Archaetnos Culture & Cultural
Resource Consultants
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A CULTURAL HERITAGE MANAGEMENT PLAN AND IMPACT ASSESSMENT FOR THE PROPOSED UMSOBOMVU COAL MINE CLOSE TO DUNDEE, KWAZULU-NATAL PROVINCE

For:

Umsobomvu Coal (Pty) Ltd

REPORT: **AE01451V**

By:

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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 Umsobomvu Coal (Pty) Ltd to write a cultural heritage resources management plan for the proposed mining area of the Umsobomvu Coal Mine, close to Dundee in the KwaZulu-Natal Province. Thirty sites of cultural heritage importance were identified during an earlier heritage study in the area. These are discussed and heritage management guidelines are given. As impacts could not be determined during the first study, it is also addressed in this management document.

Some basic principles for heritage management which are applicable will also be discussed. These are the basic conservation and preservation principles to be used in managing cultural resources. Recommendations made in the document are done within the parameters of the National Heritage Resources Act (25 of 1999).

The management plan is an open document meaning that it should be adapted and reassessed from time to time. A continuation period of at least five years is given. However any developments done before the expiry of the five year period should be used to re-evaluate the impact on cultural resources and to make the necessary adaptations to the document. The five year period ends in 2019.

Mitigation measures are also proposed. The development may only continue after implementation of the mitigation measures.

The developer also needs to take note that all archaeological and historical sites may not have been identified. Apart from natural factors this is also due to certain farms not being accessible. 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.

CONTINUATION STRATEGY

IT IS IMPORTANT TO NOTE THAT A MANAGEMENT PLAN IS AN OPEN DOCUMENT. ACCORDINGLY IT CAN BE CHANGED CONSTANTLY WITHIN THE PARAMETERS OF CULTURAL HERITAGE RESOURCES MANAGEMENT.

THIS PARTICULAR MANAGEMENT PLAN SHOULD BE RELOOKED AT LEAST EVERY FIVE YEARS AND ALSO WHENEVER A SPECIFIC DEVELOPMENT IS PLANNED (WHICHEVER COMES FIRST). IN THE LATTER CASE THE IMPACT OF DEVELOPMENT ON THOSE CULTURAL HERITAGE RESOURCES IN THE EFFECTED AREA SHOULD BE RELOOKED AT. HOWEVER SUCH A DEVELOPMENT MAY HAVE A SECONDARY IMPACT ON OTHER CULTURAL RESOURCES AND THIS SHOULD ALSO BE ASSESSED.

THE PLAN SHOULD THEN BE ADAPTED IN ACCORDNACE WITH THOSE PLANS AND ANY DEVELOPMENTS IN THE TIME THAT LAPSED UP TO THAT PARTICULAR POINT IN TIME. ANY ADDITIONAL INFORMATION THAT WERE COLLECTED (FOR INSTANCE FROM RESEARCH) SHOULD ALSO BE USED TO RE-EVALUTE CULTURAL HERITAGE RESOURCES.

THIS MANAGEMENT PLAN SHOULD AT LEAST BE RE-EVALUATED IN THE YEAR 2019.

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1. INTRODUCTION

Archaetnos cc was appointed by Umsobomvu Coal (Pty) Ltd to write a cultural heritage resources management plan for the proposed mining area of the Umsobomvu Coal Mine, close to Dundee in the KwaZulu-Natal Province. Thirty sites of cultural heritage importance were identified during an earlier heritage study in the area (see Van Vollenhoven 2012).

These are discussed and heritage management guidelines are given. As impacts could not be determined during the first study, it is also addressed in this management document. The client indicated the area where the proposed development is to take place. The field survey was confined to this area.

Basic principles also needs to be adhered to and will be discussed in this document. The management plan is the result of these processes and the conventions for the sustainable preservation, conservation and management of such cultural resources.

The survey of cultural heritage resources is called a Phase 1 investigation. During this process possible impacts are identified and mitigation measures lined out (Van Vollenhoven 1998: 54). The plan was also done in order to assist the Umsobomvu Coal Mine with planning for future developments.

Therefore specific mitigation measures needed are discussed. The document does nevertheless state that any future development plans should be done in accordance with this management plan.

A Phase 2 investigation is a detailed investigation of a specific cultural resource. This usually entails detailed documentation and research (Van Vollenhoven 1998: 49-52). For the purpose of this document it was not needed.

A management plan is sometimes called Phase 3. However the three steps do not necessarily follow each other. For instance, sometimes after the phase 1 study, a management plan is drawn up without doing detailed research. This is something that can be done at a later stage and, if needed the management plan can be adapted after such a study (Van Vollenhoven 1998: 54). The basic principles for CRM as outlined by Van Vollenhoven (2002: 10-13) were also applied in this management plan. These refer inter alia to the attention given to heritage legislation, the evaluation of resources by trained professionals and community participation.

2. TERMS OF REFERENCE

The Terms of Reference for the study were to:

1. Write a management plan for the cultural heritage resources at the Umsobomvu Coal Mine.

2. Indicate the necessary management guidelines and recommendations to enable the Umsobomvu Coal Mine to manage these properly.

3. Discuss the impact of the mining development on the known objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property. Applicable terms are defined in Appendix A.

4. Assess the significance of the above mentioned cultural resources as well as those already known, 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.

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 many areas inaccessible due to different factors. This includes locked gates and natural factors such as the steep slope (not even a 4 x 4 vehicle could gain access) and dense vegetation cover in certain areas. The mine should however note that any additional sites discovered or information that may come to light in the future should be included in this management plan during the implementation of the sustainable continuation strategy.

7. It needs to be understood that this document entails a heritage impact assessment as well as a broad management plan for the known cultural heritage resources within the mine boundary. It does not include a detailed management plan for the management of specific cultural features on site.

8. A management plan entails recommendations as to the preservation, conservation, interpretation and utilization of cultural resources (Van Vollenhoven 1998: 54-55). Management can be done through five steps that are mutually inclusive and not necessarily chronological. These steps are in accordance with the Heritage Resources Paradigm as developed by Van Vollenhoven (2000) and which is embedded in the Contextual Paradigm in the Archaeology (Appendix D). The steps are conservation/preservation, utilization, marketing, auditing and other action steps.

    - Conservation and preservation

      This refers to the criteria for keeping the historical character of a cultural resource intact. It entails the setting of criteria for the preservation of cultural resources. In this case it has been done by evaluating the historical, social, aesthetic, technological and scientific value of the resources in relation to their uniqueness, condition of preservation and research potential.

      It also refers to the actions necessary for the preservation of these resources. In this management plan it is indicated at the description of each individual resource. It mentions the actions to be taken by the mine in order to preserve the cultural heritage resources on their property.

      Security measures are also included herewith. This refers to steps needed to prevent the looting of or damage done by humans to the cultural heritage resources. This is also included at the description of each individual resource.

      The last aspect here refers to the training of personnel in order for them to know how to deal with cultural heritage resources. The management guidelines and recommendations in this management plan will provide the basic training needed for this purpose.

    - Utilization

This aspect refers to the sustainable utilization of cultural resources in order to also preserve it on the long term. The most important thing here which relates to Umsobomvu is the interpretation of the resources. This is also indicated under the description of each individual resource. Utilization may include an adapted (new), commercial or scientific use or a combination thereof.

- Marketing

  This issue deals with the possibility to make cultural heritage resources accessible and useful for tourism purposes. Again this receives attention under the description of each individual resource. It is important to realize that utilization will always be inferior to conservation and preservation principles.

- Auditing

  Auditing refers to the peer review and evaluation of heritage reports and management plans. It also entails the frequent monitoring of management plans in order to determine whether the recommendations thereof are adhered to. For this purpose a continuation strategy has been included on page 4 of this document.

- Other action steps

  These are general steps that the managing authority should implement in order to preserve and conserve cultural heritage resources while also maximizing the potential thereof. This should be done within the capacity and capabilities of the managing authority (in this case the Umsobomvu Coal Mine), but it is important that the managing authority should take the necessary steps to improve its capacity and capabilities.

  It includes measures to sensitize visitors and staff members to the importance of cultural heritage resources, training of personnel at institutions involved in cultural resources, forming partnerships with other institutions involved in cultural resources and obtaining the necessary funds to implement the management guidelines and recommendation of the management documents (in this case this management plan).

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 or scientific or technological value.

The national estate (see Appendix E) 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 only looks at archaeological resources.

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 000m^2 or involve three or more existing erven or subdivisions thereof
d. Re-zoning of a site exceeding 10 000 m^2
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.

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.

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

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place.

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

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

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 Field survey

The survey, done in May 2012, was conducted according to generally accepted AIA and HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development. If required, the location/position of any site was determined by means of a Global Positioning System (GPS), while photographs were also taken where needed.

The survey was undertaken on foot and via off-road vehicle. Information obtained from the client was also studied and included in this document.

5.2 Documentation

All sites, objects features and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Coordinates 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.

5.3 Management principles

The management principles used in this management plan is in accordance by those established by Van Vollenhoven (1998 & 2000). These principles include prescriptions for the content of management plans and are in line with the National Heritage Resources Act.

5.4 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 ENVIRONMENT

The area that was surveyed is situated approximately 10 km to the east of the town of Dundee in the KwaZulu-Natal Province. It comprises portions of six farms namely the remaining extent of Corby Rock 11509, portions 12, 14, 15and the remainder of portions 3 and 4 of the farm Hazeldene 12649, the remainder and portion 1 of the farm Eastkeal 5138, portion 8 of the farm Winkle 5054, and the farms Lot W 8610 and The Terrace 3707 (Figure 1-2). The area to be mined, however is much smaller than that of the entire mining boundary (Figure 3). The mining will be done via underground mining method.

The environment of the area is mostly disturbed by previous mining activities and agriculture. The latter includes maize farming. Although a large area is now used for grazing, it used to be agricultural fields. Indications of extensive mining activities were found throughout the area, but concentrating on the lower and middle slopes of the Malonjeni Mountain and on both sides thereof. Natural vegetation is found on the higher slopes of the mountain although certain areas here are also used for grazing. The vegetation cover varies from reasonably

short grass on top of the mountain to very dense bushes and trees against the slopes. On the plains the grass cover is quite long. Archaeological visibility therefore was reasonably difficult (Figure 4-5).

The natural topography in steep as the Malonjeni Mountain dominates the surveyed area. It is found in the center and to the north-east of the study area. A few dry river beds are found throughout the area and erosion is imminent in the former mining areas.

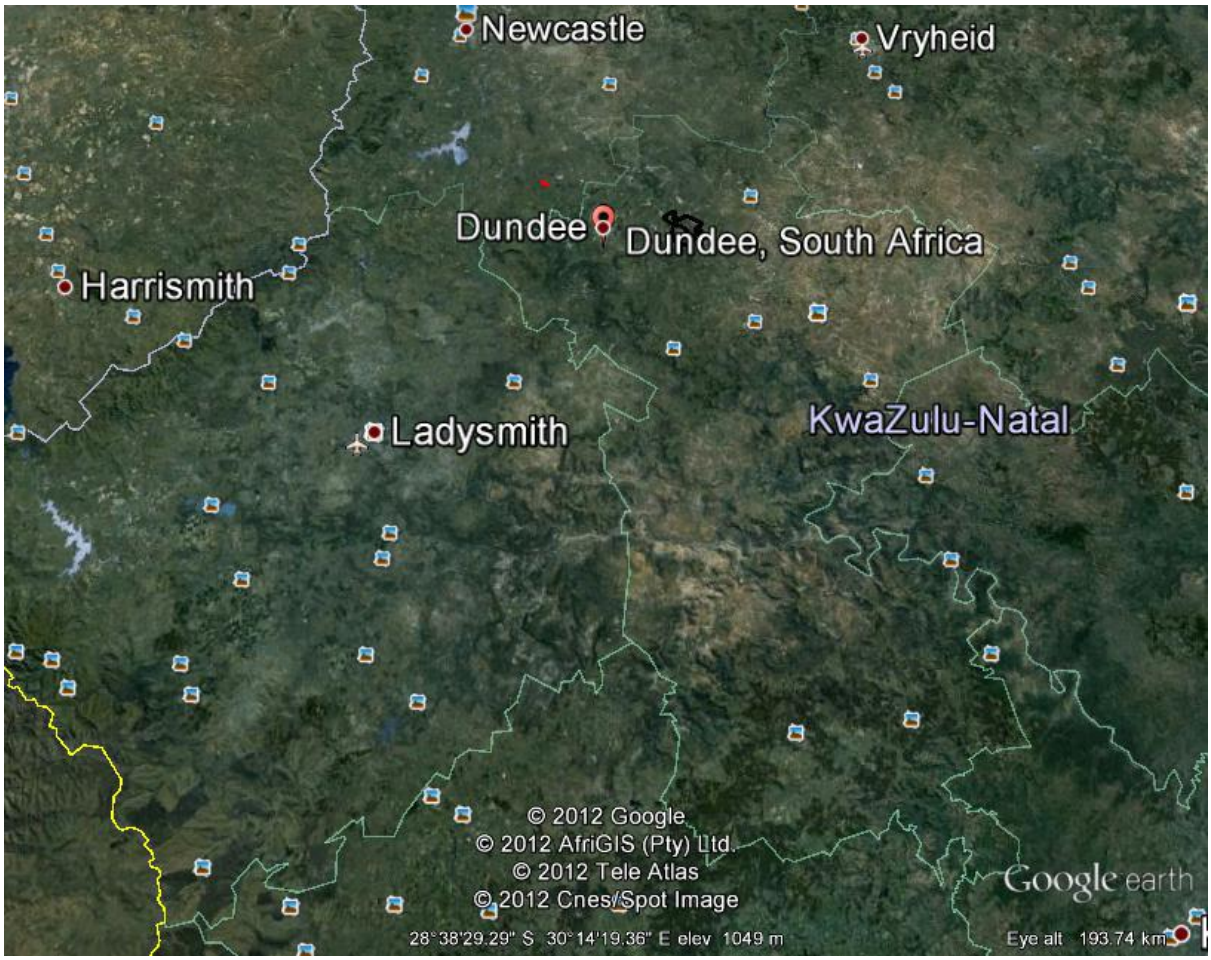

Figure 1 Location of the town of Dundee in the KwaZulu-Natal Province.

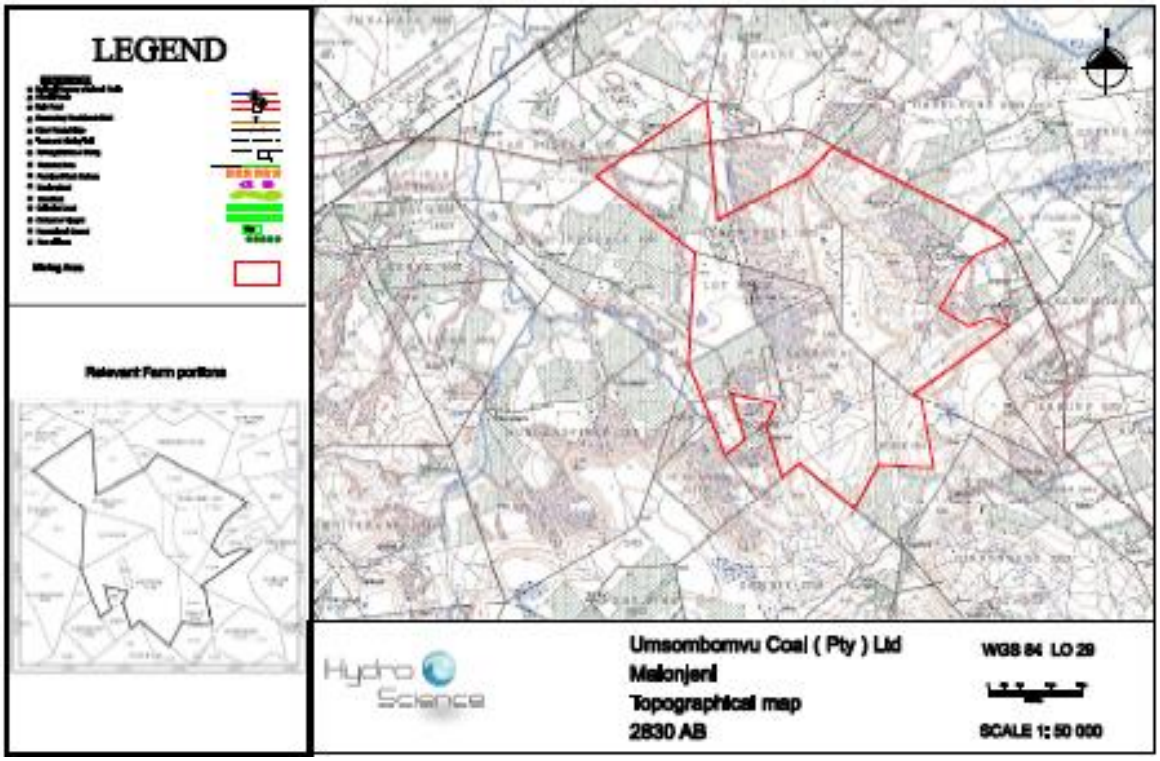

Figure 2 Topographic map indicating the surveyed area.

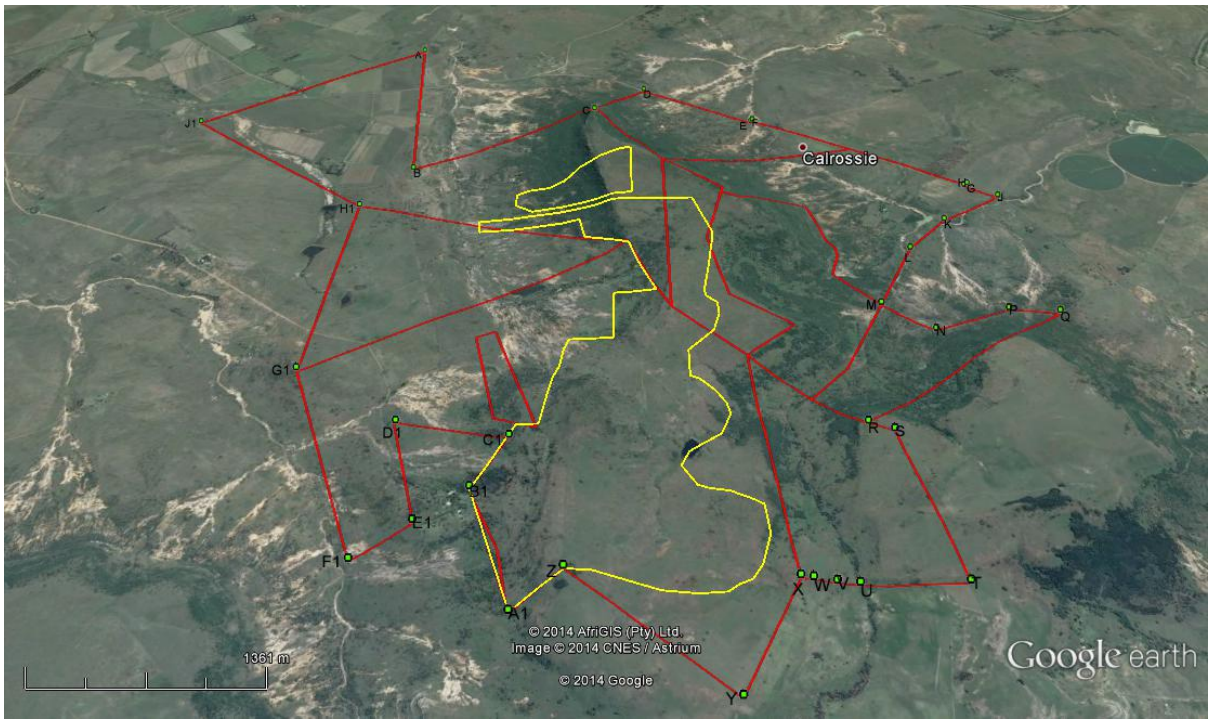

Figure 3 Google image indicating the mine boundary (red) as well as the area to be impacted on by the underground mining activities (yellow).

Figure 4 General view of the surveyed area with Malonjeni in the background.

Figure 5 Indications of old mining disturbances in the surveyed area.

7. HISTORICAL CONTEXT

During the survey thirty sites of cultural heritage significance was located in the mining area. 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. This however definitely indicates a lack of research in the area. A few sites including different Stone Age sites are known. Archaetnos have also found such sites in the vicinity of Newcastle and Dannhauser, mostly dating to the Middle Stone Age, during previous surveys (www.archaetnos.co.za).

The environment definitely is suitable for Stone Age people. There is ample water and grazing for the wild life they would have hunted. Although no caves or rock shelters were identified, there would be enough shelter. Materials to use for the manufacture of stone tools are also found in abundance. In fact, some very weathered Middle Stone Age tools were identified. These were however found without context as it was washed down the erosion dongas from higher uphill.

It is therefore very likely that Stone Age people did utilize and settled in the area. No such sites were however identified during the survey. The dense vegetation cover may be a contributing factor to this.

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.

Both Early and Late Iron Age sites are known from the Kwazulu-Natal (Zululand) area. These are associated with the predecessors of the current Zulu people in the area. During the Late Iron Age (LIA), people stayed in extensive stonewalled settlements and some of these were identified during the current survey.

Iron Age people therefore definitely settled in the study area. It therefore is no surprise that such sites were identified during the survey.

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.

After 1800 the small tribes in Zululand were unified by Chaka (Bergh & Bergh 1984: 14). During the Difaqane (1820's – 1830's) the Ndebele of Mzilikazi migrated from the north-eastern parts of Kwazulu-Natal to the north and most likely passed close to the study area. On this journey they conquered other groups and caused wide-spread chaos (Bergh 1999: 11).

Travelers and missionaries also came to the area. By 1824 people like FG Farewell, JS King, Henry Fynn, John Cane, Henry Ogle, Alexander Biggar, WH Davis, and Thomas Halstead have settled in Port Natal. It was however only during the 1830's when the Voortrekkers moved in that white people started colonizing the area to a large extent (Venter 1985: 25-27). This led to an era of conflict ending with the Battle of Blood River (Ncome) where the Voortrekkers ended the reign of Dingane in the area (Venter 1985: 49-52). This battlefield is found approximately 40 km from Dundee.

During the Anglo-Zulu War and the Anglo-Boer War (1899-1902) many battles were also fought in the vicinity of the study area. This includes Isandlwana and Talana (or Dundee), the latter on 20 October 1899 (Bergh 1999: 51; Pretorius 1985: 14). The British also built some forts around the town of Dundee (Pretorius 1985: 12).

Signs of earlier mining activities were found during the survey, but these are not necessarily of any heritage value. Historical sites found during the survey include farm buildings, stone walling and graves.

8. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY

8.1 Site 1

This is a low packed stone circle (Figure 6). It probably dates to the Late Iron Age/ Historical Era.

GPS: 28°10.367'S
30°22.425'E

Figure 6 Site no.1 – a very vague low stone circular structure.

Management guidelines:

1. The site is regarded as having a **low** cultural significance. It is not very unique and not much thereof is left. It therefore is of a general significance and is given a rating of Grade C (IVC).
2. The site falls outside of the area of impact. It has sufficiently been recorded and may therefore be demolished.
3. However, since there are no impact on the site, it should rather be left as it is.

8.2 Site 2

This is the remains of three rectangular stone buildings (Figure 7). It most likely are associated with the earlier mining activities in the area as it was found in close proximity thereto.

GPS: 28°10.699'S
30°23.424'E

Figure 7 Part of the stone walled structures at site no. 2.

Management guidelines:

1. The site is regarded as having a **low** cultural significance. It is not very unique and in a bad state of repair. It therefore is of a general significance and is given a rating of Grade C (IVC).
2. The site falls outside of the area of impact. It has sufficiently been recorded and may therefore be demolished.
3. However, since there are no impact on the site, it should rather be left as it is.

8.3 Site 3

Site 3 is the remains of a livestock enclosure (cattle kraal). It has a rectangular form and therefore is most likely associated with the earlier farming activities of white farmers in the area (Figure 8).

GPS: 28°10.671’S
30°23.465’E

Figure 8 Remains of historical cattle kraal.

Management guidelines:

1. The site is regarded as having a **low** cultural significance. It is not very unique and in a bad state of repair. It therefore is of a general significance and is given a rating of Grade C (IVC).
2. The site falls outside of the area of impact. It has sufficiently been recorded and may therefore be demolished.
3. However, since there are no impact on the site, it should rather be left as it is.

8.4 Site 4

This is typical Late Iron Age stone walling. It consist of a single circular unit and the walls still are approximately 60 cm high (Figure 9).

GPS: 28°10.448’S
30°24.072’E

Figure 9 Late Iron Age stone walling at site no. 4.

Management guidelines:

1. The site is regarded as having a **low** cultural significance It is not very unique and there were better examples found during the survey. It therefore is of a general significance and is given a rating of Grade C (IVC).
2. The site falls inside of the area of impact. However, it has sufficiently been recorded and may therefore be demolished should the need therefore arise.
3. Since it will be underground mining, no impact is foreseen and therefore it should just be left as it is.

8.5 Site 5

This is another typical Late Iron Age stone walling. It consists of a semi-circular structure linked to another circular one. The walls still are approximately 40 cm high (Figure 10). Circular patches of sand may even indicate the presence of other structures, such as huts.

GPS: 28°09.908'S
30°24.299'E

Management guidelines:

1. The site is regarded as having a **medium** cultural significance It is not very unique and there were better examples found during the survey. It therefore is of a general significance and is given a rating of Grade B (IVB.

2. The site falls inside of the area of impact. It has to be recorded before it may be demolished, should the need for demolition arise.
3. However, since the mining will be underground, the site should just be left as it is.

Figure 10 Late Iron Age stone walling at site no. 5.

8.5 Site 6

This is another typical Late Iron Age stone walling. It consists of three circular structures which are linked with short stone walls (Figure 11). It most likely represents livestock enclosures.

GPS: 28°10.591'S
30°24.137'E

Management guidelines:

1. The site is regarded as having a **medium** cultural significance It is not very unique and there were better examples found during the survey. It therefore is of a general significance and is given a rating of Grade B (IVB.
2. The site falls inside of the area of impact. It has to be recorded before it may be demolished, should the need for demolition arise.
3. However, since the mining will be underground, the site should just be left as it is.

Figure 11 Late Iron Age stone walling at site no. 6.

8.7 Site 7

This site consists of another typical Late Iron Age stone walling. It contains two circular structures which are linked to one another. In one section the walls still are approximately 80 cm high (Figure 12).

GPS: 28°10.857'S
30°24.157'E

Management guidelines:

1. The site is regarded as having a **medium** cultural significance It is not very unique and there were better examples found during the survey. It therefore is of a general significance and is given a rating of Grade B (IVB.
2. The site falls inside of the area of impact. It has to be recorded before it may be demolished, should the need for demolition arise.
3. However, since the mining will be underground, the site should just be left as it is.

Figure 12 Late Iron Age stone walling at site no. 7.

8.8 Site 8

This is consists of scalloped stone walling, typical from the Late Iron Age. It contains a kraal and at least three circular structures as well as a semi-circle a few meters away (Figure 13).

GPS: 28°11.284'S
30°23.719'E

Management guidelines:

1. The site is regarded as having a high cultural significance It is one of the better examples found in the surveyed area. It therefore is of a local significance and is given a rating of Grade IIIB.
2. The site falls inside of the area of impact. It has to be mitigated by mapping after which it may be demolished should the need for the latter arise.
3. However, since the mining will be underground, the site should just be left as it is.

Figure 13 Late Iron Age stone walling at site no. 8.

8.9 Site 9

This is another typical Late Iron Age stone walling. It consists of two circular structures linked to one another (Figure 14).

GPS: 28°11.221'S
30°23.844'E

Management guidelines:

1. The site is regarded as having a **medium** cultural significance It is not very unique and there were better examples found during the survey. It therefore is of a general significance and is given a rating of Grade B (IVB.
2. The site falls inside of the area of impact. It has to be recorded before it may be demolished, should the need for demolition arise.
3. However, since the mining will be underground, the site should just be left as it is.

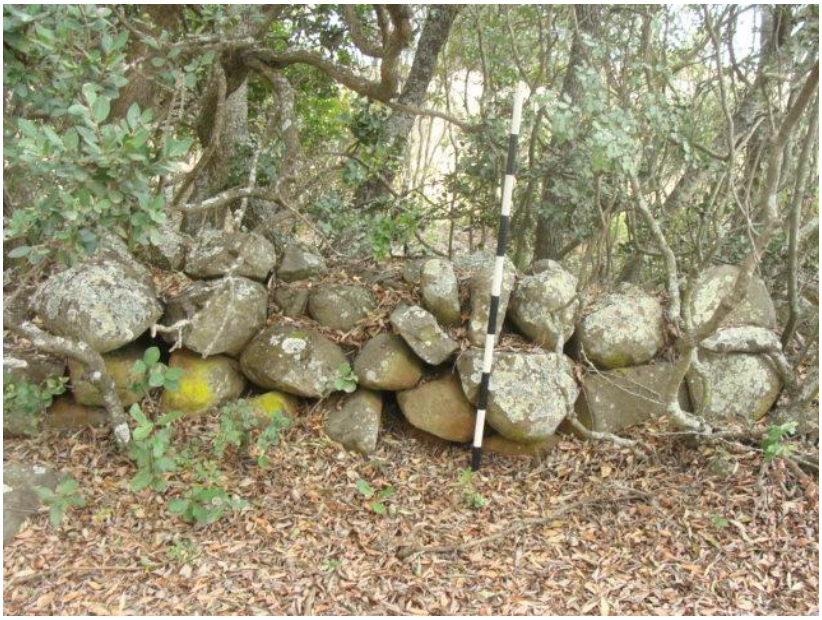

Figure 14 Late Iron Age stone walling at site no. 9.

8.10 Site 10

This is site seems to be larger than the others. It consists of various stone walled circles, some linked to each other, but others not (Figure 15). It is the best example of these types of sites found during the survey.

GPS: 28°11.165'S
30°23.863'E

Management guidelines:

1. The site is regarded as having a **high** cultural significance. It is perhaps the best example of sites found in the area. It therefore is of a local significance and is given a rating of Grade IIIA.
2. The site falls inside of the area of impact. It should be included in the heritage register and may not be demolished.
3. However, since the mining will be underground, no direct impact is foreseen. It would nevertheless be necessary to mitigate possible secondary impact by placing a buffer zone of 50 m around the site wherein no activities may take place.
4. The site should be fenced in.
5. Although not imperative, the mine could consider making information on the site available to the community. This may be done via an information plaque on site or at the offices.
6. Archaeological excavation is not a given, but would assist in providing accurate information and perhaps even artefacts to be used in a display.
7. The mine could use this as an opportunity for outreach and social responsibility.

8. Access to the site may be allowed, but it would be better if this only happens under supervision.
9. A detailed management plan for the site should be drafted and approved by AMAFA.

Figure 15 Late Iron Age stone walling at site no. 10.

8.11 Site 11

This is a historical farm yard on the farm Corby Rock. It consists of various buildings including a house built in 1894, one built in 1921, a wagon house, stables etc. (Figure 16-18). Some of these have been changed in order to serve other purposes, but the original fabric can still be determined.

GPS: 28°09.135'S
30°22.264'E

Figure 16 The 1921 house at site no. 11.

Figure 17 The wagon house at site no. 11 has been changed into a guest cottage.

Figure 18 The 1894 house at site no. 11.

Management guidelines:

1. The site is regarded as having a **high** cultural significance. It is of a local significance and is given a rating of Grade IIIA.
2. The site falls outside of the area of impact. It may not be mitigated and should be included in the heritage register.
3. It would therefore be necessary to place a buffer zone of 50 m around the site wherein no mining or other activities may take place.
4. The site should be fenced in.
5. Although not imperative, the mine could consider making information on the site available to the community. This may be done via an information plaque on site or at the offices. This farm yard may also serve this purpose.
6. Further documentation is not a given, but would assist in providing accurate information.
7. The mine could use this as an opportunity for outreach and social responsibility.
8. Access to the site may be allowed, but it would be better if this only happens under supervision.
9. A detailed management plan for the site should be drafted and approved by AMAFA.

8.12 Site 12

This is a grave yard associated with farm workers on the farm Corby Rock. There are at least 90 graves on site. They mostly have stone dressing, but a few also have cement dressings.

Most of the graves have no headstones. Others have either stone headstones without any inscription or cement or granite headstones (Figure 19).

Only two dates of death were identified being 1931 and 1938. The others are therefore unknown. Surnames identified include Mkhize, Magwaza and Madondo.

GPS: 28°09.051'S
30°22.584'E

Figure 19 Graves at site no. 12.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The two graves with dates are both older than 60 years and are therefore regarded as being heritage graves. Those without dates are also seen as heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.13 Site 13

This is a historical farm yard on the farm Hazeldene. It consists of various sandstone buildings including a house most likely built during the 1890's (Figure 20). Some of these have been changed in order to serve other purposes, but the original fabric can still be determined.

GPS: 28°09.498'S
30°25.291'E

Figure 20 The house at site no. 13.

Management guidelines:

1. The site is regarded as having a **medium** cultural significance. It is not in such a good condition as the previous one. It therefore is of a general significance and is given a rating of Grade B (IVB.
2. The site falls outside of the area of impact. It may be demolished, but has to be recorded first.
3. However, since there will be no impact on it, it can be left as it is.

8.14 Site 14

This is a grave yard possibly associated with the original white farmers in the area. There are at least 19 graves on site. They all have stone dressing. Only two have cement headstones,

but nothing is legible thereon (Figure 21). Therefore no dates or surnames could be identified.

GPS: 28°09.488'S
30°25.291'E

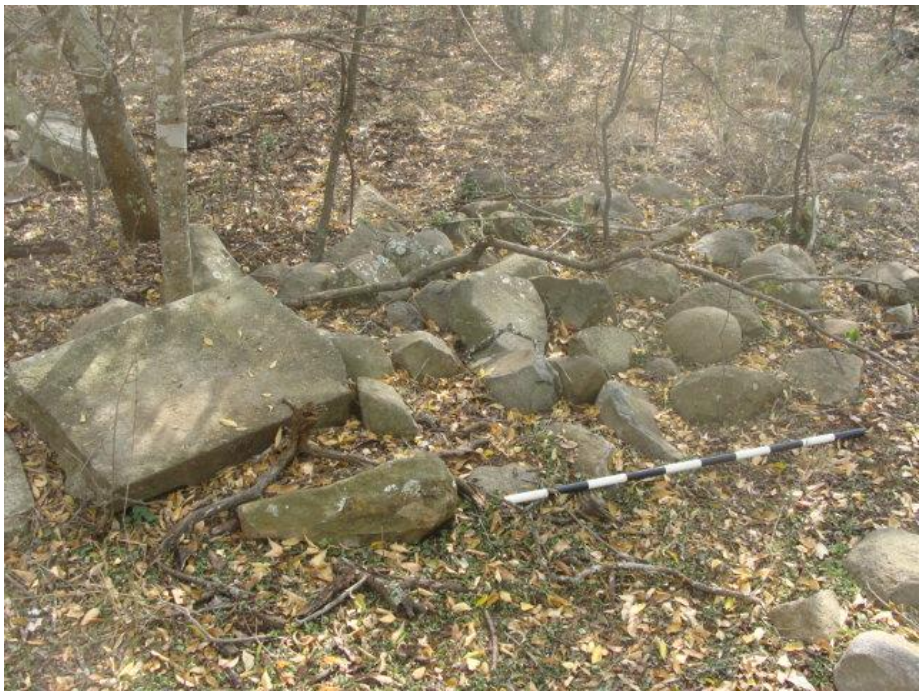

Figure 21 Graves at site no. 14.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. All the graves are unknown (date of death) and are therefore regarded as being heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.15 Site 15

This is a grave yard possibly associated with farm workers. There are at least 3 graves on site. Two of them have stone dressing and one a granite dressing and headstone (Figure 22).

Only one date could be determined being 1959. The only surname identified is Mthembu.

GPS: 28°09.601'S
30°25.177'E

Figure 22 Graves at site no. 15.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The graves without dates are also seen as heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.16 Site 16

This is a single grave reasonably close to the previous site. It is a small grave and therefore possible belongs to a child. It is stone dressed (Figure 23). There are no dates or surname indicated.

GPS: 28°09.582'S
30°25.188'E

Figure 23 The grave at site no. 16.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The grave has no date of death indicated and are therefore regarded as being a heritage grave. The grave is of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.17 Site 17

This is a grave yard and associated historical remains of houses. There are at least 12 graves on site. One has a cement headstone and all the graves have stone dressing. No dates or surnames could be identified (Figure 24).

GPS: 28°09.477'S
30°25.086'E

Figure 24 One of the graves at site no. 17.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The graves without dates are regarded as being heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.18 Site 18

This is a single grave found on a pillar left during previous mining activities on site (Figure 25). It has a stone dressing. No date or surname could be identified.

GPS: 28°09.560'S
30°25.112'E

Figure 25 The grave on a pillar at site no. 18.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The grave has no date indicated and are therefore seen as a heritage graves. The grave is of local significance and is therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. However, due to the current state thereof (being on a pillar that may collapse at any time), the option of fencing it in and writing a management plan for the preservation thereof, is not recommended.
3. This grave will have to be exhumed and the body it contains reburied. 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.

8.19 Site 19

This is a grave yard consisting of at least 5 graves. They all have stone dressing and none have headstones (Figure 26). Therefore no dates or surnames could be identified.

GPS: 28°09.612'S
30°25.110'E

Figure 26 One of the graves at site no. 19.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The graves without dates are regarded as being heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.20 Site 20

This is the foundations of a rectangular stone house with four graves associated with it. They all have stone dressing and no headstones (Figure 27). Therefore no dates or surnames could be identified.

GPS: 28°09.653'S
30°25.087'E

Figure 27 Graves at site no. 20.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The graves without dates are regarded as being heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.21 Site 21

This is a site containing at least 2 graves. Both are stone packed and have no legible information (Figure 28). Therefore no dates or surnames could be identified.

GPS: 28°09.712'S
30°25.062'E

Figure 28 One of the graves at site no. 21.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The graves without dates are regarded as being heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.22 Site 22

This is a long terrace wall and may indicate some kind of terracing for earlier agricultural purposes. It is made from stone (Figure 29).

GPS: 28°09.709'S
30°25.097'E

Figure 29 Terrace wall numbered site no. 22.

Management guidelines:

1. The site is regarded as having a **low** cultural significance. It is not very unique. It therefore is of a general significance and is given a rating of Grade C (IVC).
2. The site falls outside of the area of impact. It has sufficiently been recorded and may therefore be demolished.
3. However, since there are no impact on the site, it should rather be left as it is.

8.23 Site 23

This is a site containing at least 3 graves as well as some stone walled remains of houses. The graves are stone packed and have no legible information (Figure 30). Therefore no dates or surnames could be identified.

GPS: 28°09.727'S
30°25.107'E

Figure 30 Graves at site no. 23.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The graves without dates are regarded as being heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.24 Site 24

This is a site containing at least 4 graves. They are all stone packed and have no legible information. One has a metal cross marking it, but no information thereon (Figure 31). Therefore no dates or surnames could be identified.

GPS: 28°09.728’S
30°25.135’E

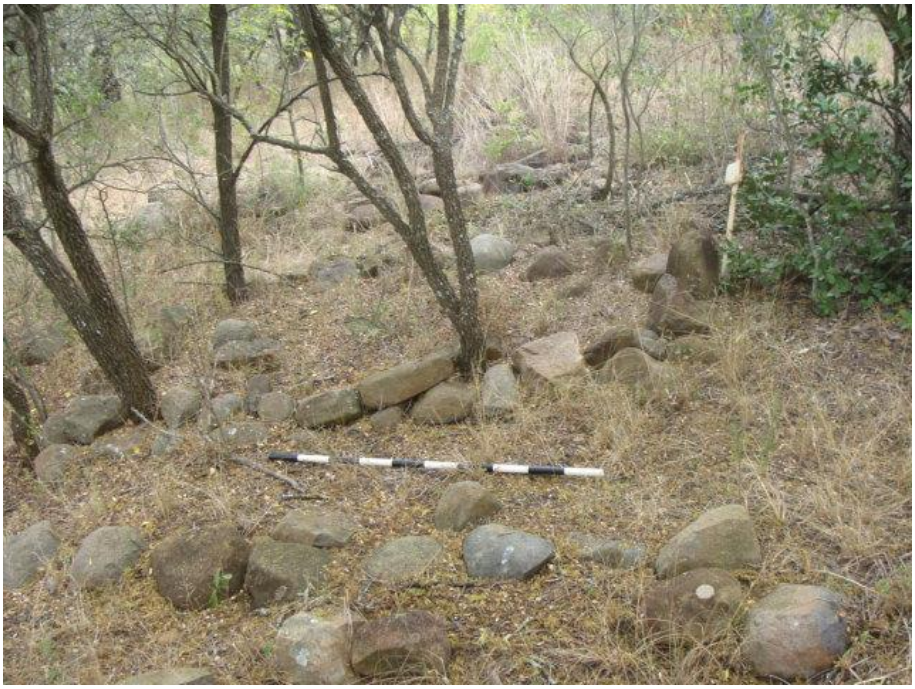

Figure 31 The graves at site no. 24.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The graves without dates are regarded as being heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.25 Site 25

This is a kraal area with low stone walling and at least 6 graves associated therewith. The graves are all stone packed and have no legible information (Figure 32). Therefore no dates or surnames could be identified.

GPS: 28°09.781'S
30°25.179'E

Figure 32 The graves at site no. 25.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. The graves without dates are regarded as being heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.33 Site 26

This is the remains of a house built from stone. It even has a flight of stairs in the front. A lower grinding stone was also identified (Figure 33-34). It most likely is older than 60 years, but is not in a good condition.

GPS: 28°09.768'S
30°25.127'E

Figure 33 Stairs and remains of wall at site no. 26.

Figure 34 Lower grinder found at site no. 26.

Management guidelines:

1. The site is regarded as having a **medium** cultural significance It is not very unique and there were better examples found during the survey. It therefore is of a general significance and is given a rating of Grade B (IVB.
2. The site falls outside of the area of impact. It has to be recorded before it may be demolished.
3. However, since it will not be impacted on, it may just be left as it is.

8.27 Site 27

This is a site containing one grave. It is stone packed and has no legible information (Figure 35). Therefore no date or surname could be identified.

GPS: 28°09.711'S
30°25.237'E

Figure 35 The grave at site no. 27.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. This grave is without a date and is therefore regarded as being heritage graves. The grave is of local significance and is therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.

3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.28 Site 28

This is another single grave. Again it is stone packed with no legible information (Figure 36). Therefore no date or surname could be identified.

GPS: 28°09.764'S
30°25.257'E

Figure 36 The grave at site no. 28.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. This grave is without a date and is therefore regarded as being heritage graves. The grave is of local significance and is therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.

4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.29 Site 29

This is another site with two graves. Both are stone packed and have no legible information (Figure 37). Therefore no dates or surnames could be identified.

GPS: 28°09.740'S
30°25.266'E

Figure 37 The graves at site no. 29.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. These graves are without a date and are therefore regarded as being heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.

5. Descendants of those buried here, if identified, should be allowed free access to the site.

8.30 Site 30

This is a site with a low rectangular wall and containing one grave. Like the others it is stone packed and has no legible information (Figure 38). Therefore no date or surname could be identified.

GPS: 28°09.640'S
30°25.306'E

Figure 38 The grave at site no. 30.

Management guidelines:

1. Graves always are regarded as having a **high** cultural significance. This grave is without a date and is therefore regarded as being heritage graves. The graves are of local significance and are therefore given a rating of Grade IIIB.
2. The site is outside of the area of impact. Although it may be mitigated, it is unnecessary to exhume and relocate the graves.
3. It has to be fenced it in and a detailed management plan for the preservation thereof should be written.
4. A buffer zone of 50 m should be implemented around the site wherein no mining or other activities may take place.
5. Descendants of those buried here, if identified, should be allowed free access to the site.

9. CONCLUSION & RECOMMENDATIONS

It is concluded that the assessment of the area was conducted successfully. Thirty sites of cultural significance were identified (Figure 39-41).

Farm workers and farmers talked to in the area indicated that they may even be aware of more grave sites on top of the mountain, but they were unsure of exactly where these are located. It therefore does seem as if there probably are more sites than what were found.

This is an important aspect that needs to be considered during any future activities in the mining area. Any possible identification of additional cultural heritage resources should be dealt with in accordance with the recommendations set out below.

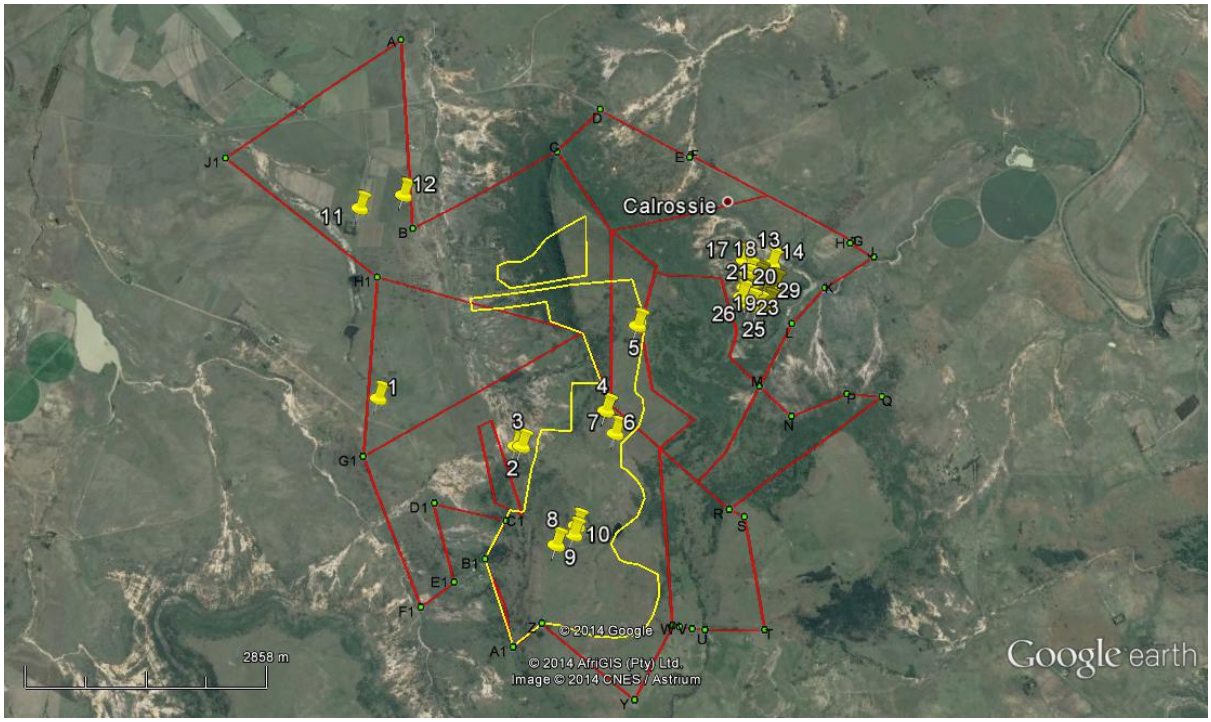

Figure 39 Google image indicating the sites identified during the survey as well as the area of possible impact (yellow).

Figure 40 Closer view of the area on Hazeldene where an abundance of sites (especially graves) were identified. Site 18 is of particular concern.

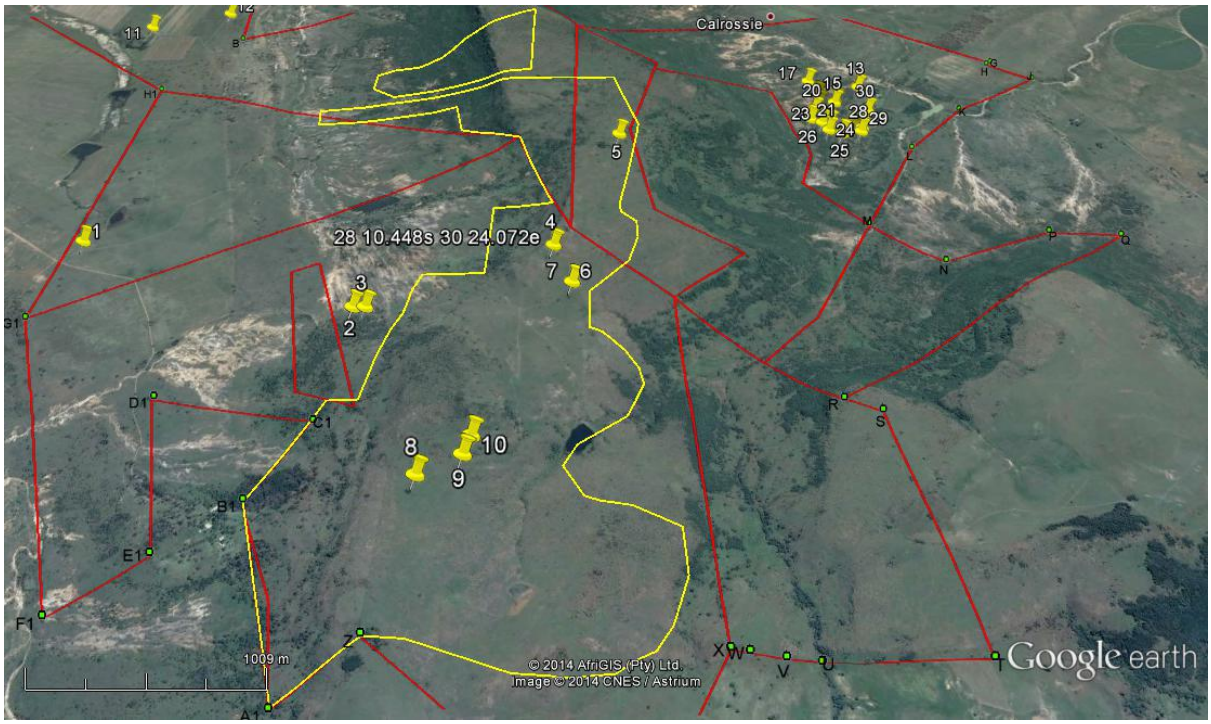

Figure 41 Closer view of the mining area indicating the sites within the area of possible impact. These are numbers 4-10.

The final recommendations are as follows:

1. This document should be rewritten at least once every five years or every time a new development is planned (whichever comes first).

2. This management plan should be consulted continuously and especially when any new developments are planned.

3. Most importantly, should any developments be done in future, the excavations around these should be monitored for the possible existence of archaeological material. If identified, an archaeologist should immediately be contacted to assess the matter.

4. It should be remembered that due to the 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 sites and artifacts are identified and uncovered, a qualified archaeologist be called in to investigate.

5. Any sites, features or artefacts identified as mentioned above (recommendation 3 and 4) should be included in this management plan.

6. The management guidelines given in this management plan (at the above discussion of each of the individual sites) must be implemented in conjunction with these recommendations. This will have to consist of a short, medium and long term strategy for the preservation, conservation and utilization of the cultural heritage resources. This strategy is already imbedded in this management plan.

7. The necessary measures should be put in place to stop any possible degradation of cultural resources on the reserve (see management guidelines at each individual site).

8. The social value of the cultural heritage resources at the mine should not be under estimated. The mine could easily use this for social responsibility and community liaison issues.

9. Visits to the different sites should be monitored in order to prevent any damage thereto.

10. Information educating staff members (and perhaps even visitors) with regards to the National Heritage Resources Act and indicating that it is an offence to damage historical resources should be available and should become part of the induction process at the mine.

11. The staff at the mine as well as others involved in the management thereof (including new appointees) should be educated with regards to all aspect mentioned in this management plan. This will assist in the monitoring of sites, but will not on its own solve this problem.

12. The fencing of certain resources and keeping the vegetation in control (see management guidelines) is a very important first step that should be implemented urgently.

13. Partnerships should be formed with concerned parties order to get these people involved in the preservation and conservation of the cultural heritage at the mine.

14. This document should be used to assist in planning, and care should be taken that sites are not demolished without reason. This basically means that all sites should be left as it is, should there not be any reason to intervene.

15. It should be noted that even if there is no direct impact there usually is a secondary impact. This includes possible blasting damage, dust etc. Therefore mitigation should also be engaged into in the latter case.

16. Sites number 4-10 were identified within the area of impact and will have to dealt with different than others.

17. Site no. 4 is of a low cultural significance and may be demolished if needed. No further mitigation is needed. However, since the mining operations will be underground, the site should be left as it is.

18. The following sites may also be demolished if needed, but has to be recorded first: 5, 6, 7 and 9. However, since the mining operations will be underground, the sites should be left as it is.

19. Site no. 8 may be demolished if necessary, but has to be mapped first as it is regarded as having a higher cultural significance than other similar sites. However, since the mining operations will be underground, the site should be left as it is.

20. Site no. 10 is of a high cultural significance. It may not be demolished and will have to be preserved by the mine. Although there will be no direct impact, possible secondary impact is foreseen (e.g. moving of vehicles and people on site). It means the fencing of the site and that a heritage management plan should be written by a heritage expert.

21. All the other sites (1-3, 11-30) were identified outside of the area of impact.

22. The following sites are of a low cultural significance and may be demolished should future developments impact thereon: 1, 2, 3 and 22. However, since there is no impact foreseen now, it should be left as it is.

23. Site no. 11 is of a high cultural significance. They may not be demolished and will have to be preserved by the mine. That would include having a heritage management plan written by a heritage expert. Currently there is no impact foreseen, but the site can easily be reused by the mine.

24. The following sites may also be demolished if future developments impact thereon, but has to be recorded first: 13 and 26. For now, it should be left as it is.

25. The grave sites found (site no. 12, 14-17, 19-21, 23-25 and 27-30) are of a high cultural significance. Exhumation is usually the second option, but sometimes it is impossible to prevent. These sites will not be impacted on directly. Due to the possible secondary impact, a heritage expert should write a management plan for each of these sites. It also should be fenced in properly, maintained, managed and preserved. Access to possible descendants should be allowed.

26. Site 18 (grave on pillar) also is of a high cultural significance. However due to the specific circumstances of erosion that endangers the site, the grave will have to be exhumed and the human remains reburied. This has to be done in accordance with the legislation discussed above. For this a detailed social consultation process is needed. An undertaker is always involved and an archaeologist is only needed for unknown graves and those older than 60 years. Certain permits need to be obtained, but the mentioned parties will take care of that. Table 1 indicates a risk assessment for the two options in dealing with graves. In this particular case it may perhaps be reburied at one of the other sites (as near as possible) found.

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.

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Appendix A

Definition of terms:

Artifact:

Cultural object (made by humans).

Buffer Zone:

Means an area surrounding cultural heritage (see def. cultural heritage) which has restrictions placed on its use or where collaborative projects and programs are undertaken to afford additional protection to the site.

Conservation:

In relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance as defined.

Co-management:

Managing in such a way as to take into account the needs and desires of stakeholders, neighbours and partners, and incorporating these into decision making through, amongst others, the promulgation of a local board.

Conservation:

All the processes used to maintain a place or object in order to keep its cultural significance. The process includes preservation, restoration, reconstruction and adaptation.

Contextual Paradigm:

A scientific approach which places importance on the total context as catalyst for cultural change and which specifically studies the symbolic role of the individual and immediate historical context.

Cultural Resource:

Any place or object of cultural significance (see Heritage Resource).

Cultural Resource Management:

The utilization of management techniques to protect and develop cultural resources so that these become long term cultural heritage which of value to the general public (see Heritage Management).

Cultural Significance:

Means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance of a place or object for past, present and future humans.

Feature:

A coincidental find of movable cultural objects (also see Knudson 1978: 20).

Grade/Grading:

The South African heritage resource management system is based on grading, which provides for assigning the appropriate level of management responsibility to a heritage resource.

Grading is a step in the process towards a formal declaration, such as a declaration as a National Heritage Site, Provincial Heritage Site, or in the case of Grade 3 heritage resources the placing of a resource on the Register. It is not an end in itself, but a means of establishing an appropriate level of management in the process of formal protection. Grading may be carried out only by the responsible heritage resources authority or in the case of a Grade 3 heritage resource by the Local Authority. Any person may however make recommendations for grading. These are known as Field Ratings and usually accompany surveys and other reports.

Heritage resource (Cultural):

Any place or object of cultural significance (see Cultural Resource).

Heritage Resources Management Paradigm:

A scientific approach based on the Contextual paradigm, but placing the emphasis on the cultural importance of archaeological (and historical) sites for the community.

Heritage management (Cultural):

The utilization of management techniques to protect and develop cultural resources so that these become long term cultural heritage resources which are of value to the general public (see Cultural Resources Management).

Historic:

Means significant in history, belonging to the past; of what is important or famous in the past.

Historical:

Means belonging to the past, or relating to the study of history.

Iron Age:

In archaeology, the Iron Age is the stage in the development of any people where the use of iron implements as tools and weapons is prominent. The adoption of this new material coincided with other changes in some past societies often including differing agricultural practices, religious beliefs and artistic styles, although this was not always the case.

Maintenance:

Means the continuous protective care of the fabric, contents and setting of a place. It does not involve physical alteration.

Management:

With reference to cultural heritage resources it includes preservation/ conservation, presentation and improvement of a place or object.

In relation to a protected area, includes control, protection, conservation, maintenance and rehabilitation of the protected area with due regard to the use and extraction of biological resources, community based practices and benefit sharing activities in the area in a manner consistent with the Biodiversity Act as defined and required as per the National Environmental Management: Protected Areas Act, No. 57 of 2003.

Object:

Artifact (cultural object) (also see Knudson 1978: 20).

Partnership/s:

Means a co-operative and/or collaborative arrangement/s between the *Reserve* management and a third party that supports the achievement of the *Reserve* objectives.

Preservation:

Refers to protecting and maintaining the fabric of a place in its existing state and retarding deterioration or change, and may include stabilization where necessary. Preservation is appropriate where the existing state of the fabric itself constitutes evidence of specific cultural significance, or where insufficient evidence is available to allow other conservation processes to be carried out.

Protection:

With reference to cultural heritage resources this includes the protection, maintenance, preservation and sustainable utilization of places or objects in order to maintain the cultural significance thereof.

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 (also see Knudson 1978: 20). Also means any area of land, including land covered by water, and including any structures or objects thereon.

Stone Age:

The period encompasses the first widespread use of stone for the manufacture of tools and weapons in human evolution and the spread of humanity from the savannas of East Africa to the rest of the world. It ends with the development of agriculture, the domestication of certain animals and the smelting of copper ore to produce metal. It is termed *pre*historic, since humanity had not yet started writing.

Structure:

A permanent building found in isolation or which forms a site in conjunction with other structures (also see Knudson 1978: 20). Also 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.

Sustainable:

In relation to the use of a biological resource, means the use of such resource in a way and at a rate that would not lead to its long-term decline; would not disrupt the ecological integrity of the ecosystem in which it occurs; and would ensure its continued use to meet the needs and aspirations of present and future generations of people (as per National Environmental Management: Biodiversity Act, No. 10 of 2004).

Appendix B

Definition of 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.
Aestetic 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

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

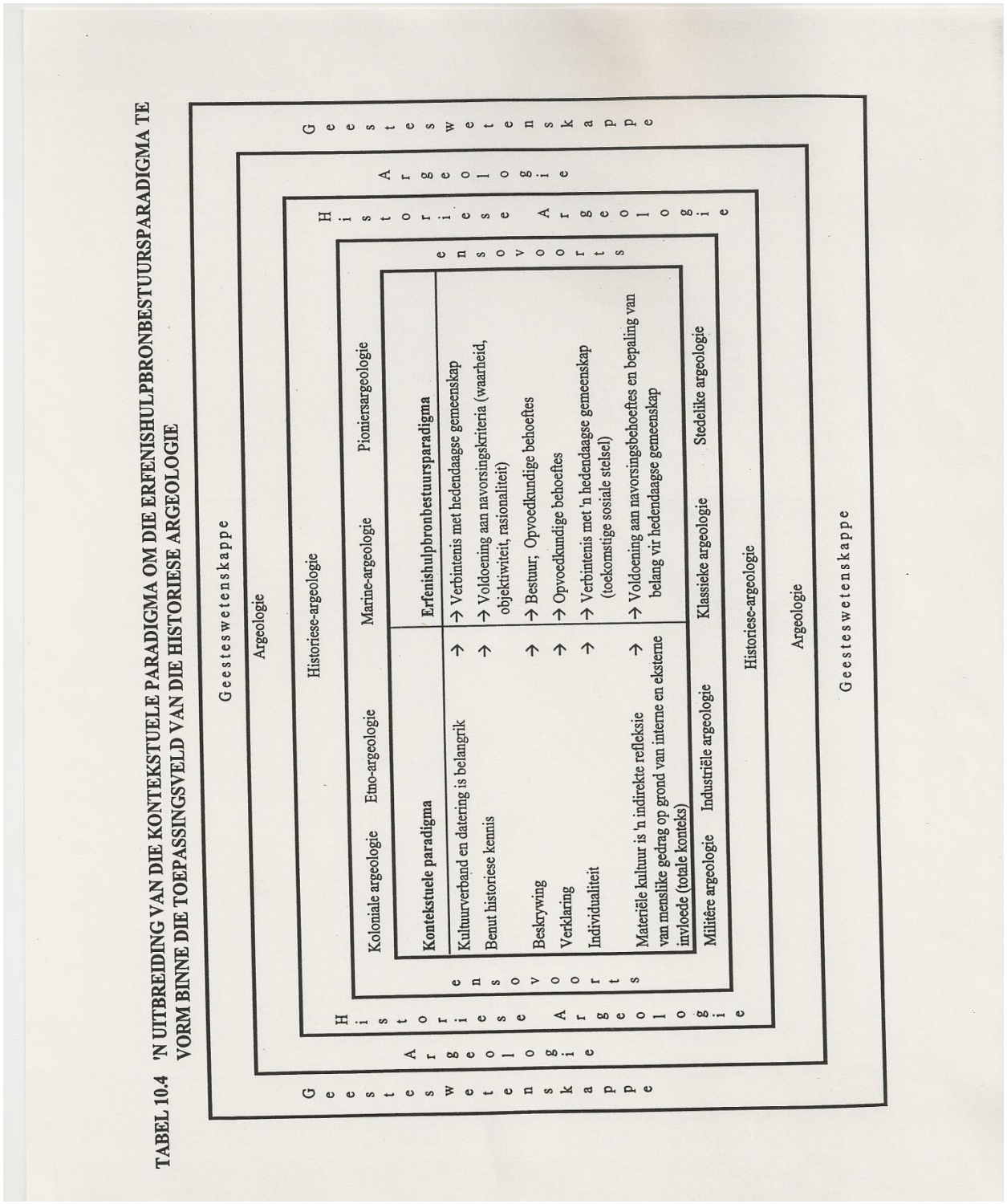
- Grade III — Other heritage resources of local importance and therefore worthy of conservation

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

The Heritage Resources Paradigm (after Van Vollenhoven 2000: 555):



Appendix E

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