

PHASE 1 HERITAGE IMPACT ASSESSMENT

SAMANCOR CHROME: LWALA OPEN CAST MINE LIMPOPO PROVINCE

FOR: Wates, Meiring & Barnard

Frans Roodt

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Tel: (015) 225 7075
Cell: 083 770 2131
E-mail: hr19@pixie.co.za



PO Box 1600
PIETERSBURG
0 7 0 0

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EXECUTIVE SUMMARY

Samancor Chrome plans to develop new open pits on the farms Clapham & Forest Hill. A heritage resources survey of this area has detected a number of significant archaeological sites. The determination of significance is based on criteria explained in the methodology section of the report. These specifically include a number of Early, Middle and Late Iron Age sites, historical ruins and graves, as well as a scattering of Middle Stone Age material.

The development will have an adverse effect on these heritage resources. Little is known of the archaeological sequence and culture history of the Early and Middle Iron Age in this area, as is the case with the earliest Pedi occupation. As a result this, these archaeological sites also have high scientific value.

After careful consideration, bearing in mind the conservation state of the sites, it is not recommended that any of the archaeological sites be avoided or protected from the development, but instead, it is recommended that phase 2 assessments be mitigated for some sites in order to extract sufficient information before they are finally destroyed.

Mitigation with the local community and relevant authorities for the exhumation and relocation of graves that fall within the development area is recommended as part of a social impact assessment.

From a heritage point of view, there is no objection with regard to the development on condition that the recommendations are implemented. This will result in no further significant impacts on the heritage resources through all the developmental phases.

1. INTRODUCTION

The **Project Proposal** constitutes an activity for which an Environmental Management Programme is required - provided for by paragraph **2.13** of the AIDE – Memoir as a requirement of the Minerals Act, 1991. In addition, the National Heritage Resources Act (Act No. 25 of 1999), protects all archaeological, palaeontological and historical sites and graves, and requires heritage resources impact assessments in terms of Section 38. To satisfy the requirements of the above legislation, a Phase 1 Heritage Impact Assessment (scoping & evaluation) of the proposed mining area was undertaken. In order to comply with legislation, Samancor Chrome requires information on the heritage resources, and their significance that occur in the proposed mining area. This will enable the mine to take pro-active measures to limit the adverse effects that the development could have on such heritage resources.

The author was contracted by Wates, Meiring & Barnard to undertake a Phase 1 *Heritage Impact Assessment* of the demarcated surface area on the farms Clapham 118 KT and Forest Hill 117 KT (Refer to map, South Africa 1:50 000 2430 AC), where open cast mining is planned. The aim was to determine the presence of heritage resources such as archaeological and historical sites and features, graves and places of religious and cultural significance; to assess the impact of the proposed project on such heritage resources, and to submit appropriate recommendations with regard to the cultural resources management measures that may be required at affected sites / features. Due to the nature of the terrain, the focus was primarily on archaeological remains.

The report thus provides an overview of the heritage resources and gravesites that were detected in or near the proposed mining area. The significance of the heritage resources was assessed in terms of criteria defined in the methodology section. It is indicated that these resources will be affected by the proposed development and the report recommends mitigation measures that should be implemented to minimise the adverse effect of the proposed mining activities on these heritage resources and graves. The mitigation measures also apply to heritage resources not detected during the survey, but which will in all probability be uncovered during excavations, construction of infrastructure and roads, and general mining activities.

2. METHOD

2.1 Sources of information

The source of information was primarily the field reconnaissance.

A thorough survey of the proposed activity areas was undertaken on foot. Standard archaeological practices for observation were followed. As most archaeological material occur in single or multiple stratified layers beneath the soil surface, special attention was given to disturbances, both man-made such as roads and clearings, as well as those made by natural agents such as burrowing animals and erosion. Locations of archaeological material were recorded by means of a GPS (Garmin 12). Archaeological material and the general conditions on the terrain were photographed with a KODAK DC120 Digital camera.

Local informants knew nothing about archaeological sites. This is understandable as archaeological sites that pre-date the colonial period generally fall beyond the scope of oral history.

2.2 Limitations

The survey was very thorough and because of the ploughed nature of the terrain, it is unlikely that any significant heritage resources were missed. However, the discovery of previously undetected heritage remains must be reported and may require further mitigation measures.

2.3 Categories of significance

The significance of archaeological sites is ranked into the following categories.

No significance: sites that do not require mitigation.
Low significance: sites, which <i>may</i> require mitigation.
Medium significance: sites, which require mitigation.
High significance: sites, which must not be disturbed at all.

The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences.

A crucial aspect in determining the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. There are many aspects that must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed. These are generally sites graded as of low or medium significance.

2.4 Terminology

Early Stone Age:	Predominantly the acheulean hand axe industry complex dating to + 1Myr yrs – 250 000 yrs. before present.
Middle Stone Age:	Various lithic industries in SA dating from ± 250 000 yr. - 30 000 yrs. before present. In this area the Pietersburg Industry is dominant.
Late Stone Age:	The period from ± 30 000-yr. to contact period with either Iron Age farmers or European colonists.
Early Iron Age:	Most of the first millennium AD
Middle Iron Age:	10 th to 13 th centuries AD
Late Iron Age:	14 th century to colonial period. <i>The entire Iron Age represents the spread of Bantu speaking peoples.</i>
Phase 1 assessments:	Scoping surveys to establish the presence of and to evaluate heritage resources in a given area
Phase 2 assessments:	In depth culture resources management studies which could include major archaeological excavations,

detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling.

Sensitive: Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

3. RELEVANT LEGISLATION

Two sets of legislation are relevant for this study with regard to protection of heritage resources and graves.

3.1 The National Heritage Resources Act (25 of 1999) (NHRA)

This Act established the South African Heritage Resources Agency (SAHRA) and makes provision for the establishment of Provincial Heritage Resources Authorities (PHRA). The Act makes provision for the undertaking of heritage resources impact assessments for various categories of development as determined by Section 38. It also provides for the grading of heritage resources and the implementation of a three tier level of responsibilities and functions for heritage resources to be undertaken by the State, Provincial authorities and Local authorities, depending on the grade of the Heritage resources. The Act defines cultural significance, archaeological and palaeontological sites and material (Section 35), historical sites and structures (Section 34), graves and burial sites (Section 36) which falls under its jurisdiction. Archaeological sites and material are generally those resources older than a hundred years, while Section 34 also protects structures and cultural landscapes older than 60 years, including gravestones. Procedures for managing grave and burial grounds are clearly set out in Section 36 of the NHRA. Graves older than a 100 years are legislated as archaeological sites and must be dealt with accordingly

Section 38 of the NHRA makes provision for *developers to apply for a permit before any heritage resource may be damaged or destroyed.*

3.2 The Human Tissues Act (65 of 1983)

This Act protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

Graves 60 years or older fall under the jurisdiction of the National Heritage Resources Act as well as the Human Tissues Act, 1983

4. DESCRIPTION OF THE TERRAIN

The terrain is relatively flat and located between the *Matadi* and *Moopetsi* streams. The soils are mostly turf with a calcrete under layer. Apart from the hills, the entire terrain has been ploughed with resulting degraded vegetation. Human intervention is the main cause of the increased soil erosion that occurs at the banks of the two streams.



Figure 1. General view of terrain showing ploughed fields

5. ARCHAEOLOGICAL REMAINS (refer to attached map for site numbers)

5.1 STONE AGE REMAINS

Individual Middle Stone Age (MSA) flakes and cores are to be found scattered over the entire terrain. No concentrations of MSA material found. The MSA material is thus not regarded as significant as it will be impractical to access the material.

Significance: None.



Figure 2. Middle Stone Age flakes

5.2. IRON AGE REMAINS

Numerous Iron Age sites representing the Early Iron Age and Middle Iron Age were located on the demarcated terrain. All the sites have, however, been ploughed resulting in damage, or in most cases, destruction of the sites. The diagnostic pottery fragments found identifies the pottery as probably belonging to two related phases of the **Early Iron Age**, namely, *Doornkop* and *Klingbeil* (7th – 10th century AD) as well as the **Middle Iron Age** *Eiland* culture (11th century AD). From the Map it is clear that the Early Iron Age remains are concentrated around a hill in the center of the demarcated terrain, whereas the Middle Iron Age *Eiland* remains are generally found on the plains. *Eiland* is a later occupational phase and the tendency not to settle at the hill probably reflects a respectful avoidance custom derived from religious beliefs. The fact that the current community ploughed the Early Iron Age sites reflects a change in belief systems and also the fact that these archaeological sites are not ancestral to the present Pedi speaking communities.

5.2.1 **Early Iron Age Sites** (7th – 10th century)

The Early Iron Age sites listed below are not necessarily all separate sites, but reflects the concentrations of village remains as represented by cattle enclosures, middens and cultural material such as pottery, metal working debris, ostrich eggshell beads and very distinctive grinding stones. All these sites were damaged or destroyed by cultivation. Most are, however, clearly demarcated by the location of cattle enclosures and middens, thereby maintaining high scientific value for village layout and pottery classification, as well as artifact collection.

- SITE:** 9. Co-ordinates: S24° 25.5917' E30° 05.9400'
 10. Co-ordinates: S24° 28.5600' E30° 05.7333'

- 11. Co-ordinates: S24° 28.6300' E30° 05.7417'
- 12. Co-ordinates: S24° 28.8033' E30° 05.7417' – contains human skeletal remains which had been ploughed up.
- 13. Co-ordinates: S24° 28.8883' E30° 05.7950'
- 15. Co-ordinates: S24° 29.4000' E30° 06.0033'
- 16. Co-ordinates: S24° 29.4767' E30° 05.9350'
- 24. Co-ordinates: S24° 29.4167' E30° 05.7983'
- 25. Co-ordinates: S24° 29.3200' E30° 05.7633'
- 26. Co-ordinates: S24° 29.1250' E30° 05.4833'
- 28. Co-ordinates: S24° 28.9533' E30° 05.3900'
- 29. Co-ordinates: S24° 28.4850' E30° 05.4767'
- 30. Co-ordinates: S24° 28.4833' E30° 05.5483'
- 31. Co-ordinates: S24° 28.6483' E30° 05.5900'
- 32. Co-ordinates: S24° 28.7000' E30° 05.6500'
- 35. Co-ordinates: S24° 28.4333' E30° 05.7133'
- 36. Co-ordinates: S24° 28.4800' E30° 05.8350'
- 37. Co-ordinates: S24° 28.4867' E30° 05.7483'
- 38. Co-ordinates: S24° 28.4967' E30° 05.6867'
- 39. Co-ordinates: S24° 28.5217' E30° 05.6217'
- 40. Co-ordinates: S24° 28.5600' E30° 05.6533'
- 41. Co-ordinates: S24° 28.6100' E30° 05.6750'

Significance: Sites 9, 10, 11, 12, 14, 28, 37 and 38 are of medium significance due to scientific considerations and require mitigation. All sites are sensitive for human remains.



Figure 3. Site 28 showing white vitrified dung deposit of a cattle enclosure



Figure 4. View of site 9. Note ash midden (A) and cattle dung deposit (B)



Figure 5. *Doornkop* pottery from site 28. Note metal slag bottom left.



Figure 6. *Doornkop* pottery from site 40.



Figure 7. Ostrich eggshell beads from site 10

5.2.2. Middle Iron Age *Eiland* Sites (10th century)

These sites were also heavily damaged by the ploughed fields. Most contain pottery fragments and grinding stones, with some hut and metal working debris.

SITE: 1.	Co-ordinates: S24° 29.2700'	E30° 06.5667'
2.	Co-ordinates: S24° 29.2400'	E30° 06.3517'
3.	Co-ordinates: S24° 29.2217'	E30° 06.2800'
5.	Co-ordinates: S24° 28.8400'	E30° 06.1967'
27.	Co-ordinates: S24° 29.0333'	E30° 05.5633'
33.	Co-ordinates: S24° 28.4467'	E30° 05.4817'
34.	Co-ordinates: S24° 28.3333'	E30° 05.5917'
42.	Co-ordinates: S24° 29.0317'	E30° 05.5500'
44.	Co-ordinates: S24° 28.9217'	E30° 06.5033'
45.	Co-ordinates: S24° 29.3467'	E30° 06.5083'

Significance: Low, but sensitive for human remains. Sites 33 & 34 require mitigation.



Figure 8. Typical *Eiland* decoration motives

5.2.3 Late Iron Age Sites (17th century up to colonial times)

Late Iron Age *Pedi* pottery fragments were found distributed over much of the terrain. The pottery remains found were fragmented into small sherds because of the plough activities. The small fragments of decorated lip sherds indicate that these sites relate to early *Pedi* settlement in the area, dating to the 17th century.

Site 4:	Co-ordinates: S24° 28.8567'	E30° 06.3633'
6.	Co-ordinates: S24° 28.8833'	E30° 06.0700'
7.	Co-ordinates: S24° 28.9117'	E30° 05.9083'
8.	Co-ordinates: S24° 28.8050'	E30° 06.0233'

14 Co-ordinates: S24° 29.2517' E30° 05.9900'

Significance: Medium, but sensitive for human remains. Sites 14 require mitigation.



Figure 9 Dung deposits of cattle enclosure site 14



Figure 10. *Pedi* pottery style

5.2.4. Communal grinding stone.

SITE 43. Co-ordinates: S24° 29.6750' E30° 05.9133'

This site consists of a rocky outcrop and contains at least 4 grinding hollows and a number of upper grinders. The hollows are relatively small and resemble Early Iron Age type rather than Late Iron Age or historical types.

Significance: Low.



Figure 11. One of two sets of communal grinders at site 43

6. HISTORICAL REMAINS AND GRAVES (refer to attached map for site numbers)

Sites 17 – 23 represent a series of recent historical occupation sites along the slope of a small hill. This area may contain unmarked graves that were not detected during the survey. The area must be regarded as sensitive.

SITE: 17. Co-ordinates: S24° 29.5100' E30° 05.9683' –
This is the location of a **GRAVEYARD** with 34 graves of which some have modern gravestones, while most are unmarked stone piles. Names such as Melamula, Magoa and Khulwana appear on the headstones.



Figure 12. Graveyard site 17

- 18. Co-ordinates: S24° 29.4883' E30° 05.8717' – Homestead ruins. This site contains **two graves**.
- 19. Co-ordinates: S24° 29.5117' E30° 05.8283' – Homestead ruins
- 20. Co-ordinates: S24° 29.4433' E30° 05.8717' – Homestead ruins
- 21. Co-ordinates: S24° 29.4317' E30° 05.9117' – Homestead ruins
- 22. Co-ordinates: S24° 29.3900' E30° 05.9050' – Homestead ruins
- 23. Co-ordinates: S24° 29.3950' E30° 05.8817' – Homestead ruins

Any of these homestead ruins could contain unmarked graves, especially those of infants who could traditionally be buried inside the hut, or under the roof drip line.



Figure 13. One of the graves at site 18



Figure 14. Foundations of a historical structure at site 21

Significance: Graves highly sensitive with high local significance.

7. EVALUATION

The archaeological remains detected on the proposed mining terrain have been extensively damaged through years of recent human activities. Little is, however, known about the occurrence and distribution of the Early Iron Age *Doornkop* or the Middle Iron Age *Eiland* cultural traditions in this particular area. It pre-dates the Late Iron Age *Sotho* speaking *Pedi* communities whose descendants now occupy the area. As a result of this, the scientific importance of these sites must bear considerable weight. Mitigation for phase 2 archaeological assessments are essential in order to extract sufficient and adequate data from selected sites. Sites 9, 10, 11, 12, 14, 28, 33, 34, 37 and 38 are particularly significant in this respect.

The Early and Middle Iron Age sites have been evaluated as of low or medium significance and none as of high significance. This is due to the fact that they have all had a varying degree of damage. Furthermore, it is impractical to mitigate protection status for these sites because of the nature of the mining development, and the fact that the local community does not regard them as significant because they have no ancestral links with these sites. Neither the Local nor Provincial Authorities have the capacity to enforce and monitor their protection. From a cultural resources management point of view, we are of the opinion that in this instance, the extraction of sufficient data / information must be done now while it is still available. We are also of the opinion that the socio-economic benefits of the project outweigh the conservation value of the heritage sites and therefore recommend mitigation measures to allow for the destruction of the Iron Age archaeological resources

The Middle Stone Age remains are not regarded as significant and no further assessment is required.

It should also be noted that unmarked graves and burials may occur at the recorded archaeological and historical sites, and that human remains may be exposed during earth works (refer to Extract from the National Heritage Resources Act).

All the recorded historical graves have local significance. The grave issue needs to be addressed as part of the social impact assessment. Graves for possible relocations must be identified at the earliest stage possible to allow adequate time for negotiation and approval from the relevant authorities and community. Human remains must be treated with sensitivity.

8. RECOMMENDATIONS

In view of the above it is recommended:

1. That phase 2 archaeological assessments be mitigated for Sites 9, 10, 11, 12, 14, 28, 33, 34, 37 and 38.
2. That gravesites which may be in the way of mining activities be identified as soon as possible to be dealt with in the social impact assessment and in consultation with the archaeologist when re-location is inevitable.

9. CONCLUSION

This study places much emphasis on the archaeological resources, as they are most likely to be threatened by the proposed development. The demarcated area is rich in significant archaeological material dating from the Early Iron Age. A general lack of data exists for the Iron Age sequence and culture history of this particular area.

The entire demarcated area is regarded as a sensitive landscape with regard to heritage resources. The land is, however, held in trust by the State for the local community and it is therefore extensively utilised by the community. For this reason, including the nature of mining operations and activities, it is highly unlikely that any protection measures could be implemented successfully. These resources will thus eventually deteriorate into oblivion even if the development is relocated away from the sites. We therefore rather recommend phase 2 assessments of certain identified sites to enable the extraction of sufficient scientific data to assist in our understanding of the archaeology of the area. This data could be used for educational purposes and a heritage awareness programme at a later stage.

Should the above-mentioned recommendations be implemented, the impacts of the development on the heritage resources during all phases, i.e. construction, operational, decommissioning and residual impacts after closure, will be negligible.

**Extracts from:
The National Heritage Resources Act (Act No. 25 of 1999).**

Archaeology, palaeontology and meteorites

Subsection 35. (3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority or museum, which must immediately notify such heritage resources authority.

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

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite.

Burial grounds and graves

Subsection 36. (6) Subject to the provision of any law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority-

- (a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
- (b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the content of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

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