



Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

**A REPORT ON A CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE
PROPOSED WITS GOLD DBM PROJECT CLOSE TO VIRGINIA, FREE STATE
PROVINCE**

For:

GCS
PO Box 2597
Rivonia
2128

GCS reference: 11-449

REPORT: AE11108

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SUMMARY

Archaeon cc was requested by GCS to conduct a cultural heritage impact assessment (HIA) for the proposed Wits Gold DBM Project. This is to the south of the town of Virginia in the Free State Province.

A survey of the available literature was undertaken in order to obtain background information regarding the area. This was followed by the field survey which was conducted according to generally accepted HIA practices, aimed at locating all possible objects, sites and features of cultural significance in the footprint area of the proposed development.

All sites, objects features and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities were determined by means of a Global Positioning System (GPS). The information was added to photographs and the description in order to facilitate the identification of each locality.

During the survey two site of cultural heritage significance were located close to the area to be developed. The one is a grave yard and the other some historical railway station buildings. No other cultural resources were identified.

The graveyard will be directly impacted on by the development and therefore needs to be mitigated. If possible, it should be incorporated it into the development plan for the area. As there would then still be a secondary impact the site will then have to be fenced in, a management plan drafted and implemented and the site preserved. However, access to any descendants should be allowed. This may create logistical problems for the developer and therefore this option should be considered very carefully.

Another option is that the graves be exhumed and the bodies reburied. This process is a lengthy process including social consultation in order to find families of the deceased and to obtain their permission. In the case of graves older than 60 years and those with an unknown date of death an archaeologist as well as an undertaker will have to be part of the team involved. A permit from SAHRA will also need to be obtained. For graves with a date of death of younger than 60 years, only an undertaker is involved.

The railway site falls just outside the footprint area. This site as well as possible other sites (such as graves) should be managed in accordance with this report.

The proposed development may continue only after proper implementation of the mitigation measures recommended.

It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Care should therefore be taken when mining commences that if any of these are discovered, a qualified archaeologist be called in to investigate.

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1. INTRODUCTION

Archaeon cc was requested by GCS to conduct a cultural heritage impact assessment (HIA) for the proposed Wits Gold DBM Project. This is to the south of the town of Virginia in the Free State Province.

Although the mining area is reasonably large, it will be very deep underground mining meaning that there mostly will be no impact to the surface. The only area of impact will be the two footprint areas.

Therefore this was the only areas to be surveyed. The client indicated the areas where the proposed development is to take place and the survey was confined to this area.

2. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located in the footprint area of the planned development (see Appendix A).
2. Documenting such sites in a report including photographs and indicating them on a map with GPS references.
3. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).
4. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.
5. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources.
6. Recommend and describe suitable mitigation measures should there be any sites of significance that might be impacted upon by the proposed development.
7. Review applicable legislative requirements.
8. Briefly referring to the surrounding mining areas so that the client would know how to handle anything of heritage importance they may be confronted with.

3. DETAILS AND EXPERTISE OF THE PERSON WHO PREPARED THE REPORT

Dr. Anton Carl van Vollenhoven:

Tertiary education

- BA 1986, University of Pretoria
- BA (HONS) Archaeology 1988 (cum laude), University of Pretoria
- MA Archaeology 1992, University of Pretoria
- Post-Graduate Diploma in Museology 1993 (cum laude), University of Pretoria
- Diploma Tertiary Education 1993, University of Pretoria
- DPhil Archaeology 2001, University of Pretoria.
- MA Cultural History 1998 (cum laude), University of Stellenbosch
- Management Diploma 2007 (cum laude), Tshwane University of Technology
- DPhil History 2010, University of Stellenbosch

Relevant positions held

- *1988-1991*: Fort Klapperkop Military Museum - Researcher
- *1991-1999*: National Cultural History Museum. Work as Archaeologist, as well as Curator/Manager of Pioneer Museum (1994-1997)
- *1999-2002*: City Council of Pretoria. Work as Curator: Fort Klapperkop Heritage Site and Acting Deputy Manager Museums and Heritage.
- *2002-2007*: City of Tshwane Metropolitan Municipality. Work as Deputy Manager Museums and Heritage.
- *August 2007* – present – Managing Director for Archaeos Archaeologists.
- *1988-2003*: Part-time lecturer in Archaeology at the University of Pretoria and a part-time lecturer on Cultural Resources Management in the Department of History at the University of Pretoria.

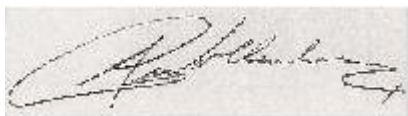
Experience and professional affiliations

- Has published 69 articles in scientific and popular journals on archaeology and history.
- Has been the author and co-author of over 300 unpublished reports on cultural resources surveys and archaeological work.
- Has published a book on the Military Fortifications of Pretoria.
- Has delivered more than 40 papers and lectures at national and international conferences.
- Member of SAHRA Council for 2003 – 2006.
- Member of the South African Academy for Science and Art.
- Member of Association for South African Professional Archaeologists.
- Member of the South African Society for Cultural History (Chairperson 2006-2008).
- Has been editor for the SA Journal of Cultural History 2002-2004.
- Member of the HIA adjudication committee for Gauteng PHRA.

4. DECLARATION OF INDEPENDENCE

I, Anton Carl van Vollenhoven from Archaetnos, hereby declare that I am an independent specialist within the field of heritage management.

Signed:



Date: 8 November 2011

5. METHODOLOGY

5.1 Survey of literature

A survey of the available literature was undertaken in order to obtain background information regarding the area. Sources consulted in this regard are indicated in the bibliography.

5.2 Field survey

The survey was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development. If required, the location/position of any site was determined by means of a Global Positioning System (GPS), while photographs were also taken where needed.

The survey was undertaken on foot and via an off-road vehicle.

5.3 Oral histories

People from local communities are interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography. In this particular case information obtained from the farmers in the area was extremely helpful.

5.4 Documentation

All sites, objects, features and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities were determined by means of a Global Positioning System (GPS). The information was added to the description in order to facilitate the identification of each locality.

6. CONDITIONS & ASSUMPTIONS

The following conditions and assumptions have a direct bearing on the survey and the resulting report:

1. Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity. These include all sites,

structure and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.

2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.
3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see Appendix B).
4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.
5. All recommendations are made with full cognizance of the relevant legislation.
6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might occur.
7. In this particular case the natural vegetation, where it existed, mostly consisted of dense grass cover making archaeological visibility difficult. However, a very small portion of the surveyed area has natural vegetation.

7. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

7.1 The National Heritage Resources Act

According to the above-mentioned law the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites

- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

Archaeology, palaeontology and meteorites

Section 35(4) of this act states that 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;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- c. 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
- d. bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency.

Human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. 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;
- b. destroy, damage, alter, exhume or 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
- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local

police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

7.2 The National Environmental Management Act

This act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

8. DESCRIPTION OF THE AREA

The proposed mining development called the Wits Gold DBM Project is located very close to and to the south of the town of Virginia in the Free State Province. It covers portions of the following farms: Hakkies 695, Schoonheid 540, Tweepan 678, Florida 633, Millo 717, Winterhoek Zuid 28, Kaallaagte 562, Mooiuitzig 352, Weltevreden 443, Stilte 138, Dora 287, Christiana 452, Bloemhoek 509, Le Roux 717 and Kriegers Kraal 708 (Figure 1-3).

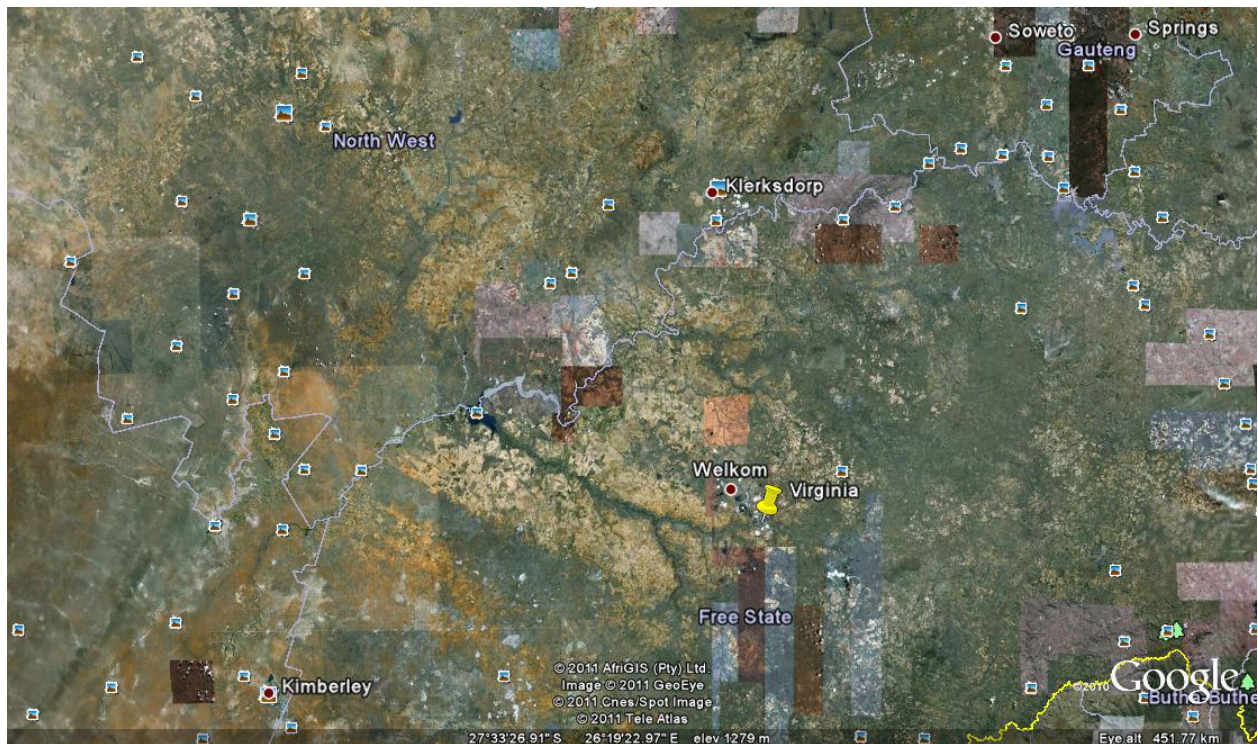


Figure 1 **Location of the town of Virginia.**

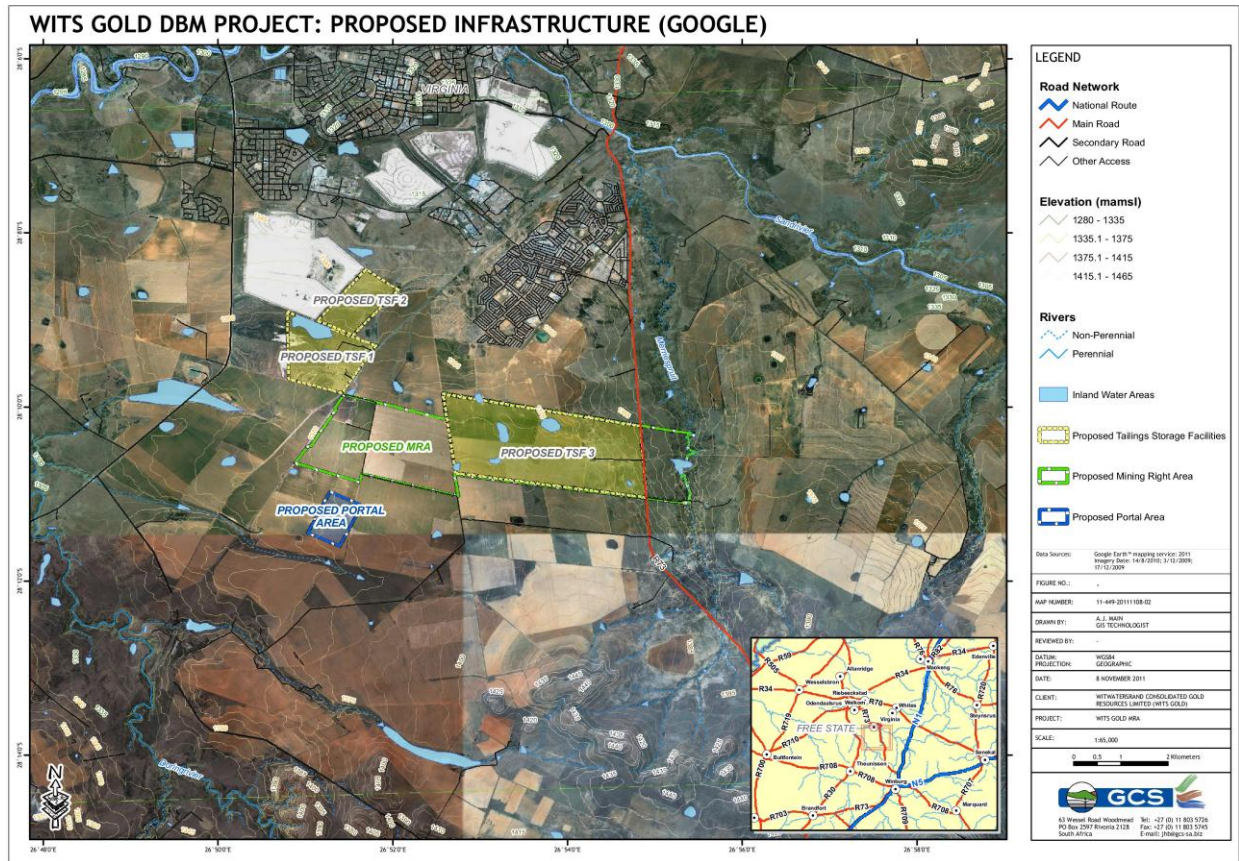


Figure 2 Location of the site to the south of Virginia.

The surveyed area has been extensively disturbed by recent human activities. This mainly consists of agricultural activities (wheat, onions, maize etc.) and grazing (Figure 4-8). Only a small portion of land consists of natural grass cover used for grazing. This includes possible wetland areas. Here the grass is long and the growth dense, making archaeological visibility difficult. Archaeological visibility in the remainder is reasonably good. The topography is reasonably even with no particular dominating slope.

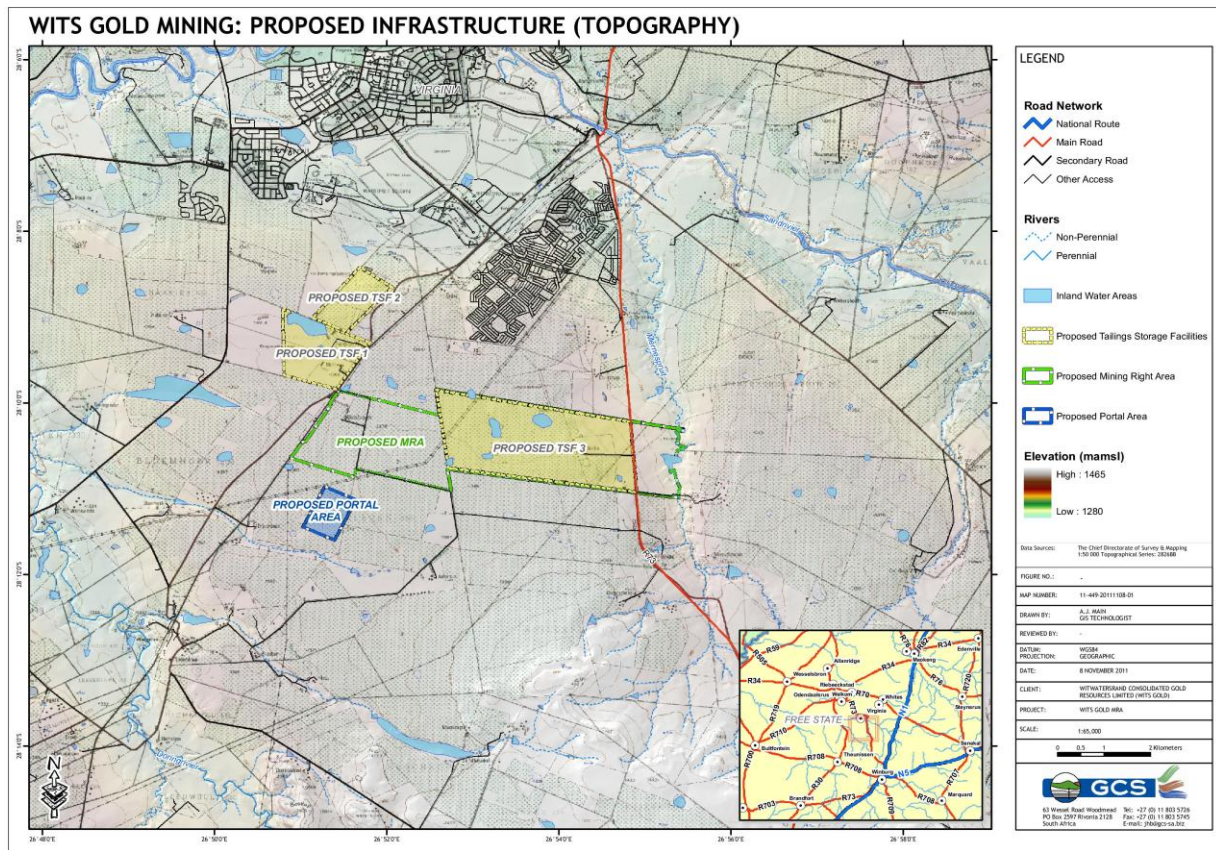


Figure 3 Details of the mine plan.



Figure 4 General view of the surveyed area.



Figure 5 **View of a cultivated onion field.**



Figure 6 **A cultivated grain field in the surveyed area.**



Figure 7 Cultivated maize field in the surveyed area.



Figure 8 Area showing natural vegetation.

The surveyed area has been extensively disturbed by recent human activities. This mainly consists of agricultural activities (wheat, onions, maize etc.) and grazing (Figure 4-8). Only a small portion of land consists of natural grass cover used for grazing. This includes possible wetland areas. Here the grass is long and the growth dense, making archaeological visibility

difficult. Archaeological visibility in the remainder is reasonably good. The topography is reasonably even with no particular dominating slope.

9. Historical context

As indicated two sites of cultural heritage significance were located in and very near to the footprint area of the planned mine. However, in order to enable the reader to better understand this, it is necessary to give a background regarding the different phases of human history.

9.1 Stone Age

The Stone Age is the period in human history when lithic material was mainly used to produce tools (Coertze & Coertze 1996: 293). In South Africa the Stone Age can be divided in three periods. It is, however, important to note that dates are relative and only provide a broad framework for interpretation. The division for the Stone Age according to Korsman & Meyer (1999: 93-94) is as follows:

Early Stone Age (ESA) 2 million – 150 000 years ago
Middle Stone Age (MSA) 150 000 – 30 000 years ago
Late Stone Age (LSA) 40 000 years ago – 1850 - A.D.

Information as to the Stone Age in this area is very limited, probably due to a lack of research. In the Vredefort Dome, to the north-west of the project area, scattered finds of Middle and Late Stone Age tools have been recorded. A few sites, close to the Vaal River are also known (Pelser 2005: 162-164). At Florisbad and Erfkroon some Early Stone Age sites were identified. At the latter Middle Stone Age material was also found and at Florisbad and Voigtspost Late Stone Age material was uncovered (Mitchell 2002: 73, 110, 138).

The environment definitely would be supportive to Stone Age activities. The nearby water sources would lure animals to the area and these people would therefore at least have hunted here. One should therefore be on the lookout for stone tools.

9.2 Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts (Coertze & Coertze 1996: 346). In South Africa it can be divided in two separate phases according to Van der Ryst & Meyer (1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D.
Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however, indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.
Middle Iron Age (MIA) 900 – 1300 A.D.
Late Iron Age (LIA) 1300 – 1840 A.D.

No Early Iron Age sites are known from the area. Late Iron Ages sites are known from Winburg to the south of the surveyed area and Platberg to the west thereof (Huffman 2007: 179, 195). During a survey done by Maggs (1976: 27) many Late Iron Age sites were also identified in the broader geographical area of Virginia.

No such sites were however identified during the survey. These sites are usually located close to high lying hills and such a feature does not exist where the survey was done. The environment is nevertheless suitable for Iron Age people and one may find cultural artifacts, such as potsherds during construction activities.

During the survey no indication of Iron Age settlement was identified.

9.3 Historical Age

The Historical Age started with the first recorded oral histories in the area. It includes the immigration of people that were able to read and write.

Early white travellers also moved through this area. The first was WC Harris in 1836 (Bergh 1999: 13). Gold was discovered in the northern Free State during the 1890's. The farm Virginia was measured out in 1890. Gold was discovered in Virginia in 1955.

9.4 Discussion of sites identified during the survey

Two sites were identified in and very close to the surveyed area. No other archaeological, historical or cultural sites, structures or objects of any significance were identified.

Farmers did however indicate that there are grave yards in the wider mining area. As long as there is no impact (direct or indirect) this would not be a problem. However should any impact arise in future, these will need to be addressed by a heritage expert. Table 1 (see recommendations) serves as a basic guide.

The same is true of any other cultural sites that may in future be impacted on due to a change in mine plan or any other circumstances. It should then immediately be evaluated and assessed by a heritage expert.

Site 1

This is a graveyard consisting of approximately 40 graves. There probably are more as the dense grass cover made it very difficult to do an accurate count. Two types of grave dressing were identified being stone packet or cement borders. Some graves are marked with metal markers. The graves that do have headstones have cement or stone headstones (Figure 9-10).

Some surnamed identified are Moenvana and Hlokahetse. Dates identified range between 1908 and 1978. Most of the graves does not have names or dates and are therefore classified as unknown.

GPS: 28°10.588'S
26°54.604'E



Figure 9 **One of the graves at site no 1.**



Figure 10 More graves at site no 1. Note the dense vegetation.

The development will have a direct impact on the site. The exact nature thereof is however not known and should be confirmed by the client. Due to the sensitivity of this issue, graves are always regarded as having a **high** cultural significance.

With graves it usually is best to incorporate them into the development plan for the site. Should this be possible, the graveyard should then be fenced off and kept in tact. Access to any descendants should also be allowed. A management plan needs to be drafted and implemented and it should also be monitored once a year by a heritage expert.

Should the above not be possible the graves will have to be exhumed and the bodies reburied. This is a lengthy process including social consultation for 60 days in order to find families of the deceased and to obtain their permission.

In the case of graves older than 60 years and those with an unknown date of death (as in this case) an archaeologist as well as an undertaker will have to be part of the team involved. For graves with a date of death of younger than 60 years, only an undertaker is involved.

EIA rating:

Construction phase – None

Operational phase –

$$\begin{aligned} \text{SP} &= (\text{magnitude} + \text{duration} + \text{scale}) \times \text{probability} \\ &= (10 + 5 + 2) \times 5 \\ &= 17 \times 5 \\ &= 85 \end{aligned}$$

Closure and decommissioning phase - None

Site 2

This is the remains of an old station. It consists of at least three buildings, most likely dating to the 1930's/ 40's and the ruins of more buildings (Figure 11).

GPS: 28°10.223'S
26°51.161'E

The site falls to the west and just outside of the footprint area of the proposed mining development. Therefore there will not be a direct impact on the site, but there will be a secondary one. The buildings are regarded as having a **medium** cultural significance. It still is in a good condition, but is not very unique.

The buildings should remain intact and may even be reutilized. Any structural changes should be communicated with the Provincial Heritage Resources Agency (PHRA) of the Free

State Province and a permit will be required to do so. The buildings should not be demolished.



Figure 11 Station buildings at site no. 2.

EIA rating:

Construction phase – None

Operational phase –

$$\begin{aligned} \text{SP} &= (\text{magnitude} + \text{duration} + \text{scale}) \times \text{probability} \\ &= (4 + 4 + 3) \times 5 \\ &= 11 \times 5 \\ &= 55 \end{aligned}$$

Closure and decommissioning phase - None

10. CONSULTATION

Farmers with whom discussions were held:

Mr. A Pienaar
Mr. P Niemand
Mr. B Stadlander
Mr. J van Huyssteen
Mr. J Pienaar

11. CONCLUSION & RECOMMENDATIONS

The survey of the indicated area was completed successfully. The sites found are indicated in Figure 12.

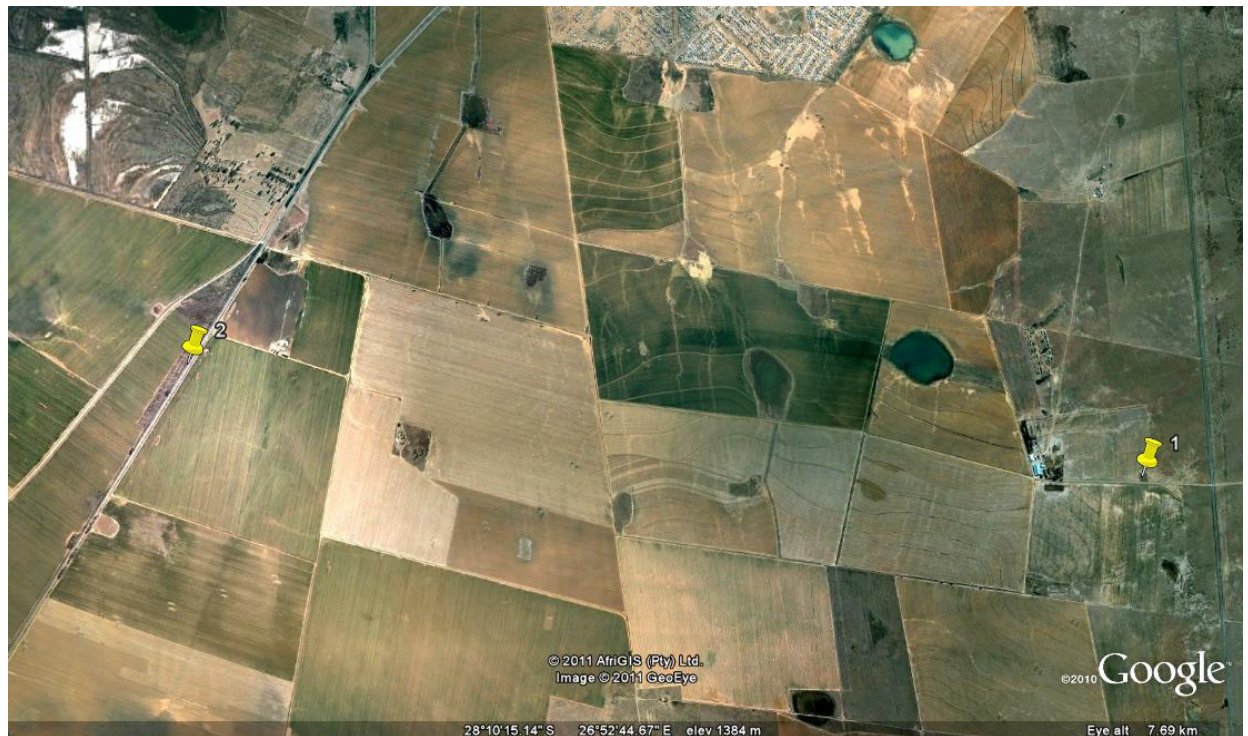


Figure 12 Location of the sites indicated in the report.

The following is recommended:

- Grave yards and graves always have a high cultural significance and needs to be handled with the utmost sensitivity.
- It seems as if the site will most likely be directly impacted on. However, even if not impacted on directly, there will still be a secondary impact as access to the sites may be limited and infrastructure may be very close to the site.
- With graves it usually is best to incorporate them into the development plan for the area. Should this be possible and/or the impact is only indirect the site should be fenced in and maintained. However, access to any descendants should also be allowed. This may create logistical problems and therefore this option should be considered very cautious.
- Should this not be possible the graves will have to be exhumed and the bodies reburied. This is a lengthy process including social consultation in order to find families of the deceased and to obtain their permission.

- In the case of graves older than 60 years and those with an unknown date of death an archaeologist as well as an undertaker will have to be part of the team involved. A permit from SAHRA will also need to be obtained. For graves with a date of death of younger than 60 years, only an undertaker is involved. In this particular case both categories of graves are relevant.
- In order to assist in decision making a risk management assessment (Table 1) is included.

Table 1 Risk management relating to graves

Risk factor	Fencing of site	Exhumation and Relocation of graves
Access	Descendants will need undisturbed access to graves (only if descendants are identified)	Descendants will have access to new grave yard (only if descendants are identified)
Compensation	Not needed	Descendants may want compensation, but it is advised that this be limited to a night vigil (only if descendants are identified)
Approval from descendants	Not needed	Needed and without it no relocation will be allowed (only if descendants are identified) – usually not a problem to obtain permission
Security risk	Yes, as descendants must get access (only if descendants are identified)	No, as access would be at new cemetery*
Management of sites	Yes, a sustainable management plan will be needed	No, as this will form part of an existing cemetery *
Monitoring of sites	Yes, an independent heritage expert to monitor management plan and maintenance once a year	No, as it will form part of an existing cemetery*
Upgrade and cleaning	Yes, site should be left by developer in a better state than before and it should be kept neat	No, as this would be dealt with as part of the existing cemetery*
Land claims	Yes, but only in case of a forced removal (only if descendants are identified)	Yes, but only in case of a forced removal (only if descendants are identified)
Finances	Less expensive over the short term	More expensive over the short term
Time frames	Less time consuming	More time consuming
Responsibility	Permanent liability and responsibility for the developer	The developer's responsibility and liability ends after the exhumation and relocation process*

***The developer may decide to start a new cemetery on their premises for this purpose. In such a case they will save the cost of grave plots etc. However the graves will then be a site they need to manage permanently meaning that it will need to be fenced and a management plan needs to be compiled and implemented. An EIA may also be needed.**

- All other grave sites that become known and may be impacted on directly or indirectly should be handled in similar fashion after consultation with a heritage expert.
- There only is a secondary impact on the railway site.
- The buildings should remain intact and may even be reutilized. Any structural changes should be communicated with the Provincial Heritage Resources Agency (PHRA) of the Free State Province and a permit will be required to do so. The buildings should not be demolished.
- The proposed development may continue only after proper implementation of the mitigation measures recommended.
- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.

12. REFERENCES

- Bergh, J.S. (red.). 1999. **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.
- Coertze, P.J. & Coertze, R.D. 1996. **Verklarende vakwoordeboek vir Antropologie en Argeologie.** Pretoria: R.D. Coertze.
- Huffman, T.N. 2007. **Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa.** Scottsville: University of KwaZulu-Natal Press.
- Knudson, S.J. 1978. **Culture in retrospect.** Chicago: Rand McNally College Publishing Company.
- Korsman, S.A. & Meyer, A. 1999. Die Steentydperk en rotskuns. Bergh, J.S. (red.). **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.
- Maggs, T.M. O'C. 1976. **Iron Age communities of the Southern Highveld.** Pietermaritzburg: Natal Museum.
- Mitchell, P. 2002. **The archaeology of Southern Africa.** Cambridge; Cambridge University Press.
- Pelser, A. 2005. Travelling through time: archaeology and the Vredefort Dome. Reimold, W.U. & Gibson, R.L. **Meteorite impact! The danger from space and South**

Africa's mega-impact the Vredefort structure. Johannesburg: Chris van Rensburg Publications.

Reimold, W.U. & Gibson, R.L. **Meteorite impact! The danger from space and South Africa's mega-impact the Vredefort structure.** Johannesburg: Chris van Rensburg Publications.

Republic of South Africa. 1980. Ordinance on Excavations (**Ordinance no. 12 of 1980**). **The Government Printer: Pretoria.**

Republic of South Africa. 1983. **Human Tissue Act** (Act 65 of 1983). The Government Printer: Pretoria.

Republic of South Africa. 1999. **National Heritage Resources Act** (No 25 of 1999). Pretoria: the Government Printer.

Republic of South Africa. 1998. **National Environmental Management Act** (no 107 of 1998). Pretoria: The Government Printer.

APPENDIX A

Definition of terms:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B

Cultural significance:

- Low A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

APPENDIX C

Cultural significance:

- Low A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

Heritage significance:

- Grade I Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III Other heritage resources of local importance and therefore worthy of conservation

APPENDIX D

Protection of heritage resources:

- Formal protection

National heritage sites and Provincial heritage sites – grade I and II

Protected areas - an area surrounding a heritage site

Provisional protection – for a maximum period of two years

Heritage registers – listing grades II and III

Heritage areas – areas with more than one heritage site included

Heritage objects – e.g. archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

- General protection

Objects protected by the laws of foreign states

Structures – older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials