outside a formal cemetery administered by a local authority. Graves in this category located inside a formal cemetery administered by a local authority also require the same authorisation as set out for graves younger than 60 years, over and above SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws set by the cemetery authorities must be adhered to. In order to handle and to transport human remains, the institution conducting the relocation needs authorisation under Section 24 of Act 65 of 1983 (the Human Tissues Act). Any alteration to a grave in this category or the relocation thereof must be supervised by an archaeologist accredited by SAHRA and the Cultural Resource Management Section of the South African Association for Archaeologists.

2.3 Graves older than 100 years

All graves older than 100 years are legislated as being archaeological and therefore protected under Act 25 of 1999 (the National Heritage Resources Act). SAHRA authorisation is required for all graves in this category, regardless of where they are located. Any alteration to a grave in this category or the relocation thereof must be supervised by an archaeologist accredited by SAHRA and the Cultural Resources Management Section of the South African Association of Archaeologists. If the grave is situated in a cemetery

administered by a local authority, the authorisation as set out for graves younger than 60 years are also applicable, over and above SAHRA authorisation. At the discretion of SAHRA, the Procedure for Consulting Regarding Burial Grounds and Graves (Section 36[5] of the National Heritage Resources Act) might also be required. In order to handle and transport human remains, the institution conducting the relocation must have authorisation under Section 24 of Act 65 of 1983 (the Human Tissues Act).

2.4 Graves of victims of conflict

All graves of victims of conflict, regardless of how old they are or where they are situated, are protected by Act 25 of 1999 (the National Heritage Resources Act). SAHRA authorisation is required for all graves in this category. Any alteration to a grave in this category or the relocation thereof must be supervised by an archaeologist accredited by SAHRA and the Cultural Resources Management Section of the South African Association for Archaeologists. If the grave is situated in a cemetery administered by a local authority, the authorisation as set out for graves younger than 60 years is also applicable, over and above SAHRA regulations. At the discretion of SAHRA, the Procedure for Consulting Regarding Burial Grounds and Graves (Section 36[5] of the Act 25 of 1999, the National Heritage Resources Act) might also be required. In order to handle and transport human remains, the institution conducting the relocation must have authorisation under Section 24 of Act 65 of 1983 (the Human Tissues Act).