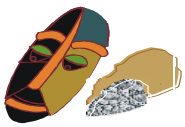

Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

A REPORT ON AN ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED KUYASA PROJECT ON THE FARMS HAVERKLIP 265 IR AND HAVERGLEN 269 IR NEAR DELMAS, MPUMALANGA PROVINCE

For:

CULTMATRIX HERITAGE CONSULTANTS

On behalf of:

Jones & Wagener
Consulting Civil Engineers

REPORT: **AE1037**

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.

SUMMARY

Archaetnos cc was requested by Cultmatrix Heritage Consultants to conduct an archaeological impact assessment (AIA) for the proposed power station and ash disposal site, which forms part of the Kuyasa project. This is situated on the farms Haverklip 265 IR and Haverglen 269 IR, close to Delmas in the Mpumalanga Province.

Two alternative sites had to be surveyed for the power station and one for the ash disposal site. The client indicated the areas where the proposed development is to take place and the survey was confined to this area.

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

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

During the survey one site of archaeological significance was located in the area to be developed. The site (a graveyard) dates to the recent historical past.

The site will be impacted upon by the development, if area 1 is chosen for the erection of the power plant. It would then be necessary to mitigate the site.

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

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1. INTRODUCTION

Archaetnos cc was requested by Cultmatrix Heritage Consultants to conduct an archaeological impact assessment (AIA) for the proposed power station and ash disposal site, which forms part of the Kuyasa project. This is situated on the farms Haverklip 265 IR and Haverglen 269 IR, close to Delmas in the Mpumalanga Province (Figure 1 & 2).

Two alternative sites had to be surveyed for the power station and one for the ash disposal site. The client indicated the areas where the proposed development is to take place and the survey was confined to this area.

Figure 1 Google image indicating the location of the project area.

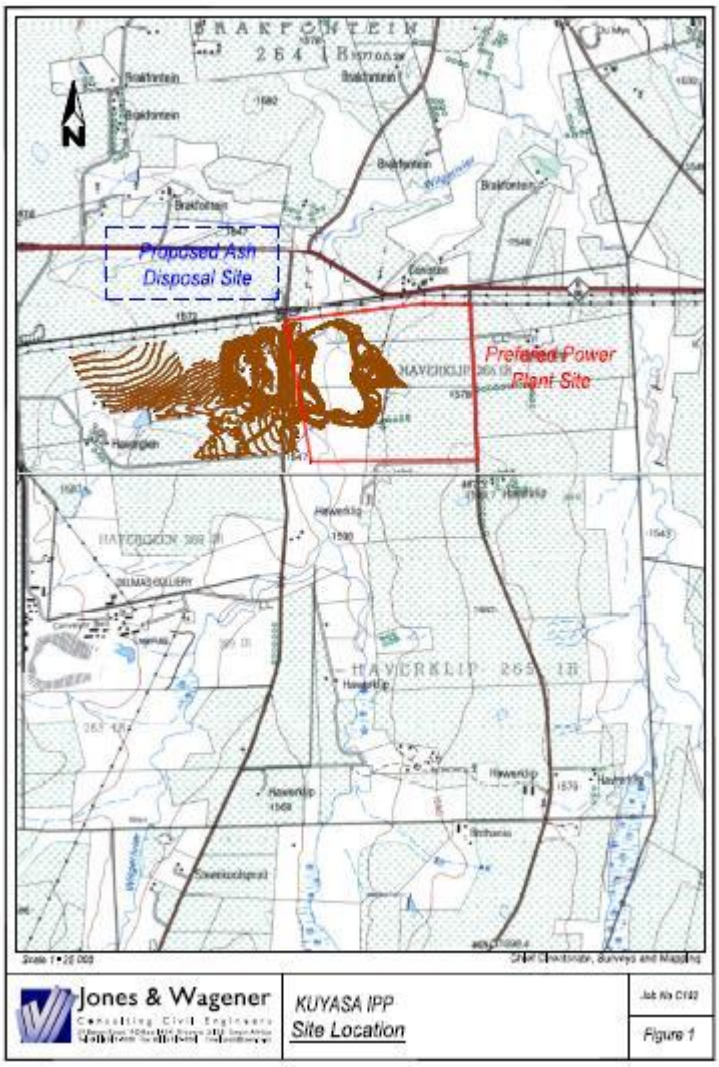

Figure 2 Map indicating the proposed areas for development.

2. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify all objects, sites, occurrences and structures of an archaeological nature located on the property (see Appendix A).

2. Documenting such sites in a report including photographs and indicating them on a map with GPS references.

3. Assess the significance of the archaeological resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).

4. Describe the possible impact of the proposed development on these archaeological remains, according to a standard set of conventions.

5. Propose suitable mitigation measures to minimize possible negative impacts on the archaeological resources.

6. Recommend and describe suitable mitigation measures should there be any sites of significance that might be impacted upon by the proposed development.

7. Review applicable legislative requirements.

3. METHODOLOGY

3.1 Survey of literature

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

3.2 Field survey

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

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

3.3 Documentation

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

4. CONDITIONS AND ASSUMPTIONS

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

1. Cultural Resources (including archaeological resources) are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity. These include all sites, structure and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.

2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, architectural, technological, spiritual, linguistic 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 (see Appendix B).

3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see Appendix C).

4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.

5. All recommendations are made with full cognizance of the relevant legislation.

6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might occur.

7. Although care was taken to give a comprehensive background on the history of the area, it has to be stated that it is impossible to give a complete indication on human activities of the past as sources are not always readily available. The information given in the report should however give a fair reflection of the past.

5. 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).

5.1 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 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 look 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 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.

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.

5.2 The National Environmental Management Act

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

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.

6. DESCRIPTION OF THE AREA

The proposed development area is located to the south-east of the town of Delmas in the Mpumalanga Province. The topography of the surveyed area is very flat, with a slight slope to the south-east where the Steenkoolspruit is draining the area.

The area has been mostly disturbed by past human activities, including previous mining activities and agriculture. The area still contains many maize fields and large dumps left by previous mining (Figure 3-6).

Figure 3 General view of the surveyed area.

Figure 4 Indications of former mining activities in the area.

Figure 5 General view of the surveyed area showing old mining dumps.

Figure 6 General view of the surveyed area showing a maize field.

7. DISCUSSION

During the survey one site of archaeological significance was located in the area to be developed. This report indicates suitable mitigation measures in this regard.

In order to enable the reader to better understand this, 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.

The closest Stone Age occurrence found to the Delmas area is the Late Stone Age site at Fort Troje, close to Cullinan (Bergh 1999: 4). This probably only indicates a lack of research as the area definitely is suitable for human occupation.

During this survey no additional indication of Stone Age activities was found.

7.2 Iron Age

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

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

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

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

Bergh (1999: 7) does indicate that Late Iron Age sites have been identified in the Delmas area, but gives no additional detail. During the Difaquane (1832) the Zulu moved through this area in order to attack the Ndebele (Bergh 1999: 11). This indicates that Iron Age people probably utilized this environment in the past. However, during the survey no such sites were identified.

7.3 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.

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 Louis Tregardt and Hans van Rensburg also moved through here during 1836 (Bergh 1999: 13-14). White farmers only settled in the study area between 1841 and 1850 (Bergh 1999: 15).

A topographical map of 1965 indicates that the Kuyasa mine on the property was not even in existence. Any remains linked to the mine are therefore fairly recent.

The grave site identified during this survey, dates to the Historical Age. It is discussed below.

7.4 Discussion of sites identified during the survey

Only one archaeological site was identified in the surveyed area. It dates to the recent historical past.

Site 1

This is a small family grave yard consisting of only two graves. The graves are fenced by a metal construction (Figure 7 & 8).

GPS: 26°14.602’S
28°51.659’E

Figure 7 Site 1, a small family graveyard.

Figure 8 One of the headstones in the graveyard.

The two graves are the following:

- Dirk Jakobus Gerhardus Stephanus Botha, 13 August 1890 - 25 January 1940
- Wilhelmina Hart Botha (born Browne), 9 February 1900 – 27 April 1966

It is possible that there may be some other graves, but these are not inside of the fence and due to the dense vegetation it is difficult to be certain.

The development will have a direct impact on the site if option 1 is decided on. Graves always are regarded as having a **high** cultural significance. It would therefore be preferred to use option 2 for the power plant.

Should that not be possible the site should be mitigated by exhuming these graves. This should be done by a registered undertaker, after a process of social consultation and advertisements in order to find the descendants of the deceased as they needs to be consulted. Since the one grave is older than 60 years an archaeologists needs to be involved and needs to obtain a permit from the South African Heritage Resources Agency (SAHRA). If any unknown graves are found, these needs to be handled by an archaeologist as well.

8. CONCLUSION AND RECOMMENDATIONS

It is concluded that the AIA in the area has been conducted successfully. One site, a graveyard was found during the survey (Figure 9).

Figure 9 Location of the site found during the survey.

The following is recommended with regards to the mitigation of the site:

- The development will most probably have a direct impact on the graveyard should option 1 be chosen for the power station. As graves are of a high cultural significance, it is recommended that option 2 rather be chosen for the power plant.

- Should that not be possible the site should be mitigated by exhuming these graves. This should be done by a registered undertaker, after a process of social consultation and advertisements in order to find the descendants of the deceased as they needs to be consulted. Since the one grave is older than 60 years an archaeologists needs to be involved and needs to obtain a permit from the South African Heritage Resources Agency (SAHRA). If any unknown graves are found, these needs to be handled by an archaeologist as well.

- It should be noted that other graveyards were identified outside of the area of development. Should these in any way be impacted on, for instance by the development of infrastructure such as roads, these will need to be handled in a similar way as mentioned above.

- The proposed development may continue after implementation of the mentioned recommendations.

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

9. REFERENCES

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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 coincidal find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B

Definition of significance:

Historic value:	Important in the community or pattern of history or has a 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

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