



Archaetnos Culture & Cultural
Resource Consultants
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**A REPORT ON A HERITAGE IMPACT ASSESSMENT FOR THE STEYNOL
UMTHOMBO PROJECT NEAR SPRINGS IN THE GAUTENG PROVINCE**

For:

**GCS
PO Box 2597
Rivonia
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GCS project no.: 11-537

REPORT: AE01223V

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SUMMARY

Archaetnos cc was appointed by GCS to conduct a heritage study for the proposed Steynol Umthombo Project. This is a clay and coal mining application. This is close to Springs in the Gauteng Province.

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

Mitigation measures are proposed for the sites, especially those with a high cultural significance. The latter refers to two grave yards and one residential site (a compound) from a previous mining era. For all the other sites this report is seen a sample mitigation. The proposed mining development may continue, but only after proper implementation of the mitigation measures proposed.

The developer also needs to take note that all archaeological and historical sites may not have been identified and that subterranean archaeological sites may be found later on. Should this happen it needs to be dealt with by an archaeologist.

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1. INTRODUCTION

Archaetnos cc was appointed by GCS to conduct a cultural heritage study for the proposed Steynol Umthombo Project consisting of coal and clay mining. This is situated to the east of Springs in the Gauteng Province.

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

2. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify 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. This included a previous report done here. Sources consulted in this regard are indicated in the bibliography.

5.2 Field survey

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

The survey was undertaken 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.

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 east of the town of Springs in the Gauteng Province. It is on portions 221 and 22 of the farm Grootvally 124 IR (Figure 1).

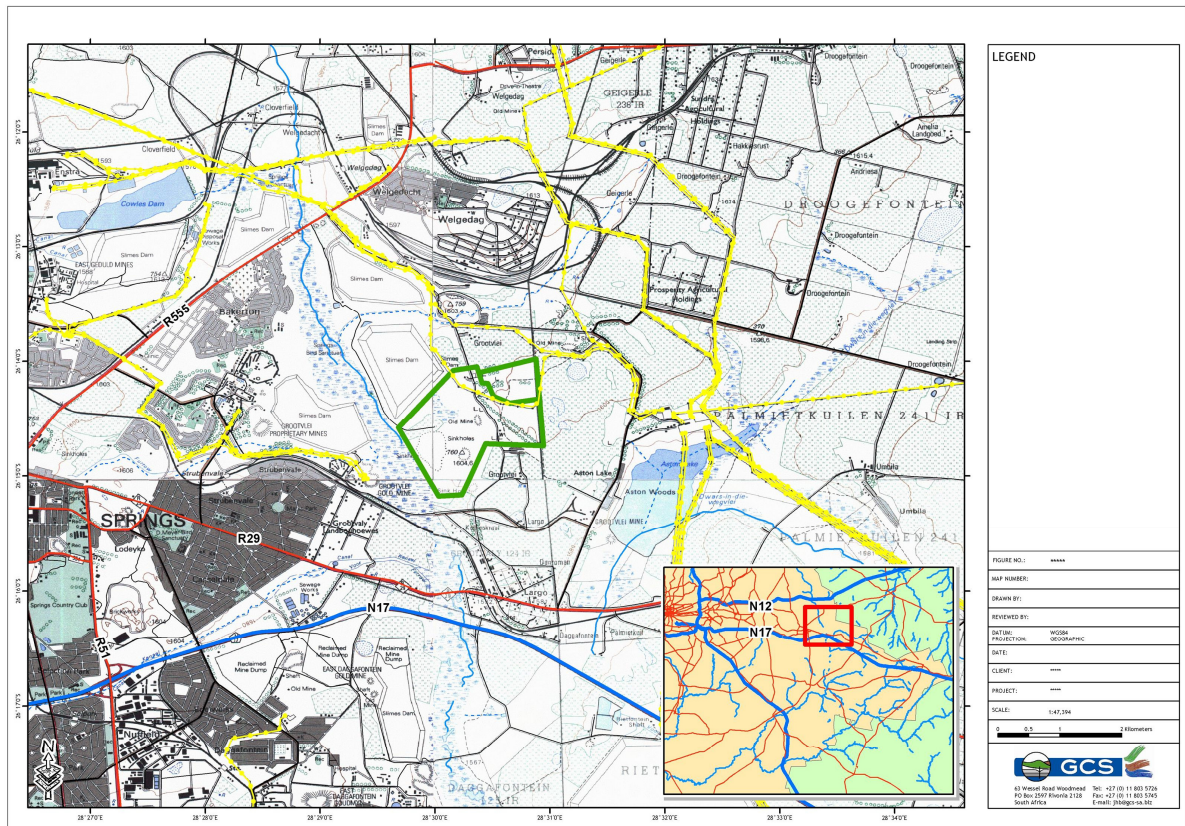


Figure 1 Location of the surveyed area in green.

The environment of the area is mostly disturbed. In fact the only areas with natural vegetation only include pioneer species. The disturbance were mainly caused by past mining activities and include quarries, mine heaps and dumping areas (Figure 2-4). During the survey the grass cover was reasonably long, making archaeological visibility difficult.

The natural topography of the surveyed area is reasonably flat with a slight fall to the south-west where the Blesbok Spruit is situated. A marshland is found in the north-western part of the property.



Figure 2 General view of the surveyed area showing a quarry and slimes dam just outside of the property.



Figure 3 Another view of the surveyed area showing a mine heap and pioneer plant species.



Figure 4 View of dumping within the surveyed area.

7. HISTORICAL CONTEXT

During the survey ten sites of cultural heritage significance was located in the area to be developed. This includes four of the six sites identified during a previous survey. The two others, being the main gate and shooting range, were again located but are not regarded as having any cultural significance and is therefore excluded from this report.

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. Another problem is that it has undergone many recent historical developments being in the economical heartland of Gauteng. This may have demolished sites during a time when legislation was less effective. On the existing SAHRA Database no such sites are indicated here.

The closest Stone Age occurrences found to the Springs area are linked to the Middle and Late Stone Age. Middle Stone Age sites were identified at Linksfield and at Primrose. Sites dating to the Late Stone Age sites are those at Glenferness, Pietkloof and Zevenfontein (Bergh 1999: 4).

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 and there are plenty natural water sources. 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.

Bergh (1999: 7) does indicate that Iron Age sites have been identified in the area between Johannesburg and Heidelberg, but gives no additional detail. 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: 7-8).

It is also known that none of the early trade routes went through the area. No specific community occupied the area during the 18th century. During the Difaquane the Ndebele of Mzilikazi did move through the area in 1827 and in 1832 the Zulu also moved through this area in order to attack the Ndebele (Bergh 1999: 9-11). This indicates that Iron Age people probably utilized this environment in the past.

The good grazing and access water in the area would have provided a good environment for Iron Age people although building material seem to be reasonably scarce. However the area has been changed by recent human interventions such as farming and mining and such sites may therefore have been destroyed.

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.

The first early traveler who visited this area was Robert Scoon who passed through during 1836. In 1847 Dr. David Livingstone also visited the area during his travels. The parties of the Voortrekkers Louis Tregardt and Hans van Rensburg also moved through to the east of the surveyed area during 1836 (Bergh 1999: 13-14). White farmers only settled in the study area between 1839 and 1841 (Bergh 1999: 15).

One may therefore expect sites associated with the first white farmers. However again the interventions mentioned earlier may already have destroyed such sites. Historical sites have indeed been located here earlier. This includes sites linked to the mining history of the area,

such as infrastructure buildings and compounds. Two grave sites have also been found on the farm (Nxasana 2010: 10-17). As indicated above, sites number 1 (main gate) and number 3 (shooting range) are excluded from this study as they do not have any heritage significance.

8. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY

8.1 Site 1

This is the remains of an industrial structure which had something to do with previous mining activities (Figure 5). It most likely is younger than 60 years.

GPS: 26°14.324'S
28°30.347'E

The site has a **low** cultural significance based on its historic and scientific value. It has a general local significance and is therefore given a rating of Grade C (IVC). This report is seen as ample mitigation and it may therefore be demolished during site development.



Figure 5 Industrial structure at site no. 1.

8.2 Site 2

This is also site no. 2 of the previous report. It is the ruins of a number of industrial structures. One of these has graffiti on dating to the liberation struggle (Figure 6-7). The previous report suggests that this is a sewage dam, but this cannot be confirmed.

GPS: 26°14.409'S
28°30.325'E

The site has a **medium** cultural significance based on its historic value. It is more than likely not older than 60 years and definitely is not very unique. Therefore it is of local significance only and is given a rating of Grade C (IVC). This report is seen as ample mitigation and it may therefore be demolished during future developments.



Figure 6 One of the structures at site no. 2.



Figure 7 The structure at site no. 2 showing political graffiti from 1972. It has no important historical message.

8.3 Site 3

This is one of the sites numbered as no. 3 in the previous report (two sites were numbered 3, being the shooting range and this one). It is a large grave yard consisting of numerous graves – at least 500 (Figure 8). It contains different kinds of headstones and grave dressing – cement, stone, bricks and granite.

Most of the graves have no information meaning that it has an unknown date of death. Those with dates seem to range between 1950 and 1970. Some of the surnames identified include Phati, Mbulelwa, Masina and Maseke.

GPS: 26°14.747'S
28°30.222'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 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.

8.4 Site 4

This is also site no. 4 of the previous survey. It is a grave yard consisting of at least 37 graves (Figure 9). All the graves have stone dressing and some also have stone headstones. None of these have any information. Therefore they all have an unknown date of death making it unknown graves.

GPS: 26°14.205'S
28°30.189'E



Figure 9 Some of the graves at site no. 4.

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 5

This is another industrial structure linked to the mining history of the area (Figure 10). It is a reasonably large structure. It is not possible to determine its exact age and function.

GPS: 26°14.660'S
28°30.549'E

The site has a **low** cultural significance based on its historic and scientific value. It also is in a bad state of deterioration. The site has a general local significance and is therefore given a rating of Grade C (IVC). This report is seen as ample mitigation and it may therefore be demolished during site development.



Figure 10 Site no. 5.

8.6 Site 6

Site no. 6 is also site no. 6 from the previous survey report. It is a large site consisting of residential structures. This was the compound for mine workers (Figure 11-12). Most of the buildings are quite unique rondavel like structures. Other structures are built from face-brick, but the function thereof could not be determined.

GPS: 26°14.113'S
28°30.335'E



Figure 11 Some of the residential units at site no. 6.



Figure 12 Face brick structure at site no. 6.

The site has a **high** cultural significance based on its uniqueness and historic and social value. It has a general local significance. It however is difficult to determine the rating of the site – it would either be IIIA, IIIB or A (IVA). The different possibilities have the following implications:

IIIA – no mitigation allowed and it should be included in the heritage register. It would then have to be managed and preserved.

IIIB – it may be mitigated and should be included in the heritage register. Mitigation would include a phase II study aimed at the full documentation of the site.

A (IVA) – site may be destructed, but it should be mitigated first.

The phase II should be used to determine which of these is the correct rating. Therefore a phase II study is recommended, aimed at the full documentation of the site.

8.7 Site 7

Site 7 lies just to the south and adjacent to site 6. It seems to be the residential area for the senior staff at the previous mine. It consists of the ruin of various houses and other structures (Figure 13).

GPS: 26°14.259'S
28°30.464'E

The site has a **low** cultural significance based on its historic value. It is not unique and is in a bad state of repair. It has a general local significance and is therefore given a rating of Grade C (IVC). This report is seen as ample mitigation and it may therefore be demolished during site development.



Figure 13 Ruins of mine house at site no. 7.

8.8 Site 8

This is a recent historical building with an industrial purpose (Figure 14). It looks like a bay from where sand and clay may have been loaded onto trucks.

GPS: 26°14.259'S
28°30.464'E

The site has a **low** cultural significance based on its historic and social value. It has a general local significance and is therefore given a rating of Grade C (IVC). This report is seen as ample mitigation and it may therefore be demolished during site development.



Figure 14 Industrial building at site no. 8.

8.9 Site 9

This is another industrial building linked to the mining history. It seems to be part of the processing plant. It may be just older than 60 years of age (Figure 15).

GPS: 26°14.708'S
28°30.320'E



Figure 15 One of the graves at site no. 15.

The site has a **low** cultural significance. It is of a local significance based on its historical and scientific value. Therefore it is given a rating of Grade C (IVC). It may therefore be demolished during development activities on site.

8.10 Site 10

This is the ruin of yet another industrial building linked to the mining history. It is in an extremely deteriorated state (Figure 16).

GPS: 26°14.442'S
28°30.406'E

The site has a **low** cultural significance. It is of a local significance based on its historical and scientific value as well as its bad state. Therefore it is given a rating of Grade C (IVC). It may therefore be demolished during development activities on site.



Figure 16 Remains of building at site no. 10.

9. CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the assessment of the area was conducted successfully. In the surveyed area 10 sites (Figure 17) of cultural significance have been found.

The final recommendations are as follows:

- In all instances where it is indicated that sites may be demolished, this means if the development will have an impact thereon. Should it not be the case, the sites should be left to natural degradation. This is since it is yet unknown exactly what the mine layout would be and how it would affect the heritage sites.
- Sites number 1, 5, 7, 8, 9 and 10 all have a low cultural significance. This report is seen as ample mitigation and it may therefore be demolished during development.
- Site number 2 is regarded as having a medium cultural significance. The report is also seen as ample mitigation in this regard and it may therefore also be demolished during development.
- Site number 6 (compound) is also regarded as having high cultural significance. Three possibilities as to its exact grading. These are –
 - IIIA – no mitigation allowed and it should be included in the heritage register. It would then have to be managed and preserved.
 - IIIB – it may be mitigated and should be included in the heritage register. Mitigation would include a phase II study aimed at the full documentation of the site.

- A (IVA) – site may be destructed, but it should be mitigated first.
- It is therefore recommended that a phase II study be done in order to determine which of these is the correct rating. The phase II study is aimed at the full documentation of the site.



Figure 17 Google image indicating the location of sites found during the survey.

- Sites number 3 and 4 (graves) have a high cultural significance. 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. The mine will also have to motivate for the exhumation by indicating that this would be the only option, since the graves are directly in the way of infrastructure that cannot be moved.
- Should the graves however 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.
- Table 1 gives a risk assessment for graves.

Table 1 Risk management relating to graves

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

***The developer may decide to start a new cemetery on their premises for this purpose. In such a case they will save the cost of grave plots etc. (as compared to purchasing additional land for this purpose). If the graves are located on mine property, the graves will then be a site they need to manage permanently meaning that it will need to be fenced and a management plan needs to be compiled and implemented.**

- It should be remembered that due to the natural factors indicated in the report, it is possible that more cultural sites may be present. Also the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. Care should also 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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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.