



Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

**A REPORT ON A CULTURAL HERITAGE IMPACT ASSESSMENT FOR A
PROPOSED UNDERGROUND MINE ON DIFFERENT PORTIONS OF THE FARM
SCHURVEKOP 227 IS, CLOSE TO BETHAL, MPUMALANGA PROVINCE**

For:

CABANGA ENVIRONMENTAL
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REPORT NO.: AE01710V

By:

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27 March 2017

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Please note that the South African Heritage Resources Agency (SAHRA) or one of its subsidiary bodies needs to comment on this report.

It is the client's responsibility to do the submission via the SAHRIS System on the SAHRA website.

Clients are advised not to proceed with any action before receiving the necessary comments from SAHRA.

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EXECUTIVE SUMMARY

Purpose:

Archaetnos cc was requested by Cabanga Environmental to conduct a cultural heritage impact assessment (HIA) for a proposed mine on different portions of the farm Schurvekop 227 IS.

Project description:

The proposed project entails the construction of facilities and infrastructure including internal haul and access roads, fencing, a weighbridge, soil berms, overburden and stockpiles, box cut and shaft, ventilators, water trenches, conveyors, plant area and administrative offices as well as smaller associated features associated with the proposed underground mine.

Methodology:

The methodology for the study includes a survey of literature and a field survey. The latter 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 by doing a physical survey via off-road vehicle and on foot and covered as much as possible of the area to be studied. Certain factors, such as accessibility, density of vegetation, etc. may however influence the coverage.

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 the Global Positioning System (GPS). The information was added to the description in order to facilitate the identification of each locality.

Public consultation:

Public consultation was handled by Cabanga Environmental. This included engagement with property owners and owners of adjacent properties, public meetings and open days and engagement with interested and affected parties. Newspaper notices were placed in November 2016. Site notices were placed on site on 2 November 2016.

Findings:

During the survey four sites of cultural heritage significance were identified within the immediate project area. None of these will be impacted on directly. These are discussed and mitigation measures are proposed.

Recommendations:

- All four sites identified are graves and none are to be directly impacted by the mining activities. Therefore Option 1 is recommended. The sites should be fenced in and a cultural management plan should be drafted for the sustainable preservation thereof.

The plan should be drafted by a heritage specialist and should inter alia take into account a buffer zone of at least 20 m and controlled access to descendants.¹

- The proposed development may continue only after the mitigation measures indicated above had been implemented and approved by SAHRA.
- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Due to the density of vegetation it also is possible that some sites may only become known later on. Operating controls and monitoring should therefore be aimed at the possible unearthing of such features. 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.

¹ It is standard protocol to either recommend option 1 or option 2 for graves. A management plan will address issues, such as accessibility.

CURRICULUM VITAE OF SPECIALIST: PROF 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

Employment history

- 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.
- 2014: Part-time lecturer for the Honours degree in Museum Sciences in the Department of History and Heritage Studies at the University of Pretoria
- 2015: Appointed extraordinary professor in history at the Mafikeng Campus of the Northwest University

Other

- Published 75 articles in scientific and popular journals on archaeology and history.
- Author and co-author of over 580 unpublished reports on cultural resources surveys and archaeological work. A list of reports can be viewed on www.archaeos.co.za
- Published a book on the Military Fortifications of Pretoria.
- Contributed to a book on Mapungubwe.
- Delivered more than 50 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.
- Accredited professional member of Association for South African Professional Archaeologists.
- Accredited professional member of the South African Society for Cultural History (Chairperson 2006-2008; 2012-2014).
- Has been editor for the SA Journal of Cultural History 2002-2004.
- Member of the Provincial Heritage Resources Agency, Gauteng's Council.
- Member of Provincial Heritage Resources Agency, Gauteng's HIA adjudication committee (Chairperson 2012-2019).

ASAPA Accreditation number: 166

SASCH Accreditation number: CH001

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:

A rectangular image showing a handwritten signature in dark ink on a light-colored, textured paper background. The signature is cursive and appears to read 'Anton Carl van Vollenhoven'.

Date: 27 March 2017

CONTENTS

	Page
EXECUTIVE SUMMARY	3
CURRICULUM VITAE OF SPECIALIST	5
DECLARATION OF INDEPENDENCE	6
CONTENTS	7
LIST OF ACRONYMS.....	8
1. INTRODUCTION.....	9
2. PROJECT INFORMATION.....	11
3. TERMS OF REFERENCE.....	13
4. LEGISLATIVE REQUIREMENTS.....	14
5. METHODOLOGY	17
6. ASSUMPTIONS, GAPS, RESTRICTIONS, CONDITIONS AND LIMITATIONS	20
7. DESCRIPTION OF THE SOCIO-ECONOMIC ENVIRONMENT.....	21
8. DESCRIPTION OF THE PHYSICAL ENVIRONMENT	21
9. RESULTS OF PUBLIC CONSULTATION AND STAKEHOLDER ENGAGEMENT	25
10.HISTORICAL CONTEXT.....	25
11.DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY.....	27
12.CONCLUSIONS AND RECOMMENDATIONS.....	38
13.REFERENCES.....	39
APPENDIX A – DEFINITION OF TERMS	41
APPENDIX B – DEFINITION/ STATEMENT OF SIGNIFICANCE	42
APPENDIX C – SIGNIFICANCE AND FIELD RATING	43
APPENDIX D – PROTECTION OF HERITAGE RESOURCES.....	45
APPENDIX E – HERITAGE MANAGEMENT IMPACT ASSESSMENT PHASES.....	46
APPENDIX F – PREVIOUS HIA STUDY	

LIST OF ACRONYMS:

AIA – Archaeological Impact Assessment
CMP – Cultural Management Plan
EAP – Environmental Assessment Practitioner
EIA – Environmental Impact Assessment
HIA – Heritage Impact Assessment
PIA – Palaeontological Impact Assessment
SAHRA –South African Heritage Resources Agency

1. INTRODUCTION

Archaetnos cc was requested by Cabanga Environmental to conduct a cultural heritage impact assessment (HIA) for a proposed coal mine on different portions of the farm Schurvekop 227 IS. The site lies to the north of the town of Bethal in the Mpumalanga Province (Figure 1-2).

The mining right application includes portions 6, 8, RE of 15, 16, 17, 18, 19 and 20 of the farm Schurvekop 227 IS. Mining will be conducted via underground bord-and-pillar methods accessed via a box cut adit. Coal will be transferred from underground to the surface via conveyor, here it will be processed and stockpiled before being trucked to market.

The site is greenfields, and the project is in the EIA phase of the Environmental Application (EA) process. A scoping report has already been submitted to the Department of Mineral Resources – ref. no.: MP30/5/1/2/2/10160MR.



FIGURE 1: LOCATION OF BETHAL WITHIN THE MPUMALANGA PROVINCE.

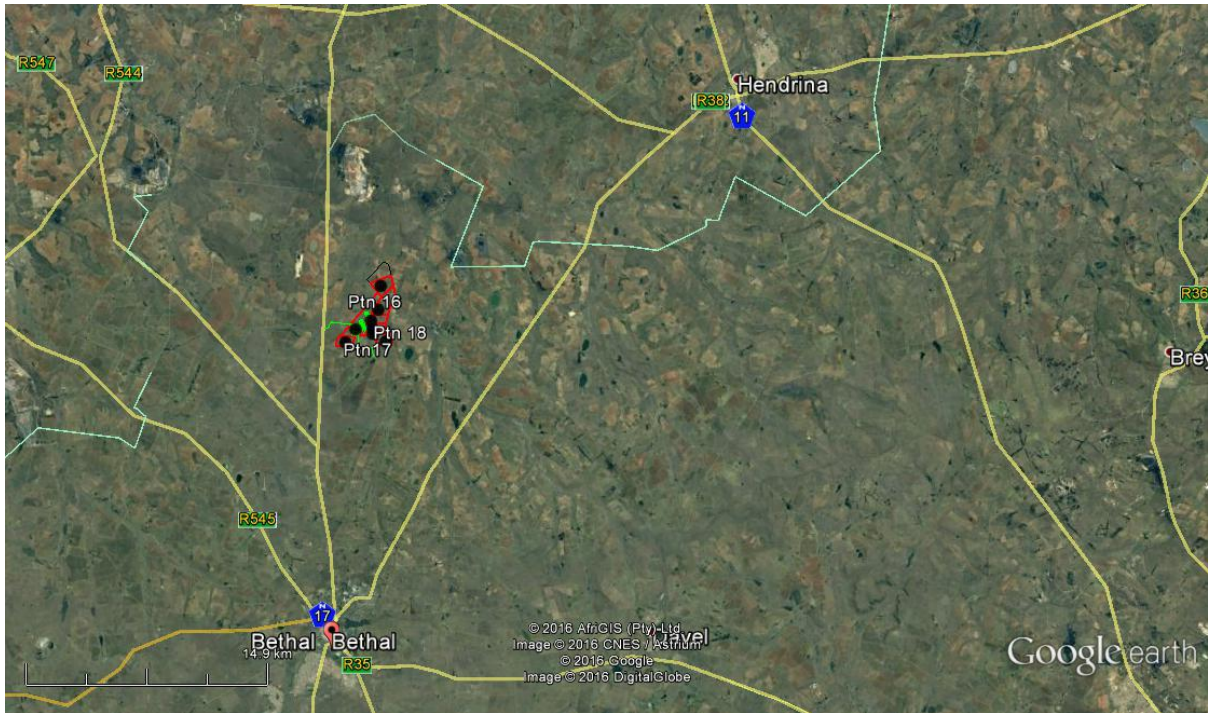


FIGURE 2: LOCATION OF THE SITE IN RELATION TO BETHAL.

2. PROJECT INFORMATION

2.1 LOCALITY

Schurvekop is located 20 km north of the town of Bethal and 20 km east of the town of Kriel, both in Mpumalanga.

TABLE 1: SUMMARY OF GEOGRAPHICAL DETAILS

Size of farm and portions	Schurvekop 227 IS: Portion 6 – 123.2178 Ha Portion 8 – 190.7068 Ha Remainder of portion 15 – 61.6075 Ha Portion 16 – 95.3584 Ha Portion 17 – 32.2970 Ha Portion 18 – 65.8901 Ha Portion 19 – 61.6075 Ha Portion 20 – 65.8901 Ha
Magisterial district	Govan Mbeki Local and Gert Sibande District
1:50 000 map sheet number	2629AB, 2629AD, 2629BA, 2629BC
Central co-ordinate of the development	26°17'16.16"S; 29°29'21.45"E

2.2 PROJECT DESCRIPTION

The proposed project entails the construction of facilities and infrastructure including internal haul and access roads, fencing, a weighbridge, soil berms, overburden and stockpiles, box cut and shaft, ventilators, water trenches, conveyors, plant area and administrative offices as well as smaller associated features associated with the proposed underground mine (Figure 3-5).

TABLE 2: SUMMARY OF PROJECT SPECIFICS

Type of development	Coal mining
Detail of proposed activities (NHRA section 38 triggers)	Mining Rights Application
Size of project	696.57 Ha

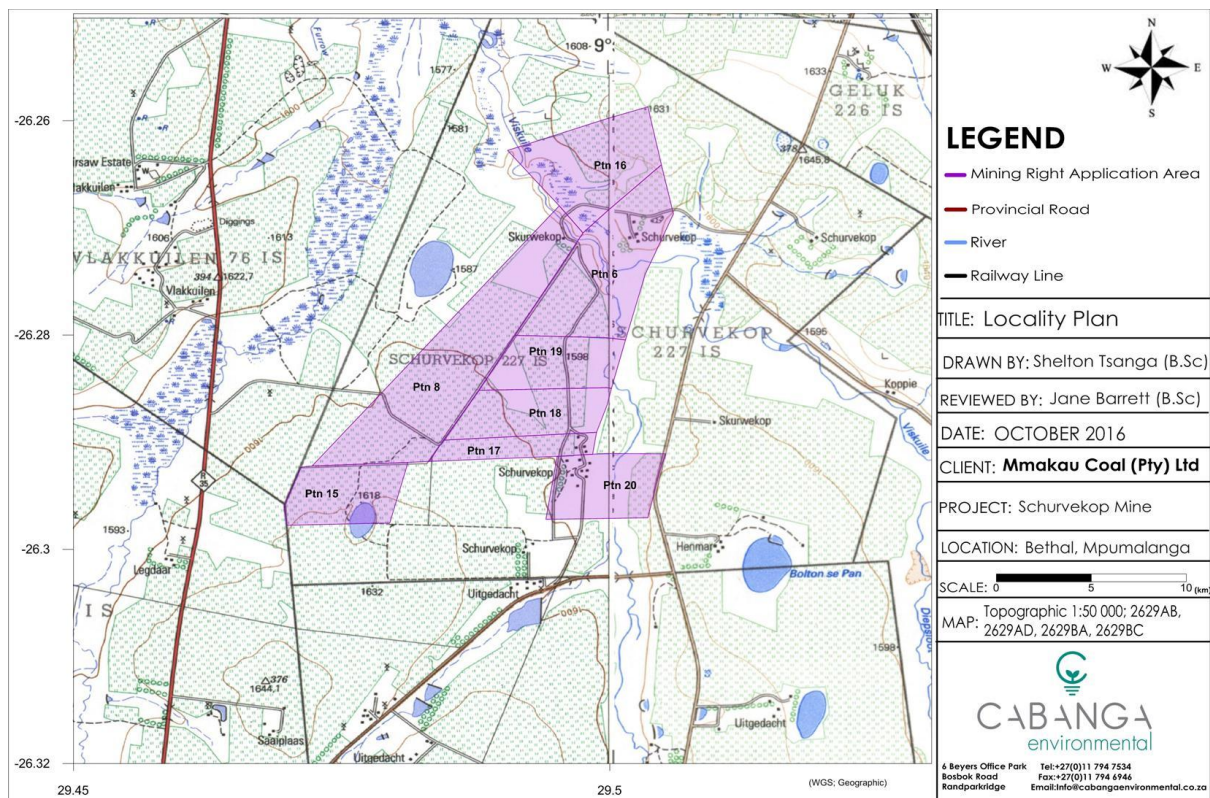


FIGURE 3: MAP INDICATING THE MINING RIGHT APPLICATION AREA (CABANGA ENVIRONMENTAL).

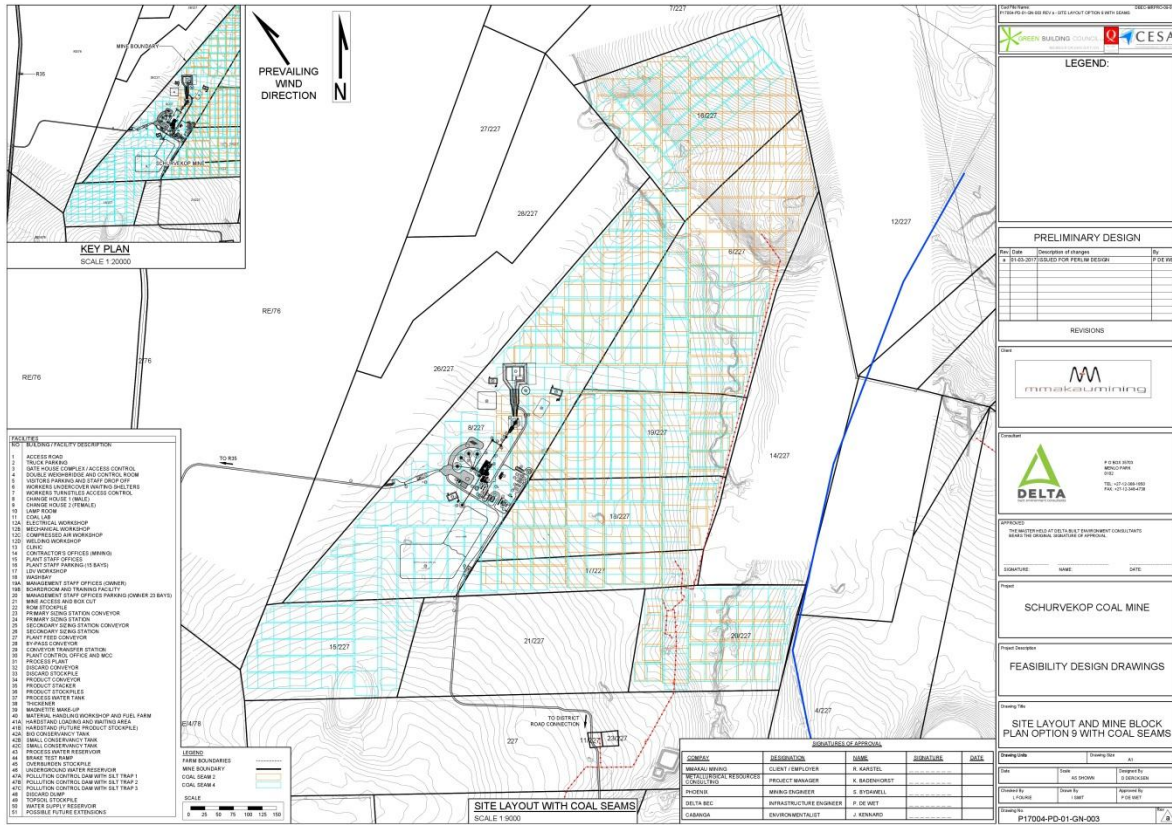


FIGURE 4: PROPOSED LAYOUT – INFRASTRUCTURE AND UNDERGROUND WORKINGS (DELTA).

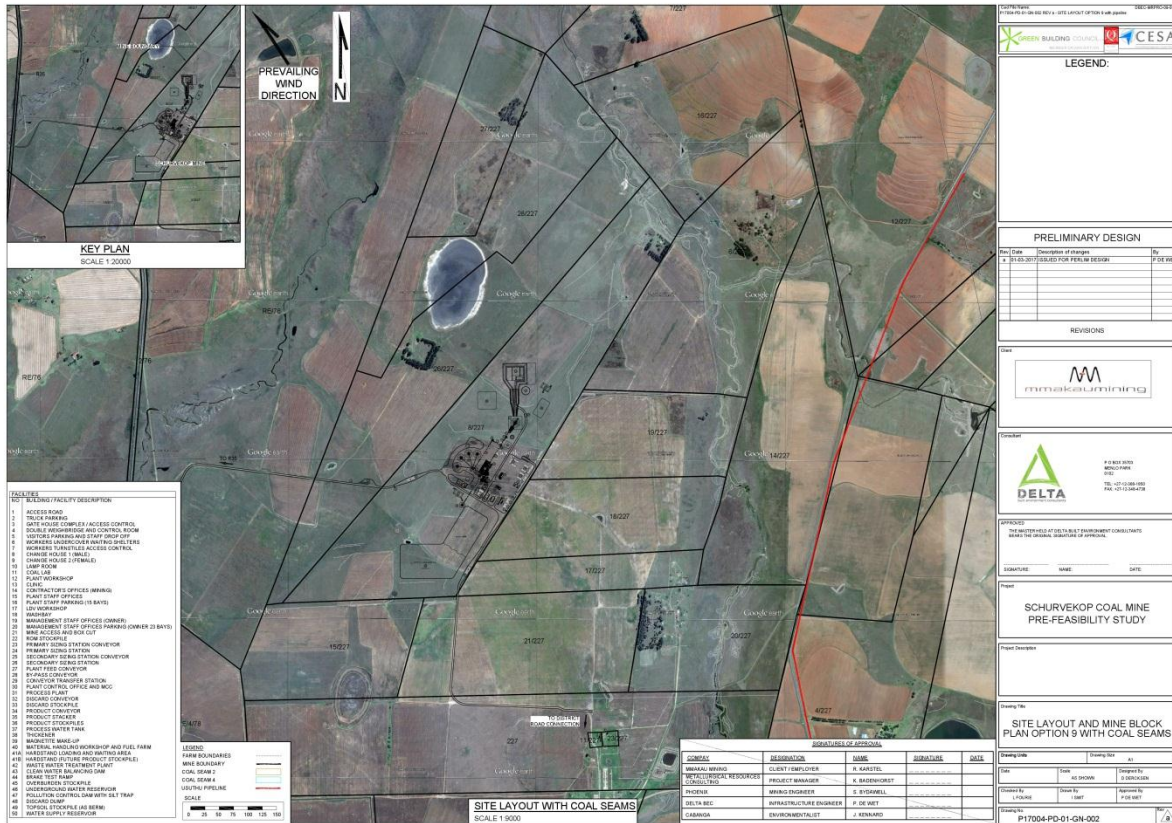


FIGURE 5: GOOGLE EARTH IMAGE INDICATING THE PROPOSED SURFACE INFRASTRUCTURE (DELTA).

2.3 APPLICANT AND EAP DETAILS

The applicant is Mmakau Coal (Pty) Ltd and the EAP compiling the application for EA is Cabanga Environmental.

3. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property (see Appendix A).
2. Document the found cultural heritage sites according to best practice standards for heritage related studies.
3. Study background information on the area to be developed.
4. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).
5. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.

6. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.
7. Review applicable legislative requirements.

4. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. The first of these are the National Heritage Resources Act (Act 25 of 1999) which deals with the cultural heritage of the Republic of South Africa. The second is the National Environmental Management Act (Act 107 of 1998) which inter alia deals with cultural heritage as part of the Environmental Impact Assessment process.

4.1 The National Heritage Resources Act

According to the above-mentioned act 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.

The national estate (see Appendix D) includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and paleontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources.

A Palaeontological Impact Assessment (PIA) is an assessment of palaeontological heritage. Palaeontology is a different field of study, and although also sometimes required by the

South African Heritage Resources Agency (SAHRA)², should be done by a professional palaeontologist.

The different phases during the HIA process are described in Appendix E. An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial):

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological 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 paleontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological 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.

² Please consult SAHRA to determine whether a PIA is necessary.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. 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.

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

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)**.

4.2 The National Environmental Management Act

This act (Act 107 of 1998) 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.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural

heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

4.3 The International Finance Corporations' performance standard for cultural heritage

This standard recognizes the importance of cultural heritage for current and future generations. It aims to ensure that clients protect cultural heritage in the course of their project activities.

This is done by clients abiding to the law and having heritage surveys done in order to identify and protect cultural heritage resources via field studies and the documentation of such resources. These need to be done by competent professionals (e.g. archaeologists and cultural historians). Any possible chance find, encountered during the project development, also needs to be managed by not disturbing it and by having it assessed by professionals.

Impacts on the cultural heritage should be minimized. This includes the possible maintenance of such sites *in situ*, or when not possible, the restoration of the functionality of the cultural heritage in a different location. When cultural historical and archaeological artifacts and structures need to be removed, this should be done by professionals and by abiding to the applicable legislation. The removal of cultural heritage resources may, however, only be considered if there are no technically or financially feasible alternatives. In considering the removal of cultural resources, it should be outweighed by the benefits of the overall project to the affected communities. Again professionals should carry out the work and adhere to the best available techniques.

Consultation with affected communities should be conducted. This entails that such communities should be granted access to their cultural heritage if this is applicable. Compensation for the loss of cultural heritage should only be given in extra-ordinary circumstances.

Critical cultural heritage may not be impacted on. Professionals should be used to advise on the assessment and protection thereof. Utilization of cultural heritage resources should always be done in consultation with the affected communities in order to be consistent with their customs and traditions and to come to agreements with relation to possible equitable sharing of benefits from commercialization.

5. METHODOLOGY

5.1 Survey of literature

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

5.2 Reference to other specialist desktop studies

A desktop Palaeontological Impact Assessment (PIA) for the project has been completed. According to this the deposit is in the Vryheid Formation, Ecca Group and there are fossil plants of the *Glossopteris* flora associated with the shales between the coal seams but not in

the coal itself. The access to the underground will be via a box cut adit, the construction of which will pass through the shales but will be limited to a small footprint. It is possible that some fossil plants will be destroyed in the process but as they have not been reported from this area and would be very sparsely distributed if present. Since there is a small chance that fossil plants could be discovered when excavations or drilling commences a 'Chance Find' protocol and monitoring programme have been added (see PIA). It is concluded that the project may continue as far as the paleontology is concerned (Bamford 2017).

A previous heritage study was done on Schurvekop (Van Vollenhoven 2012). This is discussed below.

5.3 Public consultation and stakeholder engagement

Public consultation was handled by Cabanga Environmental and the necessary report can be requested from them. This included engagement with property owners and owners of adjacent properties, public meetings and open days and engagement with interested and affected parties.

Newspaper notices were placed on 4 November 2016 in The Ridge Times and The Echo. Site notices were placed on site on 2 November 2016.

5.4 Physical 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. One regularly looks a bit wider than the demarcated area, as the surrounding context needs to be taken into consideration.

If required, the location/position of any site was determined by means of a Global Positioning System (GPS)³, while photographs were also taken where needed. The survey was undertaken by doing a physical survey via off-road vehicle and on foot and covered as much as possible of the area to be studied (Figure 6).

Certain factors, such as accessibility, density of vegetation, etc. may however influence the coverage. In this instance the under footing was extremely dense and the vegetation cover medium to high. Accordingly both the horizontal and the vertical archaeological visibility was influenced negatively. The survey took 6 hours to complete.

³ A Garmin Oregon 550 with an accuracy factor of a few meters.

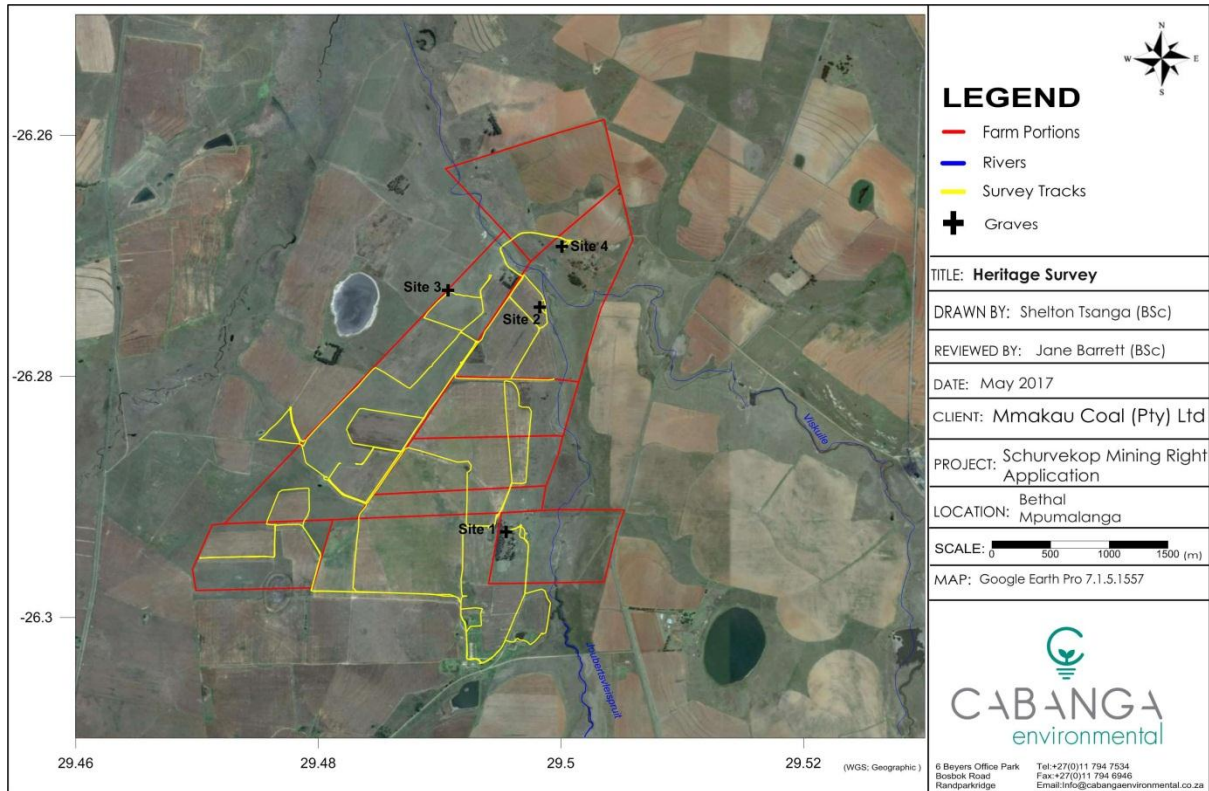


FIGURE 6: GPS TRACK OF THE SURVEYED AREA.⁴ NORTH REFERENCE IS TO THE TOP (CABANGA ENVIRONMENTAL).

5.5 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 the Global Positioning System (GPS). The information was added to the description in order to facilitate the identification of each locality.

5.6 Evaluation of Heritage sites

The evaluation of heritage sites is done by giving a field rating of each (see Appendix C) using the following criteria:

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

⁴ Two people, in radio contact, did the survey, but only one GPS unit was available.

6. ASSUMPTIONS, GAPS, RESTRICTIONS, CONDITIONS AND LIMITATIONS

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 (Appendix A). These include all sites, structures 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 C).
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 large parts of the surveyed area have been disturbed by agricultural fields. Accordingly these areas are seen as a low risk areas to reveal heritage sites due to it being almost entirely disturbed.
8. The vegetation cover in certain areas was high and dense, which had a negative effect on both the vertical and the horizontal archaeological visibility.
9. The gate to portion 16 of the farm was locked. This section however also is mostly disturbed by agriculture and is therefore a low risk area for containing heritage sites. It had been surveyed during the 2102 survey in the area.

7. DESCRIPTION OF THE SOCIO-ECONOMIC ENVIRONMENT

Govan Mbeki Local Municipality (GMLM) is located in the north western side of the Gert Sibande District Municipality (GSDM) and in the south-western part of Mpumalanga Province. GMLM is 2,958.9km² in extent. GMLM was established in the year 2000 with the amalgamation of the following Towns; Secunda, Bethal, Kinross, Evander, EMBalenhle, Leandra, Trichardt, Emzinoni and Charl Cilliers.

The information below is taken from Statistics South Africa (Census, 2011) and summarises the demographics of the Local Municipality:

- The Govan Mbeki Municipality covers an area of 2 955km².
- The age structure of this region is as follows: 26.9 % of the population is under 15, 69.4% is between 15-64% and 3.7% is over 65.
- The population is growing at an annual rate of 2.84%.
- Only 31.3% of this population have a matric education and 7.9% have no formal schooling.
- The unemployment rate for the population is at 26.2% where 30.8% of these households are run by women.
- There are 83 874 households in the Govan Mbeki Local Municipality, 88.9% of which have toilets connected to a sewage line, 91.7% have weekly refuse removal, 56.5% have piped water in their homes and 90.3% have electricity.

8. DESCRIPTION OF THE PHYSICAL ENVIRONMENT

The mining right area falls within the north eastern extremity of the Highveld Coal field. These are separated by the pre-Karoo Smithfield Ridge from the Witbank Coal field to the north. Rooiberg felsites and Bushveld-Lebowa granites comprise the basement lithology. Diabase is also abundantly found in the area. Sediments above these were formed by the Dwyka Formation and were composed mainly of tillites and varvites. Deposited above the Dwyka Formation are sandstones and conglomerates with siltstones, shales and coal seams. These are called the Vryheid Formation.

The general characteristics of the surveyed area, being on the Mpumalanga Highveld, is typical Highveld consisting of grassland with isolated trees. These species are mainly foreign and therefore an indication of disturbance. The vegetation cover varies from areas with medium high but dense grass to areas with dense high vegetation (Figure 7-8). The latter of course has a negative effect on both the horizontal as the vertical archaeological visibility. Many pioneer species, such as weeds are present (Figure 9), an indication of the disturbed landscape.

The surveyed site has been disturbed to a large extent by recent human activities, mostly agricultural activities. In fact, it is largely characterised by agriculture, with small sections being used for grazing. Almost the entire area is covered with either maize or soya bean fields (Figure 10-12). A section is also used to cultivate hay (Figure 13).

The topography of the surveyed area is fairly flat, with gently sloping hills. There is a slight fall in the valleys, especially towards rivers and streams. One perennial stream, the Viskuile, was noted in the north.



FIGURE 7: VIEW OF VEGETATION ALONG ONE OF THE PROPOSED HAUL ROADS.



FIGURE 8: GENERAL VIEW OF VEGETATION IN THE SURVEYED AREA.



FIGURE 9: KOSMOS FLOWERS AND OTHER WEEDS IN THE SURVEYED AREA.



FIGURE 10: MAIZE FIELD IN THE SURVEYED AREA.



FIGURE 11: SOYA BEAN FIELD IN THE SURVEYED AREA.



FIGURE 12: THIS PHOTOGRAPH SHOWS THE EXTENT OF SOYA BEAN FIELDS IN THE SURVEYED AREA.



FIGURE 13: GRASS FARMING IN THE SURVEYED AREA.

9. RESULTS OF PUBLIC CONSULTATION AND STAKEHOLDER ENGAGEMENT

During the consultation, Mr Joseph Mtsweni and Jabulani Mahlangu stated that they are aware of graves on the property. They indicated that these should not be exhumed.

None of the grave sites identified will be exhumed (see recommendations).

10. HISTORICAL CONTEXT

Four sites of cultural heritage significance were located during the survey. Some background information is given in order to place the surveyed area and the sites found in a historical context and to contextualize possible finds that could be unearthed during construction activities. A heritage report was completed for the exact area on Schurvekop in 2012 (Van Vollenhoven 2012). The same four sites were identified in this report and are included in the discussion below (Archaetnos database; SAHRIS database).

10.1 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.

This geographical area is not well-known as one containing many prehistoric sites. One however has to realize that this most likely only indicates that not much research has been done here before. No such sites are indicated for the project area on the SAHRA database.

No Stone Age sites are for instance indicated on a map contained in a historical atlas of this area (Bergh 1999: 4). The closest known Stone Age occurrence is a Late Stone Age site at Groenvallei, close to Carolina and that of rock art close to the Olifants River to the south of Witbank (Bergh 1999: 4-5). Some Middle Stone Age artifacts were identified out of context during previous surveys in the wider geographical area (Archaetnos' database).

However, no natural shelters were seen during the survey and therefore it is possible that these people did not stay here for long times. The close vicinity of water sources and ample grazing would have made it a prime spot for hunting and obtaining water during the past. Therefore one may assume that Stone Age people probably would have moved through the area. One may therefore find small sites or occasional stone tools out of context.

10.2 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.

Iron Age sites have been identified to the south of the area, around Bethal (Bergh 1999: 7). These all are dated to the Late Iron Age. Sites such as these are known for extensive stone building forming settlement complexes. No indication of metal smelting was identified at any of these sites (Bergh 1999: 8).

It is also known that the early trade routes did not run through this area (Bergh 1999: 9). However one should bear in mind that many of these areas may not have been surveyed before and therefore the possibility of finding new sites is always a reality.

The type of environment around Schurvekop definitely is suitable for human habitation. There is ample water sources and good grazing. One would therefore expect that Iron Age people may have utilized the area. This is the same reason why white settlers later on moved into this environment.

10.3 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.

At the beginning of the 19th century the Phuthing, a South Sotho group, stayed to the east of where Schurvekop is situated. During the Difaquane they fled to the south as Mzilikazi's impi moved in from the southeast (Bergh 1999: 10-11; 109).

The first white traveler to visit these surroundings was Robert Scoon in 1829. The first Voortrekker groups of Hans van Rensburg and Louis Tregardt also passed close to this area in 1836 (Bergh 1999: 13-14). The first white farmers only settled here during the late 1850's. The town of Bethal was established in 1880 and by the 1890's this area was inhabited by many white farmers (Bergh 1999: 18-20).

During the Anglo Boer War the Highveld areas saw much action consisting of various skirmishes between Boer and Brit. Boer commando's frequently moved through the area around Bethal and Carolina (Bergh 1999: 51). Some battles were also fought close to Bethal and Carolina. The Battle of Witbank took place to the northeast of Bethal, very close to Schurvekop (Bergh 1999: 54).

Many grave sites have been found on farm land on the Highveld during heritage surveys. Some of these have been found right in the middle of mealie fields. The closest to Schurvekop are various sites that were found at the Forzando mining operations (Archaetnos database). The locations of grave sites are highly unpredictable. Graves are usually found close to where homesteads have been, but sometimes no logical explanation for the locations of these sites can be given.

11. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY

As indicated, four sites of cultural importance were identified in the surveyed area. These are the same sites identified before (Van Vollenhoven 2012). All of these date to the Historical Age.

11.1 Site 1 - Grave yard

GPS: 26°17.574'S; 29°29.728'E

This is a grave yard found in close proximity to the homesteads of farm workers as well as to a blue gum plantation. It is a large grave yard consisting of at least 78 graves (Figure 14). It contains mostly graves with stone dressings and headstones without any information. Some don't have headstones, others have cement dressing and headstones whilst a few show granite headstones. Some recent graves are only indicated by a heap of soil.

Most of the graves have no legible information meaning that it has an unknown date of death. Those with dates seem to range between 1959 and 1998. Some of the surnames identified include Mtimunye, Mtsweni, Skosana and Malekobane.



FIGURE 14: SOME OF THE GRAVES AT SITE NO. 1.

Cultural significance Table:

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	Y	H
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	Y	M
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Y	M
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	Y	H
Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group	N	
Its importance in demonstrating a high degree of creative or technical achievement at a particular period	N	
Its strong or special association with a particular community or cultural	Y	H

group for social, cultural or spiritual reasons		
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	N	
Sites of significance relating to the history of slavery in South Africa	N	
Reasoned assessment of significance using appropriate indicators outlined above:		6 - High

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 6 \text{ (High)} \times 4$$

$$= 24$$

The field rating therefore is Local Grade IIIB. It may be mitigated and should be included in the heritage register.

Two possibilities exist. The first being to manage the graves in-situ and the second being exhumation:

- The first option entails demarcating the graves, implementing a buffer and compiling a management for the sustainable preservation thereof. This should be written by a heritage expert. This usually is done when the graves are in no danger of being damaged, but where there will be a secondary impact due to the activities of the development.
- The second option is to exhume the mortal remains and then to have it relocated. This usually is done when the graves are in the area to be directly affected by the development activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA. This procedure is quite lengthy and involves social consultation.

The graves are outside of the area of direct impact, and no surface infrastructure or construction activities are planned within 300m of the site. However, there always is a secondary impact due to adjacent mining activities (blasting, subsidence etc.). Therefore Option 1 is recommended. This includes the writing of a site preservation management

plan.⁵ Access to descendants will not be impacted, as the area falls outside the proposed mine infrastructure area. The current land use will continue concurrent to the underground operations.

11.2 Site 2 - Grave yard

GPS: 26°16.455'S; 29°29.895'E

This is another grave yard consisting of at least 3 graves. These are located in the middle of a soya bean field (in 2012 this was a maize field). The graves are not in a very good condition (Figure 15). It is very likely that there may be more graves here. No headstones could be identified and the graves are covered with what is left of stone dressing.

None of the graves have any information meaning that it has an unknown date of death. Accordingly also no names of the deceased could be identified. In 2012, the farmer, Mr. F van der Spuy, however indicated that sometimes people still visit these graves.



FIGURE 15: SOME OF THE GRAVES AT SITE NO. 2.

⁵ It is standard protocol to either recommend option 1 or option 2 for graves. A management plan will address issues, such as accessibility.

Cultural significance Table:

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Neglible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	Y	H
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	Y	M
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Y	M
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	Y	H
Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group	N	
Its importance in demonstrating a high degree of creative or technical achievement at a particular period	N	
Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Y	H
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	N	
Sites of significance relating to the history of slavery in South Africa	N	
Reasoned assessment of significance using appropriate indicators outlined above:		6 – High

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 6 \text{ (High)} \times 1$$

$$= 6$$

The field rating therefore is Local Grade IIIB. It may be mitigated and should be included in the heritage register.

Two possibilities exist. The first being to manage the graves *in-situ* and the second being exhumation:

- The first option entails demarcating the graves, implementing a buffer and compiling a management for the sustainable preservation thereof. This should be written by a heritage expert. This usually is done when the graves are in no danger of being damaged, but where there will be a secondary impact due to the activities of the development.
- The second option is to exhume the mortal remains and then to have it relocated. This usually is done when the graves are in the area to be directly affected by the development activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA. This procedure is quite lengthy and involves social consultation.

The graves are outside of the area of direct impact. However, there always is a secondary impact due to adjacent mining activities (i.e. blasting and subsidence). Therefore Option 1 is recommended. This includes the writing of a site preservation management plan. Access to descendants will not be impacted, as the area falls outside the proposed mine infrastructure area. The current land use will continue concurrent to the underground operations.

11.3 Site 3 - Grave yard

GPS: 26°16.372'S; 29°29.442'E

This site is a grave yard consisting of at least 9 graves (Figure 16). All the graves have stone dressing and none have headstones. Therefore they all have an unknown date of death making it unknown graves.



FIGURE 16: SOME OF THE GRAVES AT SITE NO. 3.

Cultural significance Table:

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	Y	H
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	Y	M
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Y	M
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	Y	H
Its importance in exhibiting particular	N	

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
aesthetic characteristics valued by a community cultural group		
Its importance in demonstrating a high degree of creative or technical achievement at a particular period	N	
Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Y	H
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	N	
Sites of significance relating to the history of slavery in South Africa	N	
Reasoned assessment of significance using appropriate indicators outlined above:		6 - High

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 6 \text{ (High)} \times 3$$

$$= 18$$

The field rating therefore is Local Grade IIIB. It may be mitigated and should be included in the heritage register.

As mentioned above, two possibilities exist. The first being to manage the graves *in-situ* and the second being exhumation:

The first option entails demarcating the graves, implementing a buffer and compiling a management for the sustainable preservation thereof. This should be written by a heritage expert. This usually is done when the graves are in no danger of being damaged, but where there will be a secondary impact due to the activities of the development.

- The second option is to exhume the mortal remains and then to have it relocated. This usually is done when the graves are in the area to be directly affected by the

development activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA. This procedure is quite lengthy and involves social consultation.

Although the graves are outside of the area of direct impact, they do fall within the farm portion earmarked for the mine's surface infrastructure and underground access. Thus, the possibility of a secondary impact or inadvertent damage due to construction and operational activities exists. As this farm portion will likely be fenced in for the life of mine, accessibility to the site for descendants may also become an issue. It is therefore recommended that this site be fenced off and managed in situ (Option 1). A buffer of at least 20m must be implemented, and access for descendants catered for.

11.4 Site 4 - Grave yard

GPS: 26°16.154'S; 29°30.004'E

Site 4 is another grave yard. This one consists of at least 26 graves (Figure 17). There are two kinds of dressings and headstones being either stone or cement. None however have legible information and therefore they all have an unknown date of death making it unknown graves.



FIGURE 17: SOME OF THE GRAVES AT SITE NO. 4.

Cultural significance Table:

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Neglible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	Y	H
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	Y	M
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Y	M
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	Y	H
Its importance in exhibiting particular	N	

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Neglible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
aesthetic characteristics valued by a community cultural group		
Its importance in demonstrating a high degree of creative or technical achievement at a particular period	N	
Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Y	H
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	N	
Sites of significance relating to the history of slavery in South Africa	N	
Reasoned assessment of significance using appropriate indicators outlined above:		6 - High

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 6 \text{ (High)} \times 4$$

$$= 24$$

The field rating therefore is Local Grade IIIB. It may be mitigated and should be included in the heritage register.

Two possibilities exist. The first being to manage the graves *in-situ* and the second being exhumation:

- The first option entails demarcating the graves, implementing a buffer and compiling a management for the sustainable preservation thereof. This should be written by a heritage expert. This usually is done when the graves are in no danger of being damaged, but where there will be a secondary impact due to the activities of the development.
- The second option is to exhume the mortal remains and then to have it relocated. This usually is done when the graves are in the area to be directly affected by the

development activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA. This procedure is quite lengthy and involves social consultation.

The graves are outside of the area of direct impact (approx.. 1.4km from the proposed surface infrastructure area). However, there always is a secondary impact due to adjacent mining activities (i.e. blasting and subsidence). Therefore Option 1 is recommended. This includes the writing of a site preservation management plan. Access to descendants will not be impacted, as the area falls outside the proposed mine infrastructure area. The current land use will continue concurrent to the underground operations.

12. CONCLUSION AND RECOMMENDATIONS

The survey of the indicated area was completed successfully. As indicated four sites of cultural heritage significance were identified within the proposed project area (Figure 18).

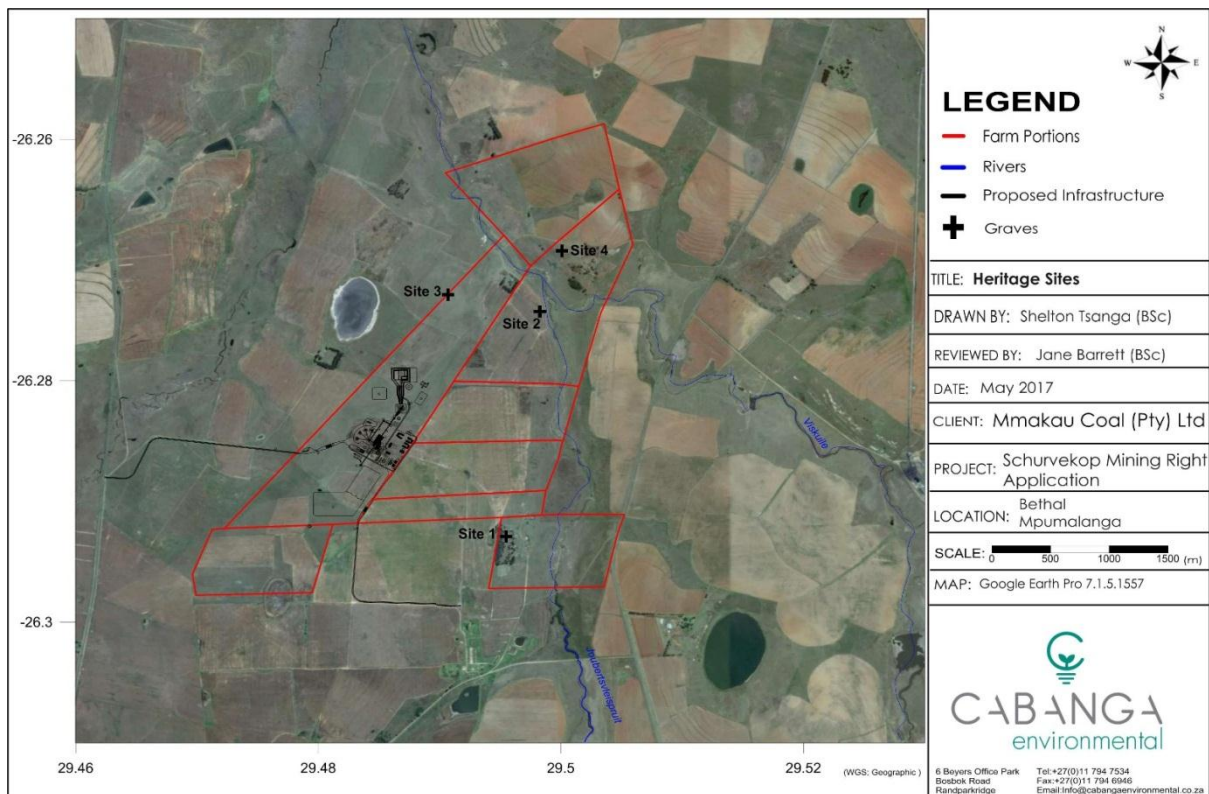


FIGURE 18: GOOGLE EARTH IMAGE INDICATING THE LOCATION OF THE SITES IDENTIFIED IN RELATION TO THE PROPOSED SURFACE ACTIVITIES (CABANGA ENVIRONMENTAL).

The following is recommended:

- All four sites identified are graves and none are to be directly impacted by the mining activities. Therefore Option 1 is recommended. The sites should be fenced in and a cultural management plan should be drafted for the sustainable preservation thereof. The plan should be drafted by a heritage specialist and should inter alia take into account a buffer zone of at least 20 m and controlled access to descendants.
- The proposed development may continue only after the mitigation measures indicated above had been implemented and approved by SAHRA.
- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Due to the density of vegetation it also is possible that some sites may only become known later on. Operating controls and monitoring should therefore be aimed at the possible unearthing of such features. 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.

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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

DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

- Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.
- Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.
- Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period
- Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
- Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.
- Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

APPENDIX C

SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Negligible – The site has no heritage significance, although it may be older than 60 years.
- Low - A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings. A site with minimal importance which is decreased by its bad state of decay.
- Low-Medium - A site of lesser importance, which is increased by a good state of preservation and contextual importance (e.g. a specific community).
- 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.
- Medium-High - A site that has high importance due to its age or uniqueness, but which decreases due to its bad state of decay.
- High - Any site, structure or feature regarded as important because of its age or uniqueness. Also any important object found within a specific context.
- Very High - A site of exceptional importance due to its age, uniqueness and good state of preservation.

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

Field ratings:

National Grade I significance: The site should be managed as part of the national estate, should be nominated as Grad I site, should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score above 50.

Provincial Grade II significance: The site should be managed as part of the provincial estate, should be nominated as Grade II site, should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score between 40 and 50.

Local Grade IIIA: The site should be included in the heritage register and not be mitigated (high significance), should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score between 36 and 40.

Local Grade IIIB: The site should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority. Score between 6 and 35.

Local Grade IIIC: The description in the phase 1 heritage report is seen as sufficient recording (low significance) and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorisation. Score below 5.

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

APPENDIX E

HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or scoping phase – establishment of the scope of the project and terms of reference.
2. Baseline assessment – establishment of a broad framework of the potential heritage of an area.
3. Phase I impact assessment – identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – if there is no likelihood that any sites will be impacted.
5. Phase II mitigation or rescue – planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III management plan – for rare cases where sites are so important that development cannot be allowed.

APPENDIX F: PREVIOUS STUDY



Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

**A REPORT ON A HERITAGE IMPACT ASSESSMENT FOR THE SCHURVEKOP
COAL MINE PROJECT NEAR BETHAL IN THE MPUMALANGA PROVINCE**

For:

**GCS
PO Box 2597
Rivonia
2128**

GCS project no.: 12-016

REPORT: AE01216V

By:

Dr. A.C. van Vollenhoven (L. Akad. S.A.)

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DISCLAIMER:

Although all possible care is taken to identify all sites of cultural importance during the survey of study areas, the nature of archaeological and historical sites are as such that it always is possible that hidden or subterranean sites could be overlooked during the study. Archaetnos and its personnel will not be held liable for such oversights or for costs incurred as a result thereof.

The South African Heritage Resources Agency (SAHRA) or one of its subsidiary bodies needs to comment on this report and clients are advised not to proceed with any action before receiving these. It is the responsibility of the client to submit this report to the relevant heritage authority.

SUMMARY

Archaetnos cc was appointed by GCS to conduct a heritage study for the proposed Schurvekop Coal Mine Project. This is located close to Bethal in the Mpumalanga Province.

The fieldwork undertaken revealed four sites of cultural heritage significance. These are discussed in the report.

At this stage it is not known what the exact location of infrastructure is and therefore the exact impact on the sites cannot be determined. A secondary impact is however expected and therefore the mitigation measures are proposed by keeping this in mind. The developer also needs to take note that all archaeological and historical sites may not have been identified. It also is possible that subterranean archaeological sites may be found later on. On identification of these it needs to be dealt with by an archaeologist.

CONTENTS

	Page
SUMMARY.....	3
CONTENTS	4
1. INTRODUCTION.....	5
2. TERMS OF REFERENCE	5
3. CONDITIONS AND ASSUMPTIONS	5
4. LEGISLATIVE REQUIREMENTS	6
5. METHODOLOGY	9
6. DESCRIPTION OF THE AREA.....	10
7. HISTORICAL CONTEXT	13
8. DISCUSSION OF SITES FOUND DURING THE SURVEY	15
9. CONCLUSIONS AND RECOMMENDATIONS	20
10. REFERENCES.....	21
APPENDIX A – DEFENITION OF TERMS	23
APPENDIX B – DEFINITION/ STATEMENT OF SIGNIFICANCE.....	24
APPENDIX C – SIGNIFICANCE AND FIELD RATING.....	25
APPENDIX D – PROTECTION OF HERITAGE RESOURCES.....	26
APPENDIX E – HERITAGE MANAGEMENT IMPACT ASSESSMENT PHASES.....	27

1. INTRODUCTION

Archaetnos cc was appointed by GCS to conduct a cultural heritage study for the proposed Schurvekop Coal Mine Project. The development consists of an underground coal mine and associated infrastructure. This is situated to the north-east of Bethal in the Mpumalanga Province.

The client indicated the area where the proposed development is to take place. The field survey was confined to this area.

2. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property (see Appendix A).
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.
4. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.
5. Review applicable legislative requirements.

3. 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 (Appendix A). 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 C).
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. In this particular case the area was very large and mountainous making it possible that certain areas may not have been surveyed fully. The vegetation cover in certain areas also is very dense making archaeological visibility difficult.
7. Since this is a pre-feasibility study and information relating to the infrastructure of the mine is not available, it is not possible to give mitigation measures. However the importance of sites is indicated and possible mitigation measures are envisaged.

4. 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).

4.1 The National Heritage Resources Act

According to the above-mentioned act 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.

The national estate (see Appendix D) includes the following:

- a. Places, buildings, structures and equipment of cultural significance

- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment only looks at archaeological resources. The different phases during the HIA process are described in Appendix E. An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial):

- 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 (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. 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 of 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.

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

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)**.

4.2 The National Environmental Management Act

This act (Act 107 of 1998) 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.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

5. METHODOLOGY

5.1 Survey of literature

A survey of 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)¹, while photographs were also taken where needed. The survey was undertaken by a physical survey via off-road vehicle and on foot.

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.

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 the Global Positioning System (GPS). The information was added to the description in order to facilitate the identification of each locality.

¹ A Garmin Oregon 550 with an accuracy factor of a few meters.

5.5 Evaluation of Heritage sites

The evaluation of heritage sites is done by giving a field rating of each (see Appendix C) using the following criteria:

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

6. DESCRIPTION OF THE AREA

The area that was surveyed is situated to the north-east of the town of Bethal in the Mpumalanga Province. It is situated on portions 6, 8 and 15-21 of the farm Schurvekop 227 IS (Figure 1-2). All mining infrastructure are planned to be placed on portion 8.

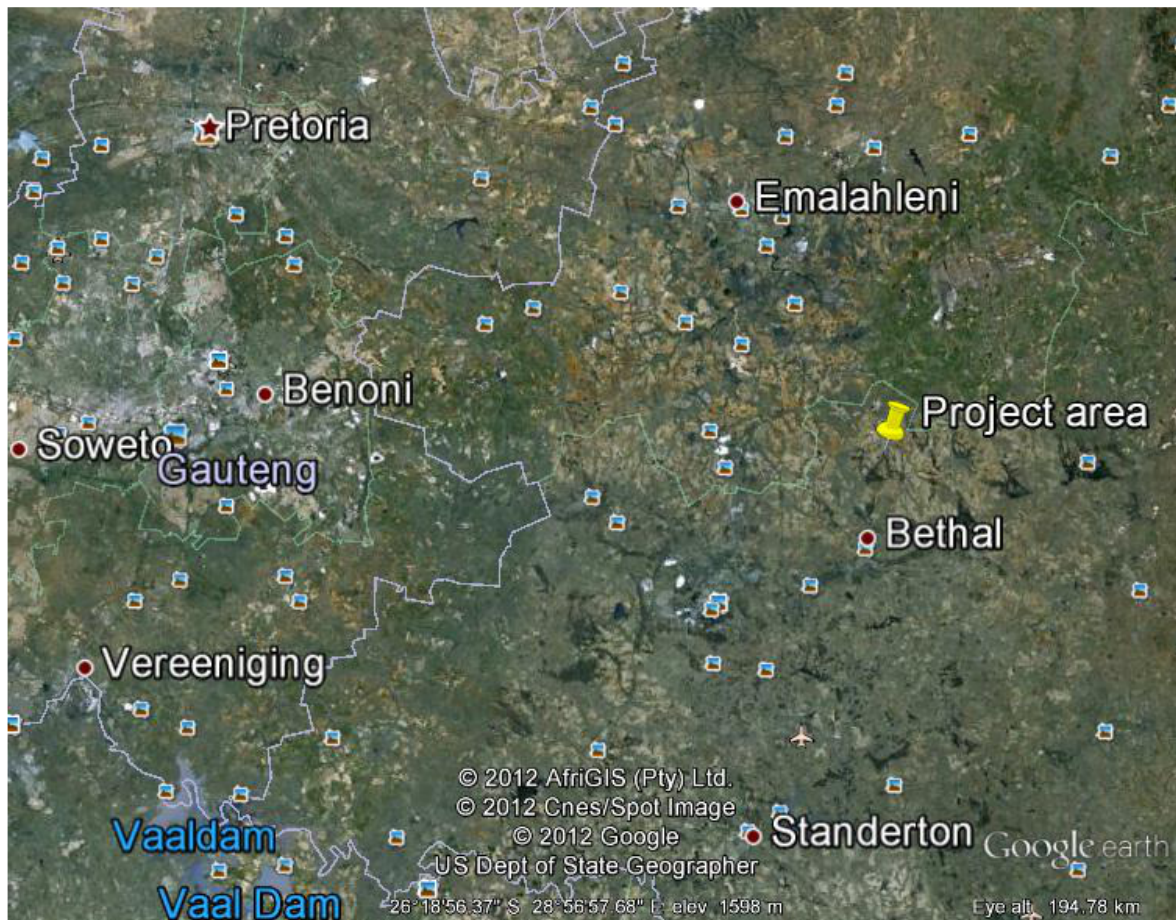


Figure 1 Location of the surveyed area.

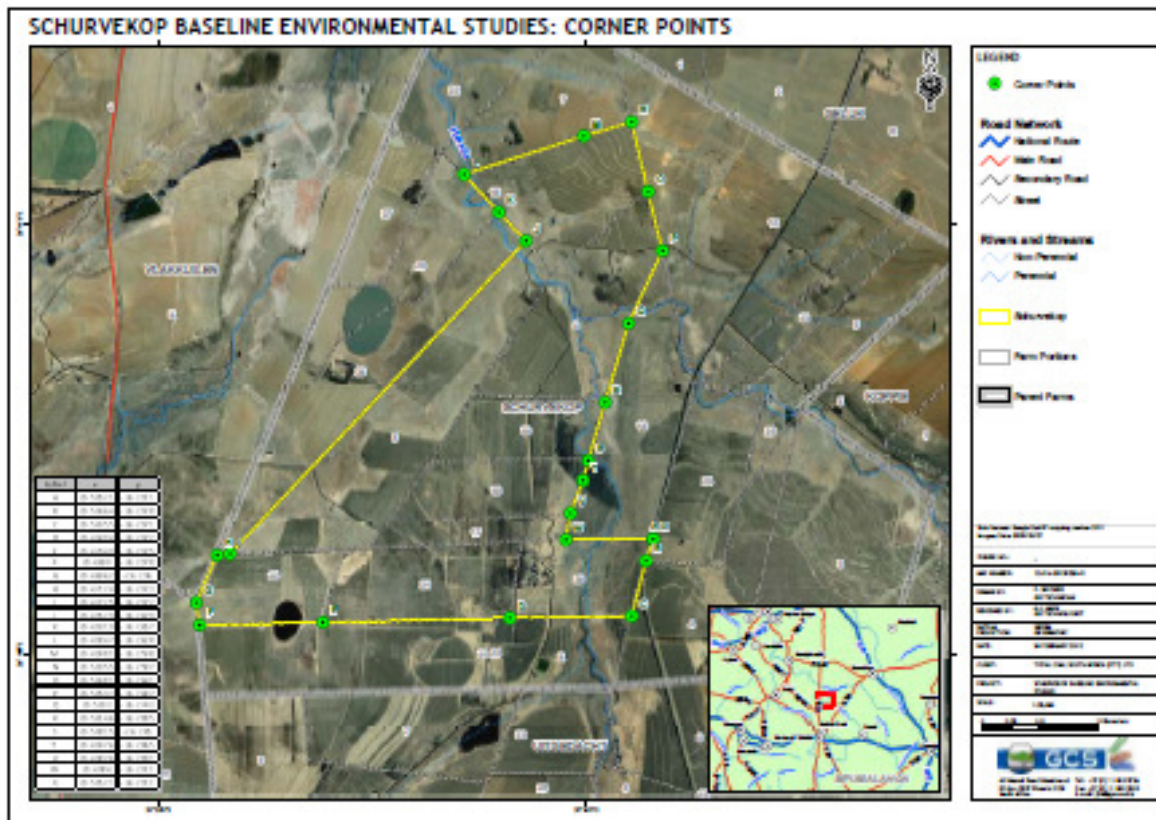


Figure 2 Map indicating the site boundaries as well as the different farm portions. Note portion 8 (west), which is where the infrastructure for the mine will be placed.

The environment of the area is mostly disturbed by farming activities. This consists mainly of agricultural fields. Some areas are also used for grazing. Pioneer plant species indicate that even some of these most likely were used as agricultural fields in the past (Figure 3-5). During the survey the grass cover as well as maize crops was reasonably long, making archaeological visibility difficult.

The natural topography in most of the southern and central part of the surveyed area is reasonably flat with a slight fall to the south-east where the Viskuille Spruit drains the area in a southern direction. The northern part of surveyed area is steep where the Schurvekop dominates the surroundings.



Figure 3 General view of the surveyed area showing soya bean fields.



Figure 4 Another view of the surveyed area showing maize fields and Schurvekop in the background.



Figure 5 View of grassland showing pioneer vegetation.

7. HISTORICAL CONTEXT

During the survey four sites of cultural heritage significance was located in the area to be developed. These are all grave sites belonging to the Historical Age.

However, there always is a possibility that more sites may become known later and that those need to be dealt with in accordance with the legislation discussed above. In order to enable the reader to better understand archaeological and cultural features, it is necessary to give a background regarding the different phases of human history.

7.1 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.

This geographical area is not well-known as one containing many prehistoric sites. One however has to realize that this most likely only indicates that not much research has been done here before. On the existing SAHRA database no such sites are indicated here.

No Stone Age sites are for instance indicated on a map contained in a historical atlas of this area (Bergh 1999: 4). The closest known Stone Age occurrence is a Late Stone Age site at Groenvlei, close to Carolina and that of rock art close to the Olifants River to the south of Witbank (Bergh 1999: 4-5).

The environment is such that it does not provide much natural shelter and therefore it is possible that Stone Age people did not settle here for long periods of time. They would have however been lured to the area due to an abundance of wild life as the natural vegetation would have provided ample grazing. One may therefore find small sites or occasional stone tools.

7.1 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.

Iron Age sites have been identified to the south of the area, around Bethal (Bergh 1999: 7). These all are dated to the Late Iron Age. Sites such as these are known for extensive stone building forming settlement complexes. No indication of metal smelting was identified at any of these sites (Bergh 1999: 8).

It is also known that the early trade routes did not run through this area (Bergh 1999: 9). However one should bear in mind that many of these areas may not have been surveyed before and therefore the possibility of finding new sites is always a reality.

The type of environment around Schurvekop definitely is suitable for human habitation. There is ample water sources and good grazing. One would therefore expect that Iron Age people may have utilized the area. This is the same reason why white settlers later on moved into this environment.

7.2 Historical Age

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. This era is sometimes called the Colonial era or the recent past.

Due to factors such as population growth and a decrease in mortality rates, more people inhabited the country during the recent historical past. Therefore and because less time has

passed, much more cultural heritage resources from this era have been left on the landscape. It is important to note that all cultural resources older than 60 years are potentially regarded as part of the heritage and that detailed studies are needed in order to determine whether these indeed have cultural significance. Factors to be considered include aesthetic, scientific, cultural and religious value of such resources.

At the beginning of the 19th century the Phuthing, a South Sotho group, stayed to the east of where Schurvekop is situated. During the Difaquane they fled to the south as Mzilikazi's impi moved in from the southeast (Bergh 1999: 10-11; 109).

The first white traveler to visit these surroundings was Robert Scoon in 1829. The first Voortrekker groups of Hans van Rensburg and Louis Tregardt also passed close to this area in 1836 (Bergh 199: 13-14). The first white farmers only settled here during the late 1850's. The town of Bethal was established in 1880 and by the 1890's this area was inhabited by many white farmers (Bergh 1999: 18-20).

During the Anglo Boer War the Highveld areas saw much action consisting of various skirmishes between Boer and Brit. Boer commando's frequently moved through the area around Bethal and Carolina (Bergh 1999: 51). Some battles were also fought close to Bethal and Carolina. The Battle of Witbank took place to the northeast of Bethal, very close to Schurvekop (Bergh 1999: 54).

Many grave sites have been found on farm land on the Highveld during heritage surveys. Some of these have been found right in the middle of mealie fields. The closest to Schurvekop are various sites that were found at the Forzando mining operations (Archaetnos database). The locations of grave sites are highly unpredictable. Graves are usually found close to where homesteads have been, but sometimes no logical explanation for the locations of these sites can be given.

8. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY

8.1 Site 1

This is a grave yard found in close proximity to the homesteads of farm workers as well as to a blue gum plantation. It is a large grave yard consisting of at least 78 graves (Figure 6). It contains mostly graves with stone dressings and headstones without any information. Some doesn't even have headstones. Others cement dressing and headstones whilst a few show granite headstones. Some recent graves are only indicated by a heap of soil.

Most of the graves have no legible information meaning that it has an unknown date of death. Those with dates seem to range between 1959 and 1998. Some of the surnames identified include Mtimunye, Mtsweni, Skosana and Malekobane.

GPS: 26°17.574'S
29°29.728'E

Graves always are regarded as having a **high** cultural significance. In this case there are three categories of graves being those older than 60 years, those younger than 60 years and those of

an unknown date. These graves are of a local significance and are therefore given a rating of Grade IIIB. It may therefore be mitigated.

There are two options when dealing with graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation.

The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved.



Figure 6 Some of the graves at site no. 1.

8.3 Site 2

This is another grave yard consisting of at least 3 graves. These are located in the middle of a maize field and not in a very good condition (Figure 7). It is very likely that there may be more graves here. No headstones could be identified and the graves are covered with what is left of stone dressing.

None of the graves have any information meaning that it has an unknown date of death. Accordingly also no names of the deceased could be identified. The farmer, Mr. F van der Spuy, however indicated that sometimes people still visit these graves.



Figure 7 Graves at site no. 2.

GPS: 26°16.455'S
29°29.895'E

Graves always are regarded as having a **high** cultural significance. In this case there is one of the categories of graves being those of an unknown date. These graves are of a local significance and are therefore given a rating of Grade IIIB. It may therefore be mitigated.

There are two options when dealing with graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation.

The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is

involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved.

8.4 Site 3

This site is a grave yard consisting of at least 9 graves (Figure 8). All the graves have stone dressing and none have headstones. Therefore they all have an unknown date of death making it unknown graves.

GPS: 26°16.372'S
29°29.442'E



Figure 8 Some of the graves at site no. 3.

Graves always are regarded as having a **high** cultural significance. In this case there is only one category of graves being those of an unknown date. These graves are of a local significance and are therefore given a rating of Grade IIIB. It may therefore be mitigated.

There are two options when dealing with graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation.

The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is

involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved.

8.5 Site 4

Site 4 is another grave yard. This one consists of at least 26 graves (Figure 9). There are two kinds of dressings and headstones being either stone or cement. None however have legible information and therefore they all have an unknown date of death making it unknown graves.

GPS: 26°16.154'S
29°30.004'E



Figure 9 Some of the graves at site no. 5.

Graves always are regarded as having a **high** cultural significance. In this case there is only one category of graves being those of an unknown date. These graves are of a local significance and are therefore given a rating of Grade IIIB. It may therefore be mitigated.

There are two options when dealing with graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation.

The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is

involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved.

9. CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the assessment of the area was conducted successfully. In the surveyed area four sites (Figure 10) of cultural significance have been found. These are all graves. Both Mr. F van der Spuy and Mr. M Mtimunye (Personal communication), indicated that they know of no other grave sites on the portions that was surveyed. They have respectively been 50 and 40 years on the farm. Some farm buildings identified are not included as these either were recent or too dilapidated to have any cultural significance.

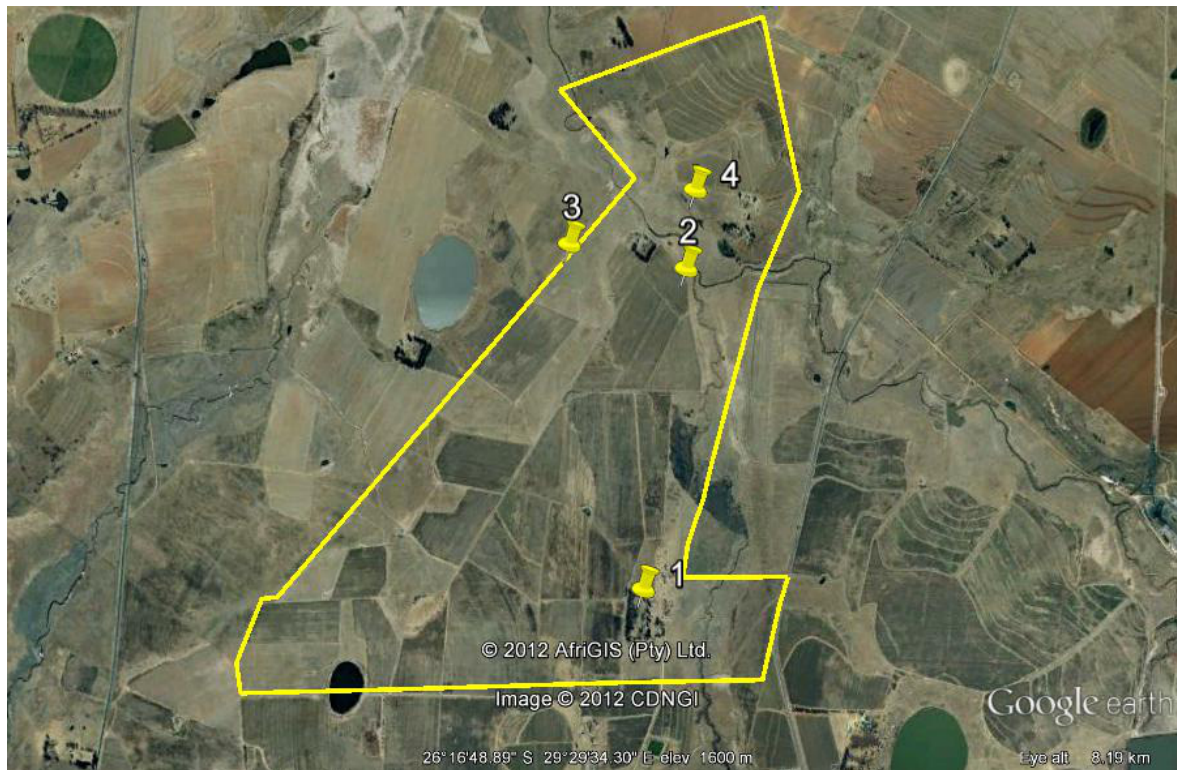


Figure 10 Google map indicating the sites located during the survey.

The final recommendations are as follows:

- All four sites found are grave yards. These are of a high cultural significance, but it may be mitigated.
- Should it be directly impacted on by the mine the graves may be exhumed and the human remains reburied. Before this may happen the necessary advertising, possible social consultation and permitting applications should be implemented.

- Should these not be impacted on directly, there will definitely be a secondary impact. The graves should then be fenced in a management plan for the preservation and maintenance thereof be written.
- It is however foreseen that site no. 3 will definitely be impacted on as it falls within the area (portion 8) where the mine infrastructure is planned. Due to the possibility of the soil caving in as a result of underground mining activities, there will more likely also be a direct impact on the other three sites. It will therefore have to be exhumed and the remains reburied.
- Information indicating that impact will not be direct may be provided by the mine, which will result in the other option (fencing and managing) being chosen.
- It should be remembered that due to the natural factors indicated in the report, it is possible that all cultural sites may not have been identified. Also the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. Care should therefore be taken when development work commences that, if any more artifacts are uncovered, a qualified archaeologist be called in to investigate.

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Van der Spuy, Mr. F. 2012.04.12. Farmer, Personal communication.

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

DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

- Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.
- Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.
- Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period
- Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
- Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.
- Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

APPENDIX C

SIGNIFICANCE AND FIELD RATING:

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

Field ratings:

- National Grade I significance should be managed as part of the national estate
- Provincial Grade II significance should be managed as part of the provincial estate
- Local Grade IIIA should be included in the heritage register and not be mitigated (high significance)
- Local Grade IIIB should be included in the heritage register and may be mitigated (high/ medium significance)
- General protection A (IV A) site should be mitigated before destruction (high/ medium significance)
- General protection B (IV B) site should be recorded before destruction (medium significance)
- General protection C (IV C) phase 1 is seen as sufficient recording and it may be demolished (low significance)

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

APPENDIX E

HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or scoping phase – establishment of the scope of the project and terms of reference.
2. Baseline assessment – establishment of a broad framework of the potential heritage of an area.
3. Phase I impact assessment – identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – if there is no likelihood that any sites will be impacted.
5. Phase II mitigation or rescue – planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III management plan – for rare cases where sites are so important that development cannot be allowed.