



Archaetnos Culture & Cultural  
Resource Consultants  
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**A REPORT ON A CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE  
PROPOSED EXPLORATION ACTIVITIES AT THE JACOMYNSPAN PROJECT,  
NORTHERN CAPE PROVINCE**

For:

**GCS  
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***GCS Project no.: 12-139***

**REPORT: AE01406V**

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## EXECUTIVE SUMMARY

Archaetnos cc was requested by GCS to conduct a cultural heritage impact assessment for a proposed prospecting application called the Jacomynspan Project. This is close to the ghost town of Putsonderwater, south of Upington in the Northern Cape Province.

The Terms of Reference for the survey were to identify objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property, to study background information on the area to be developed, to assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value and to review applicable legislative requirements.

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

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.

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.

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 case certain patches within the surveyed area were densely vegetated which affected archaeological visibility.

The applicable legislation was also discussed. 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).

According to the National Heritage Resources Act the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography

- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The 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.

Graves and burial grounds receive special protection. In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- c. Bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

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

The National Environmental Management 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.

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

All sites, objects features and structures identified were to be 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.

The evaluation of Heritage sites is done by giving a field rating of each 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.

During a basic heritage assessment survey, twenty-three sites of cultural heritage significance were located in the project area, with another five nearby. This gives a total of twenty-eight. A few stone tools were also found.

The Heritage Impact Assessment focuses on a smaller area, where the actual development will be done. Only one site (site no. 1) will be impacted on directly. All 27 of the others are outside of this area, although three of them (sites no. 2, 11 and 12) are reasonably close to the area of direct impact and two other (sites no. 25 and 26) may be impacted on by the movement of vehicles during the development of the project..

The remainder of the sites is however also indicated in the report as it gives context to the project area. It is also important to note that although some sites were found outside of the project area.

The one site within the project development area (site 1) is of low cultural heritage significance. The field rating thereof is General Protection, Grade C (IVC). This report is seen as ample mitigation and it may therefore be demolished. Since it is older than 60 years, a permit will be required from the Northern Cape Provincial Heritage Resources Agency. However, it may also be reused for instance for offices.

Only site no. 1 (a farm yard) is within the project boundary and will be impacted on directly. It however is of a low cultural significance and may be demolished. For this purpose a permit will be needed from the Provincial Heritage Resources Agency of the Northern Cape. However, since the site is right on the edge of the development it may be possible to rather reuse it, for instance as offices.

Sites number 3, 5, 8, 9, 13, 14, 16, 17, 18, 20, 21, 23 and 24 are farm yards/ buildings which include buildings older than 60 years. These buildings range from farm houses to workers houses, store rooms and wagon houses and other outbuildings. At site number 3 only an outbuilding was worth mentioning. At site 13 and 20 only workers houses were found and at site 21 a well and kraal. All these buildings and structure should rather be preserved than demolished. However none of these sites will be impacted on. The structures should therefore just be left as it is.

Site no. 11 is a farm yard close to the development. Although it may be impacted on indirectly the site is not very important and should therefore only be left as it is.

The possible LSA site (number 4) may be demolished as it does not seem to be a real important site. Again, since there will be no impact it should just be left as it is.

The following sites are ones which contains graves: 2, 6, 7, 8 (which also includes buildings), 10, 12, 15, 19, 22 and 25. As indicated above there usually are two options when dealing with graves. In cases where there will only be a secondary impact, option 1 will be applicable. This entails to leave the graves *in situ*. The site should be fenced in and a management plan should be written for the preservation and maintenance thereof. On none of the sites there will be a direct impact and therefore option 2, the exhumation and relocation of graves, are not recommended.

Option 1 only is applicable to site no. 2 and 12, with a possible impact on site no. 25 due to the movement of vehicles during the development.

The town of Putsonderwater (site number 26) needs to be preserved at all costs. It definitely seems that there will be a secondary impact and perhaps even a direct impact if the mine wants to utilize some of the buildings. A comprehensive phase II heritage study is therefore needed, leading to a phase III management plan for the town. This document can then be used as guide for any possible changes needed to any of the buildings and other structures in the town.

Sites number 27 and 28 are rock engraving sites. For now these should just be left as it is as there will be no impact on these.

All the heritage management plans indicated will have to be approved by SAHRA or the specific heritage office dealing with the matter at hand. SAHRA has specific guidelines for management plans and these will have to be followed.

After implementation of the recommended mitigatory measures, the project may continue. It should be noted however that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Care should therefore be taken when the development 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 GCS to conduct a cultural heritage baseline study for the proposed exploration activities related to the Jacomynspan Project. The project was initially planned on different portions of various farms in the Northern Cape. These are Rooiputs 172, Jacomynspan 176, Hartebeestpan 175 and Rok Optel 261. The final layout however is on the remainder farm Hartebeestpan 175 and the remainder of the farm Jacomynspan 176.

The site is situated approximately 85 km to the south of the town of Upington, 37 km to the east of Kenhardt and 40 km to the south-west of Groblershoop. The ghost town and former station of Putsonderwater, lies just outside and to the north-east of the area (Figure 1-3).

The client indicated the area where the proposed development is to take place. The field survey was confined to the entire initial area, which has a size of more than 10 000Ha.

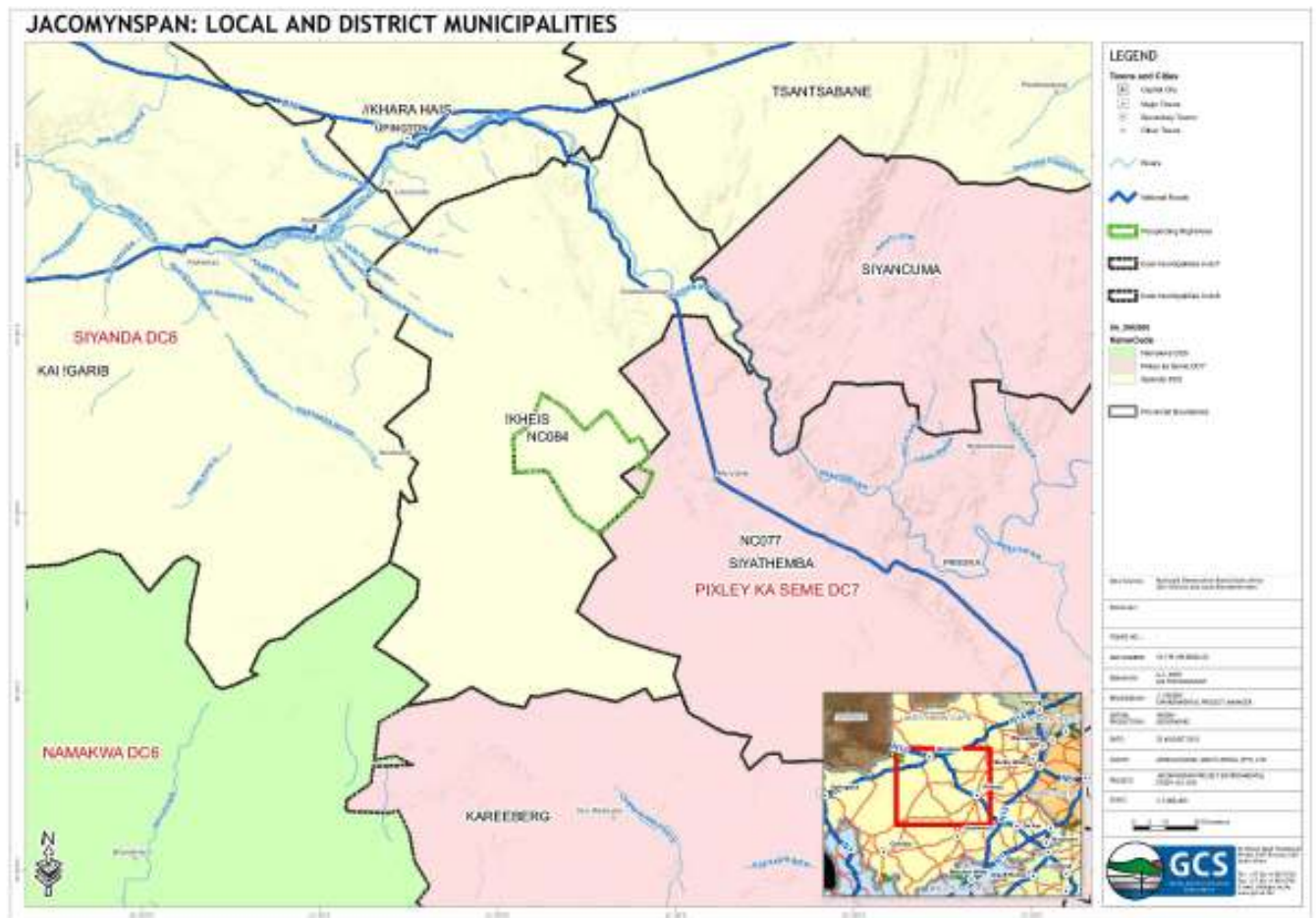
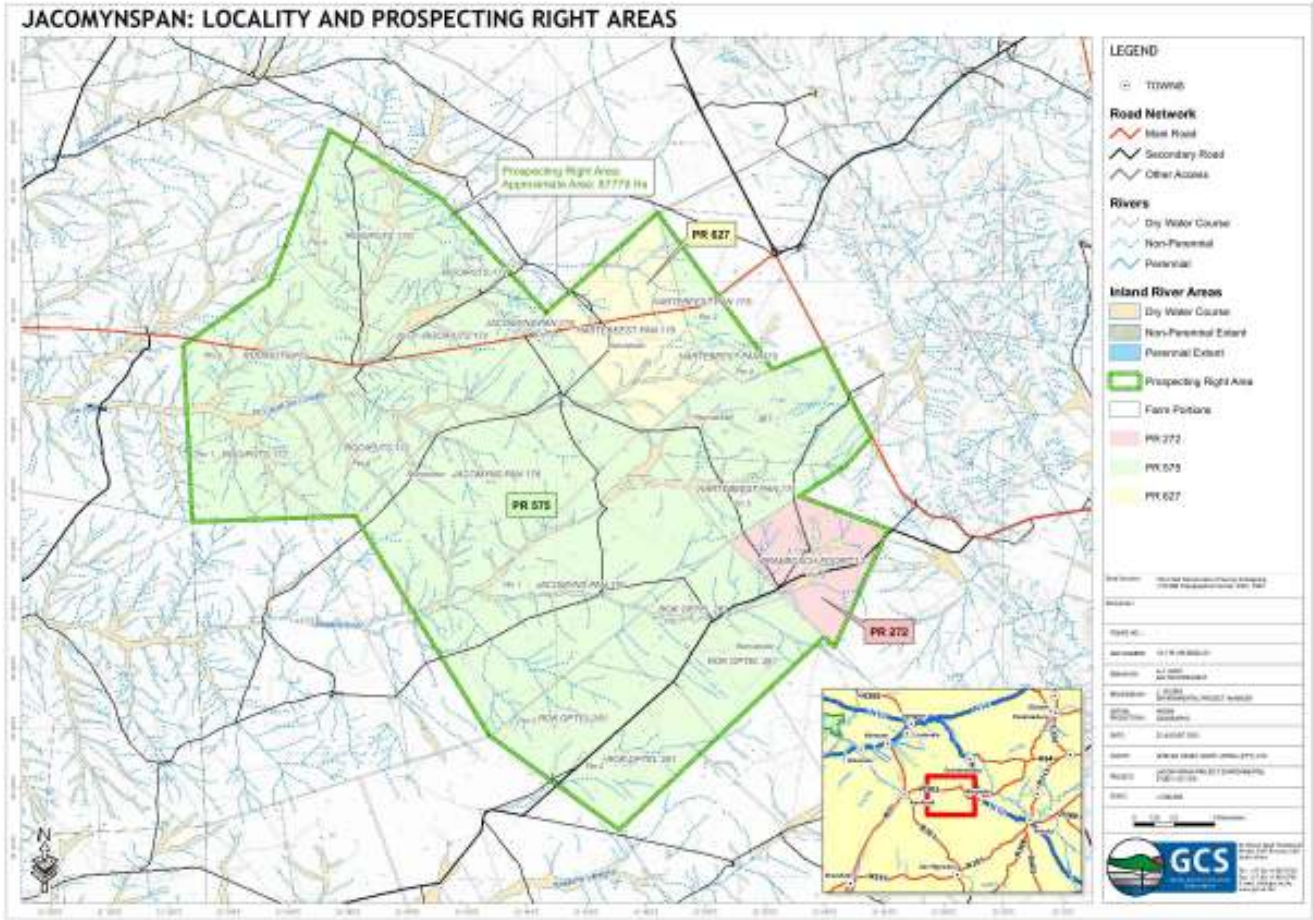
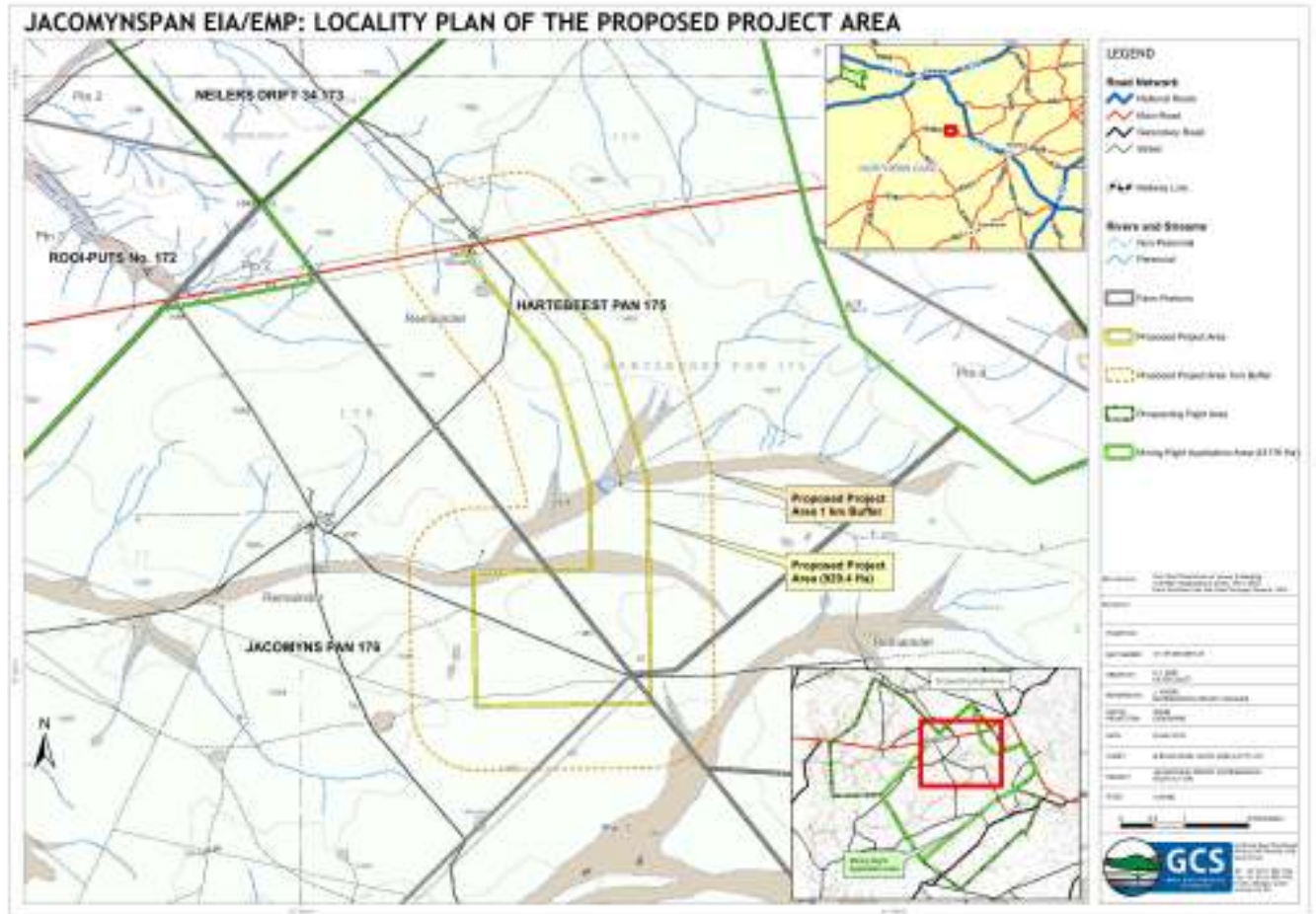


Figure 1 Location of the study area (green outline) in the Northern Cape Province.





**Figure 2 Location of the site (pink shading).**



**Figure 3 Locality plan of the project area.**

## **2. TERMS OF REFERENCE**

The Terms of Reference for the survey were to:

1. Identify objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property (see Appendix A).
2. Study background information on the area to be developed.
3. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).
4. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.
5. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.
6. 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, structures and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.
2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.
3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see Appendix C).
4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.
5. All recommendations are made with full cognizance of the relevant legislation.
6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might occur. In this case certain patches within the surveyed area were densely vegetated which affected archaeological visibility.

### **4. LEGISLATIVE REQUIREMENTS**

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

#### **4.1 The National Heritage Resources Act**

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

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

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

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and 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. The different phases during the HIA process are described in Appendix E. An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m<sup>2</sup> or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m<sup>2</sup>
- 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 or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

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

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

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

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place. Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

#### **4.2 The National Environmental Management Act**

This act (Act 107 of 1998) states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

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

### **5. THE INTERNATIONAL FINANCE CORPORATIONS' PERFORMANCE STANDARD FOR CULTURAL HERITAGE**

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

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

Impacts on the cultural heritage should be minimized. This include the possible maintenance of such sites in situ, or when impossible, the restoration of the functionality of the cultural heritage in a different location. When cultural historical and archaeological artifacts and structures need to be removed is should be done by professionals and by abiding to the applicable legislation. The removal of cultural heritage resources may however only be

considered if there are no technically or financially feasible alternatives. In considering the removal of cultural resources, it should be outweighed by the benefits of the overall project to the effected communities. Again professionals should carry out the work and adhere to the best available techniques.

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

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

## **6. METHODOLOGY**

### **6.1 Survey of literature**

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

### **6.2 Field survey**

The survey was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development. One regularly looks a bit wider than the demarcated area, as the surrounding context needs to be taken into consideration. However, since this was a baseline study only a broad geographical survey was conducted.

If required, the location/position of any site was determined by means of a Global Positioning System (GPS)<sup>1</sup>, while photographs were also taken where needed. The survey was undertaken by a physical survey via off-road vehicle and on foot (Figure 4). Sixty hours were spent in the field.

### **6.3 Oral histories**

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

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<sup>1</sup> A Garmin Oregon 550 with an accuracy factor of a few meters.



**Figure 4 GPS track of the surveyed area<sup>2</sup>. North reference is to the top.**

#### 6.4 Documentation

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

#### 6.5 Evaluation of Heritage sites

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

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

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<sup>2</sup> It needs to be noted that the site was visited twice. A GPS track was not taken during the first visit as this was before this became common practice. Therefore this track may seem to exclude certain areas, but these were covered during the first visit.



- Potential to answer present research questions.

## **7. DESCRIPTION OF THE AREA**

The proposed Jacomynspan Project is situated in the Northern Cape Province as indicated earlier. The area that was investigated is mostly undisturbed by past human interventions. The reason for this is that it had been mostly used for grazing.

The vegetation cover (Figure 5-7) mostly is undisturbed and includes short to medium long grass. In certain areas pioneer plant species, mainly weeds were identified, indicating some kind of earlier disturbance. In such areas the archaeological visibility is bad, but it needs to be taken into consideration that these are disturbed areas. Mostly the visibility was good, even up to more than 500m.



**Figure 5 General view of vegetation in the surveyed area.**



**Figure 6 Another view of the vegetation, in this case on the farm Jacomynspan where mining drilling operations are in progress.**



**Figure 7 View of the surveyed area taken from one of the small hills in the vicinity.**

The surveyed area is drained by various non-perennial streams. Since this is very dry country these rivers runs very seldom. Although some of these catchments can be seen on the map (Figure 8) these are almost not visible in the field. The Orange River is the large water

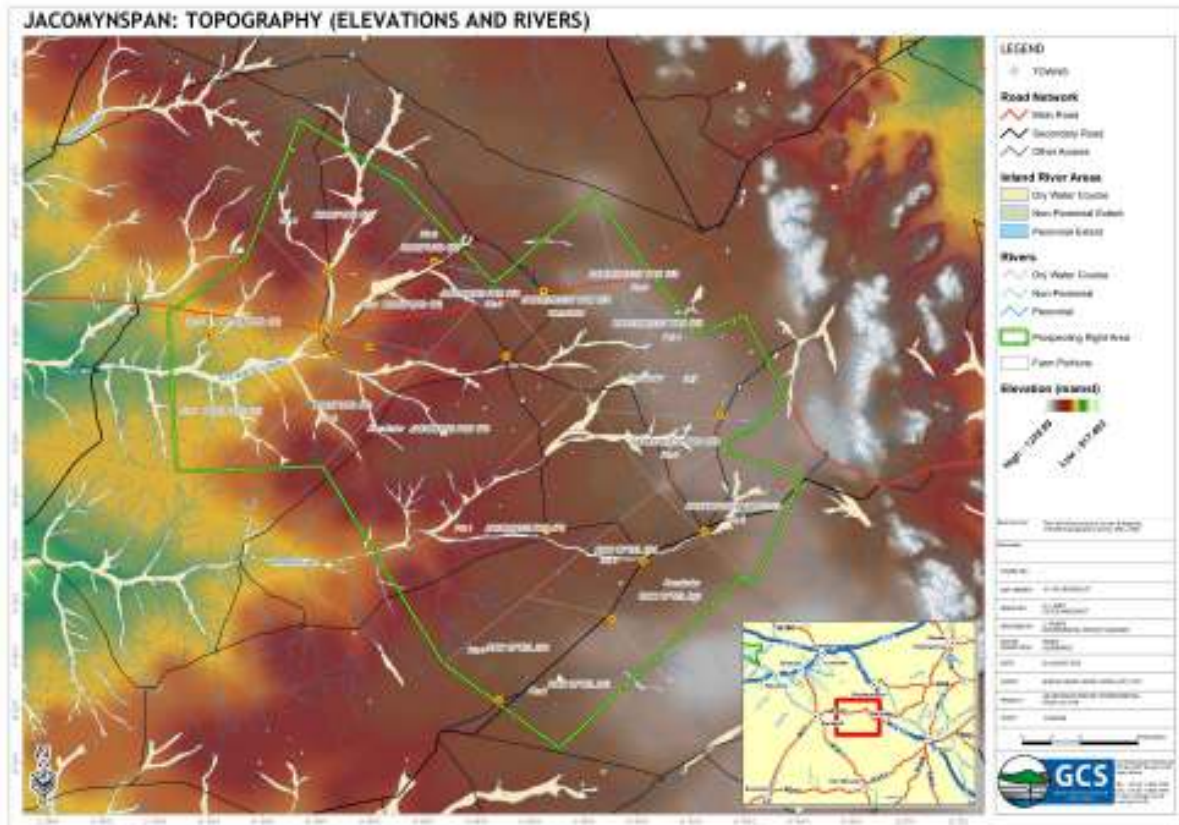
source in the vicinity, but it is found more than 30 km to the north and north-east. Here and there some shallow pans are also found.

The topography of the area basically is flat (Figure 9), but one can understand that over such a large area there has to be height differences. These however are not very prominent. A few hills, consisting mostly of boulders do however occur here (Figure 10). In one instance two small hills close to each other, are completely composed out of quartzite (Figure 11).

A number of farm and other buildings are found in the area. Some of these were built quite recently and therefore does not have any heritage significance. Others, which date from the earliest period of occupation by white farmers during the mid-19<sup>th</sup> century, are included under the discussion of sites found during the survey.



**Figure 8 Map indicating the water sources in and around the surveyed area.**



**Figure 9 Map indicating the topography of the surveyed area.**



**Figure 10 One of the small hills, consisting of large boulders, found in the surveyed area.**



**Figure 11 One of the two small quartzite hills in the surveyed area.**

## **8. HISTORICAL CONTEXT**

During the survey twenty-three sites of cultural heritage significance were located in the surveyed area, with five more found in close vicinity thereof. This however was done in a much larger area than the final project site (see Van Vollenhoven 2012a). Only one of these sites is within the final development area.

Some Middle and Late Stone Age tools were also identified. These are however regarded as being isolated finds. In order to enable the reader to understand the finds and the history of the broader geographical area, as well as possible finds that could be unearthed during development activities, it is necessary to give a background regarding the different phases of human history.

### **8.1 Stone Age**

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

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

This geographical area is not well-known as one containing many prehistoric sites. One however has to realize that this most likely only indicates that not much research has been done here before. On the existing SAHRA Database no such sites are indicated here. The nearest indicated are the Doornlaagte Early Stone Age archaeological site close to Kimberley, the well-known Wonderwerk Cave in the Kuruman Hills to the east, Tsantsabane, an ancient specularite working on the eastern side of Postmasburg, Doornfontein, another specularite working north of Beeshoek and a cluster of important Stone Age sites near Kathu. Additional specularite workings with associated Ceramic Later Stone Age material and older Fauresmith sites (early Middle Stone Age) are known from Lylyfeld, Demaneng, Mashwening, King, Rust & Vrede, Paling, Gloucester and Mount Huxley (Morris 2005: 3).

The onset of the Middle Stone Age coincided with a widespread demand for coloured or glittering minerals that arose at the time for still unknown reasons. The intensive collection of such substances soon exhausted surface exposures and led to the quest being extended underground and thus to the birth of mining practice. Specularite was commonly mined in the Postmasburg area. In 1968 AK Boshier, working in collaboration with P Beaumont, found a number of underground specularite mines on Paling (De Jong 2010: 35). Stone and Iron Age communities mined specularite associated with iron ores for cosmetic purposes at Blinkklipkop, Paling, Gloucester and other farms (De Jong 2010: 41; Snyman 2000: 3).

A number of Stone Age sites and scattered finds of Stone Age material were identified by Küsel et.al. (2009) and Archaetnos close to the town of Hotazel and adjacent to the Gamagara River during 2011 (Archaetnos database). Many Middle and Late Stone Age tools have been found by Archaetnos during surveys in the Northern Cape. These sites are located close to Griekwastad, Hotazel, Postmasburg and Kenhardt ([www.archaetnos.co.za](http://www.archaetnos.co.za)). On the farm Konkooksies 91 in the Pofadder district, five sites with Middle and Late Stone Age tools were identified (Pelser 2011). Many Middle and Late Stone Age tools as well as rock engravings were also found on the farm Van Rooys Vley in the Upington district (Van Vollenhoven 2012b).

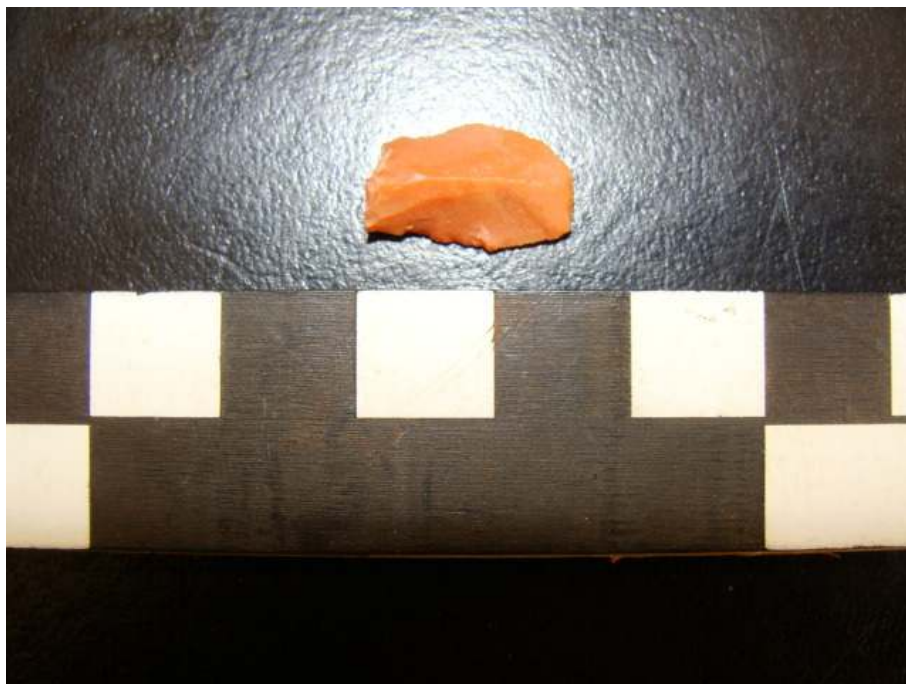
The mentioned Late Stone Age sites are associated with the San people. Mitchell (2002: 126) indicates that the language group who occupied the Northern Cape is the /Auni-//Khomani and Eastern /Hoa. These people were hunters and gatherers which means that they would have moved around, leaving little trace of their existence.

The environment here seems very similar to that at the study area, indicating that Stone Age material is likely to also be found within the Jacomynspan study area. This was indeed the case (Figure 12-13; also see later discussion).

Rock engraving (rock pecking) sites are known from Beeshoek and Bruce (Morris 2005: 3; Snyman 2000: 3). Similar rock peckings was also found during a survey on the farm Van Roois Vley, to the north of Upington (Van Vollenhoven 2012b). Rock engravings are associated with the Late Stone Age people. Two such sites were identified just outside of the project area during the current survey (see later discussion).



**Figure 12 MSA scraper, one of many isolated stone tools found during the survey.**



**Figure 13 LSA tool found during the survey.**

From the above mentioned it is clear that Stone Age people did utilize the area by settling and probably hunting and gathering in it. The environment definitely would be supportive to Stone Age activities. The small hills most likely would have given natural shelter and material to make stone tools from. These volcanic intrusions definitely give material suitable

for the manufacture of lithic tools. Although the large flat surrounding area would not have given shelter, it must have been a prime hunting area. It should be indicated that the surrounding plains are dominated by softer rocks like calcrete which are not suitable for the manufacture of stone tools. This would most likely be limited to the few small hills in the area. One should therefore be on the lookout for stone tools during construction work on the site.

## 8.2 Iron Age

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

Early Iron Age (EIA) 200 – 1000 A.D.

Late Iron Age (LIA) 1000 – 1850 A.D.

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

Early Iron Age (EIA) 250 – 900 A.D.

Middle Iron Age (MIA) 900 – 1300 A.D.

Late Iron Age (LIA) 1300 – 1840 A.D.

No Early or Middle Iron Age sites have been identified in the area of study. Iron Age people occupied the central and eastern parts of southern Africa from about 200 A.D., but the San and Khoi remained in the western and southern parts (Inskeep 1978: 126; see also Huffman 2007).

During the Late Iron Age (LIA), people stayed in extensive stonewalled settlements, such as the Thlaping capital Dithakong, 40 km north of Kuruman. Sotho-Tswana and Nguni societies, the descendants of the LIA mixed farming communities, found the region already sparsely inhabited by the Late Stone Age (LSA) Khoisan groups, the so-called 'first people'. Most of them were eventually assimilated by LIA communities and only a few managed to survive, such as the Korana and Griqua. This period of contact is sometimes known as the Ceramic Late Stone Age and is represented by the Blinkklipkop specularite mine near Postmasburg and finds at the Kathu Pan (De Jong 2010: 36). It is also known that Late Iron Age people did utilize the area close to the Orange River, albeit briefly, as they did mine copper in the Northern Cape (Inskeep 1978: 135).

Iron Age people therefore probably did not settle in the study area. It therefore is no surprise that no such sites were identified during the survey.

## 8.3 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. 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.

Such sites include the many historical buildings and structures indicated on the SAHRA database in Kakamas, Kenhardt, Keimoes and Upington (SAHRA Database). These are associated with the early missionaries, travelers, first white farmers and establishment of towns during the 19<sup>th</sup> century.

Factors such as population expansion, increasing pressure on natural resources, the emergence of power blocs, attempts to control trade and penetration by Griquas, Korana and white communities from the south-west resulted in a period of instability in Southern Africa that began in the late 18<sup>th</sup> century and effectively ended with the settlement of white farmers in the interior. This period, known as the *difaqane* or *Mfecane*, also affected the Northern Cape Province, although at a relatively late stage compared to the rest of Southern Africa. Here, the period of instability, beginning in the mid-1820s, was triggered by the incursion of displaced refugees associated with the Tlokwa, Fokeng, Hlakwa and Phuting tribal groups (De Jong 2010: 36).

The *difaqane* coincided with the penetration of the interior of South Africa by white traders, hunters, explorers and missionaries. The first traders in the Northern Cape were PJ Truter's and William Somerville's journey of 1801, which reached Dithakong at Kuruman. They were again followed by Cowan, Donovan, Burchell and Campbell and resulted in the establishment of a London Mission Society station near Kuruman in 1817 by James Read (De Jong 2010: 36). During the 1870's William Sanderson, John Ryan and John Ludwig passed through the area close to Postmasburg (Snyman 2000: 3).

The Great Trek of the Boers from the Cape in 1836 brought large numbers of Voortrekkers up to the borders of large regions known as Bechuanaland and Griqualand West, thereby coming into conflict with many Tswana groups and also the missionaries of the London Mission Society. The conflict between Boer and Tswana communities escalated in the 1860s and 1870s when the Korana and Griqua communities became involved and later also the British government.

The conflict mainly centered on land claims by various communities. For decades the western border of the Transvaal Boer republic was not fixed. Only through arbitration (the Keate Arbitration), triggered by the discovery of gold at Tati (1866) and diamonds at Hopetown (1867) was part of the western border finally determined in 1871. Ten years later, the Pretoria Convention fixed the entire western border, thereby finally excluding Bechuanaland and Griqualand West from Boer domination (De Jong 2010: 36).

The Gariep area was inhabited by the Nama, Bondelswarts, Afrikaners, Koranna and the Griqua. These people utilized the islands in the Orange (Gariep) River and due to their wars the Koranna chief, Klaas Lukas, appealed for the establishment of a mission station at

Olyfenhoutsdrift. This led to the Reverend Christiaan Schröder establishing a mission station here in 1871. The buildings at the missionary were erected between 1873 and 1883. These buildings are today hosting the museum in the town of Upington (Kalahari-Oranje Museum brochure).

Conflict between the white farmers and the San and Koranna between 1869 and 1879 led to a visit by Sir Thomas Upington to investigate the situation. This resulted in a police force being stationed here. The Reverend Schröder refused them using the name Olyvenhoutsdrift and therefore the name Upington was used to refer to the police. In 1898 the two areas united under the name Upington (Kalahari-Oranje Museum brochure).

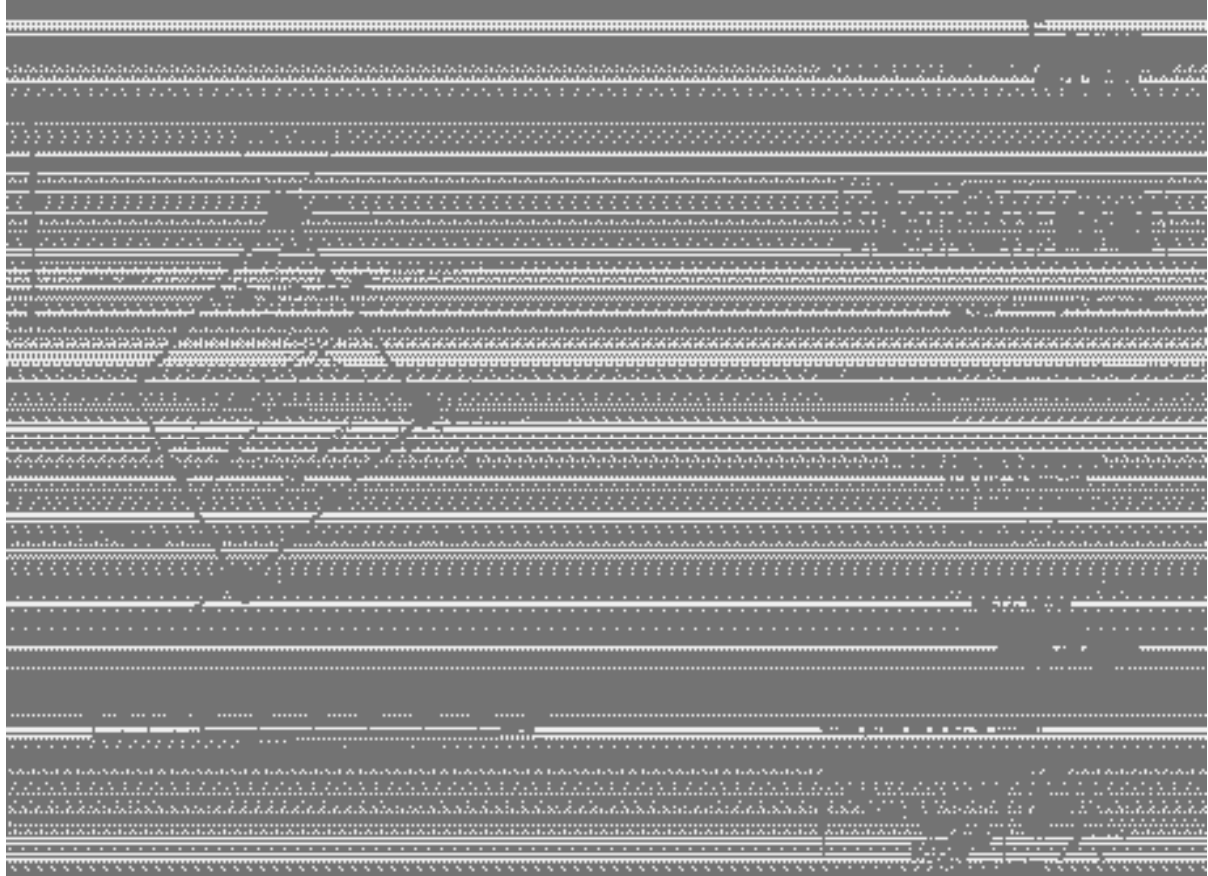
From the 1880's onwards colonial settlement was promoted in the area. Government-owned land was surveyed and divided into farms, which were transferred to farmers. Surveyors were given the task of surveying and naming some of the many farms in this region. These farms were allocated to prospective farmers, but permanent settlement only started in the late 1920s and the first farmsteads were possibly built during this period. The region remained sparsely populated until the advent of the 20<sup>th</sup> century (De Jong 2010: 36).

For this reason not much information on the farms in the study area could be obtained. It is known that the farm Rok Optel was divided into three portions in 1923 (Figure 14). Portion 1 became known as Titiespan, Portion 2 as Stilverlaat and portion 3 as Welgevonden (Surveyor-General F488/1885).



**Figure 14 Diagram of the farm Rok Optel dated 1923 (Surveyor-General F488/1885).**

Certain portions of the farm Jacomynspan were established during the late 1930's. Portion 1 became the farm Elandslaagte in 1938 and portion 2 became Glen Connan in 1939 (Figure 15). Even during that time some of the surrounding farms were still Crown Land (Surveyor-General, F 395/1884).



**Figure 15 Diagram of the farm Elandslaagte portion 1 of the farm Jacomynspan in 1938 (Surveyor-General, F 395/1884).**

Unfortunately nothing else could be learned from these diagrams. It does not for instance show buildings or other infrastructure. Also no historical diagrams of the other farms could be obtained.

Another source about the region (Van Zyl 2010: 13) also indicates that most of the farms were still Government farms and were leased to farmers in 1875. It seems as if shortly hereafter farms were sold to individuals. For instance JJ Pepler bought the farm Keukendraai in 1880. This farm is situated to the north-east of the project area. Izak Malherbe seems to have been the first owner of the farm Uitdraai. He sold it to Izak Meeuwesen in 1903. This farm eventually became the town of Groblershoop where the first house was only built in 1912 (Van Zyl 2010: 37).

The town was first called Sternham, but in 1935 the name was changed to Groblershoop. It was named after the Minister of Lands, Mr. PGW Grobler, who played an important role in

the building of the Boegoeberg Dam and the irrigation system linked thereto (Van Zyl 2010: 38). The dam and irrigation system was built in 1929 (Van Zyl 2010: 14).

The town of Putsonderwater is located on the farm Klippan. The town was first called Krombegin. During the 1880's David Ockhuis dug a well here. As water was a very scarce commodity during those days, he decided to tell everyone that the well is dry and from this originated the name Putsonderwater (Well-without-water). It later became an important station for the farmers to reach the markets (Erasmus 1995:340-341). Today it is a ghost town.

The above mentioned information means that the buildings on these farms could only have been built after the mid-19<sup>th</sup> century and most likely after more or less 1875. This gives assistance in the dating thereof.

## 9. DISCUSSION OF SITES FOUND DURING THE SURVEY

Although twenty-eight sites have been identified during the baseline survey (see Van Vollenhoven 2012a), only one was found to be in the final development area. However all these sites are discussed as it gives contextual background.

### *9.1 Site 1 – Farm yard on the remainder of the farm Hartebeestpan 175*

As indicated this is the only site to be directly impacted on by the development. It is a farm yard consisting of various buildings, including workers houses. These are very typical of the other farm houses and workers houses in the area (Figure 16-18). The buildings are older than 60 years and most likely were built during the 1930's.

It is not very unique, since almost all the buildings on other farms are similar. It also seems to have had a few changes made thereto through the years. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection C (IV C).

GPS: 29°16.468'S  
21°46.439'E

The buildings may therefore be demolished during development activities on site and this report is seen as ample mitigation in this regard. However, if the buildings are not to be directly affected by the development, it should be left as it is. The site is right on the edge of the development, and therefore this should indeed be possible. It may even be re-used for another purpose such as offices.



**Figure 16** The main house and other farm buildings at site no 1.



**Figure 17** Outbuildings at site no. 1.



**Figure 18 Workers houses at site no. 1.**

#### 9.2 Site 2 – grave yard on the remainder of the farm Hartebeestpan 175

This site is reasonably close to the development. It is a grave yard consisting of at least 14 graves (Figure 19). Twelve of the graves are stone packed, some of them with headstones. Two has cement borders and cement headstones.

Only one grave has a legible date, being 1972. The other will therefore be classified as unknown. None of the graves have legible surnames.

Graves are always given a rating of **high** cultural significance due to it being a sensitive matter. Graves with an unknown date are always handled as if older than 60 years. Graves older than 60 years are regarded as heritage graves. The graves receive a field rating of Local grade III B.

GPS: 29°16.190'S  
21°46.517'E

Usually there are two options when dealing with graves. The first option is to leave the graves *in situ*. This would be possible should there be no direct impact on the graves. However, there always is a secondary impact as descendants may find it difficult to visit the site once mining has commenced. Therefore the site should be fenced in and a management plan should be written for the preservation and maintenance thereof. Such a fence should be erected at least 50 m from the perimeter of the site as blasting closer than that will definitely have a negative impact on the graves.

The Management Plan would detail aspects such as the fence and site management and maintenance. In addition, the plan would provide details on how it will be possible for

descendants that might wish to visit the graves, when access will be granted as the mine is compelled to grant access. The fence and site will need to be managed and maintained. The management plan includes inter alia arrangements for security and safety measures. Other measures would include the preservation and maintenance of the site where aspects such as cleaning and upkeep will be dealt with. Such a plan should be written and then monitored annually by an independent heritage specialist.

The plan will have to be approved by the Burial Grounds and Graves Unit (BGG) of the South African Heritage Resources Agency (SAHRA). SAHRA has specific guidelines for management plans and these will have to be followed.

The second option is to exhume the graves and have the bodies reburied. This usually is only allowed if there is a direct impact on the site. Such a process has to be motivated to SAHRA and permits needs to be applied for. It is a lengthy process and includes social consultation in accordance with legislation in order to obtain permission from descendants or at least proof that a concerted effort has been made to do such consultation.

Graves younger than 60 years are handled by a registered undertaker. Graves older than 60 years and those of an unknown date is regarded as heritage graves. In such a case an archaeologist is also involved in the process.

Since there will be no direct impact, option 1 is recommended, just to ensure that secondary impact is minimized.



**Figure 19 Graves at site no.2.**

### 9.3 Site 3– Outbuilding on portion 3 of the farm Rooiputs 172

This is an outbuilding (wagon house/ store room) associated with site 5. The building is very typical of the buildings in the area, but this one is a very good example (Figure 20). The building is older than 60 years and most likely was built during the 1930's.

It is not very unique, since almost all the buildings on other farms are similar. It therefore is regarded as having **medium** cultural significance. It received a field rating of Local Grade IIIB.

GPS: 29°17.796'S  
21°38.571'E

There will be no impact on the site. It therefore needs to be left as it is.



**Figure 20 Outbuilding at site no. 3.**

### 9.4 Site 4 – possible LSA site

This is a possible Late Stone Age site. However only one stone tool (Figure 13 - above) and pieces of ostrich egg shell were identified. The site is on top of one of the quartzite hills mentioned earlier. As too few artefacts were found to call it a proper site it receives a rating of **low** cultural significance.

GPS: 29°18.457'S  
21°39.952'E

The possible site receives a field rating of General protection C (IV C). It may therefore be demolished, but since there will not be any impact here it should be left as it is.



### 9.5 Site 5 – farm yard on portion 6 of the farm Rooiputs172

This is a farm yard consisting of various buildings. These are very typical of the other farm houses and workers houses in the area (Figure 21). There also is a stone kraal for sheep associated with it (Figure 22). The buildings are older than 60 years and most likely were built during the 1930's. The kraal may be younger.

It is not very unique, since almost all the buildings on other farms are similar. It also seems to have had a few changes made thereto through the years. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B).

GPS: 29°18.712'S  
21°38.574'E

The buildings and kraal may therefore be demolished during development activities on site, but should be recorded first. However, since the buildings are not to be affected by the development, it should be left as it is.



**Figure 21 Buildings at site no. 5.**



**Figure 22 Stone sheep kraal at site no. 5.**

9.6 Site 6 – grave yard on portion 6 of the farm Rooiputs172

This is a grave yard consisting of at least 34 graves (Figure 23). These are all stone packed and none have headstones. Accordingly no names or dates are present and the graves are thus classified as unknown.

Graves are always given a rating of **high** cultural significance due to it being a sensitive matter. Graves with an unknown date are always handled as if older than 60 years. Graves older than 60 years are regarded as heritage graves. The graves receive a field rating of Local grade III B.

GPS: 29°18.707'S  
21°38.511'E

Usually there are two options when dealing with graves. The first option is to leave the graves *in situ*. This would be possible should there be no direct impact on the graves. However, there always is a secondary impact as descendants may find it difficult to visit the site once mining has commenced. Therefore the site should be fenced in and a management plan should be written for the preservation and maintenance thereof. Such a fence should be erected at least 50 m from the perimeter of the site as blasting closer than that will definitely have a negative impact on the graves.

The Management Plan would detail aspects such as the fence and site management and maintenance. In addition, the plan would provide details on how it will be possible for descendants that might wish to visit the graves, when access will be granted as the mine is compelled to grant access. The fence and site will need to be managed and maintained. The management plan includes inter alia arrangements for security and safety measures. Other

measures would include the preservation and maintenance of the site where aspects such as cleaning and upkeep will be dealt with. Such a plan should be written and then monitored annually by an independent heritage specialist.

The plan will have to be approved by the Burial Grounds and Graves Unit (BGG) of the South African Heritage Resources Agency (SAHRA). SAHRA has specific guidelines for management plans and these will have to be followed.

The second option is to exhume the graves and have the bodies reburied. This usually is only allowed if there is a direct impact on the site. Such a process has to be motivated to SAHRA and permits needs to be applied for. It is a lengthy process and includes social consultation in accordance with legislation in order to obtain permission from descendants or at least proof that a concerted effort has been made to do such consultation.

Graves younger than 60 years are handled by a registered undertaker. Graves older than 60 years and those of an unknown date is regarded as heritage graves. In such a case an archaeologist is also involved in the process.

Since the site will not be impacted on, it should be left as it is.



**Figure 23 Graves at site no. 6.**

#### 9.7 Site 7- grave yard on portion 5 of the farm Rooiputs172

This is a grave yard consisting of at least 9 graves (Figure 24). These all have granite dressings and headstones. The surnames on all the graves are Visser. The dates of death varied between 1918 and 1962. Therefore some of the graves are older than 60 years (heritage graves) and some younger.

Graves are always given a rating of **high** cultural significance due to it being a sensitive matter. Graves with an unknown date are always handled as if older than 60 years. Graves older than 60 years are regarded as heritage graves. The graves receive a field rating of Local grade III B.

GPS: 29°17.658'S  
21°38.170'E



**Figure 24 Graves at site no. 7.**

Usually there are two options when dealing with graves. The first option is to leave the graves *in situ*. This would be possible should there be no direct impact on the graves. However, there always is a secondary impact as descendants may find it difficult to visit the site once mining has commenced. Therefore the site should be fenced in and a management plan should be written for the preservation and maintenance thereof. Such a fence should be erected at least 50 m from the perimeter of the site as blasting closer than that will definitely have a negative impact on the graves.

The Management Plan would detail aspects such as the fence and site management and maintenance. In addition, the plan would provide details on how it will be possible for descendants that might wish to visit the graves, when access will be granted as the mine is compelled to grant access. The fence and site will need to be managed and maintained. The management plan includes inter alia arrangements for security and safety measures. Other measures would include the preservation and maintenance of the site where aspects such as cleaning and upkeep will be dealt with. Such a plan should be written and then monitored annually by an independent heritage specialist.

The plan will have to be approved by the Burial Grounds and Graves Unit (BGG) of the South African Heritage Resources Agency (SAHRA). SAHRA has specific guidelines for management plans and these will have to be followed.

The second option is to exhume the graves and have the bodies reburied. This usually is only allowed if there is a direct impact on the site. Such a process has to be motivated to SAHRA and permits needs to be applied for. It is a lengthy process and includes social consultation in accordance with legislation in order to obtain permission from descendants or at least proof that a concerted effort has been made to do such consultation.

Graves younger than 60 years are handled by a registered undertaker. Graves older than 60 years and those of an unknown date is regarded as heritage graves. In such a case an archaeologist is also involved in the process.

Since the site will not be impacted on, it should be left as it is.

#### 9.8 Site 8 – two informal graves and a workers house on portion 6 of the farm Rooiputs172

Graves:

The site consists of two graves (Figure 25). Both are stone packed, but have headstones made of concrete slabs (milestones have been used). No legible information is available and the graves therefore are unknown.

Graves are always given a rating of **high** cultural significance due to it being a sensitive matter. Graves with an unknown date are always handled as if older than 60 years. Graves older than 60 years are regarded as heritage graves. The graves receive a field rating of Local grade III B.

GPS: 29°17.751'S  
21°38.122'E

Usually there are two options when dealing with graves. The first option is to leave the graves *in situ*. This would be possible should there be no direct impact on the graves. However, there always is a secondary impact as descendants may find it difficult to visit the site once mining has commenced. Therefore the site should be fenced in and a management plan should be written for the preservation and maintenance thereof. Such a fence should be erected at least 50 m from the perimeter of the site as blasting closer than that will definitely have a negative impact on the graves.

The Management Plan would detail aspects such as the fence and site management and maintenance. In addition, the plan would provide details on how it will be possible for descendants that might wish to visit the graves, when access will be granted as the mine is compelled to grant access. The fence and site will need to be managed and maintained. The management plan includes inter alia arrangements for security and safety measures. Other measures would include the preservation and maintenance of the site where aspects such as

cleaning and upkeep will be dealt with. Such a plan should be written and then monitored annually by an independent heritage specialist.

The plan will have to be approved by the Burial Grounds and Graves Unit (BGG) of the South African Heritage Resources Agency (SAHRA). SAHRA has specific guidelines for management plans and these will have to be followed.

The second option is to exhume the graves and have the bodies reburied. This usually is only allowed if there is a direct impact on the site. Such a process has to be motivated to SAHRA and permits needs to be applied for. It is a lengthy process and includes social consultation in accordance with legislation in order to obtain permission from descendants or at least proof that a concerted effort has been made to do such consultation.

Graves younger than 60 years are handled by a registered undertaker. Graves older than 60 years and those of an unknown date is regarded as heritage graves. In such a case an archaeologist is also involved in the process.

Since the site will not be impacted on, it should be left as it is.



**Figure 25 Graves at site no. 8.**

Workers house:

The graves are close to another workers house (Figure 26) similar to others described in this report. Therefore the building is given a rating of **medium** cultural significance. The field rating given is General protection B (IV B) which means it should be recorded before destruction. However, there will be no impact on these and therefore it should rather be left **in situ**.



**Figure 26 Farm workers house at site no. 8.**

*9.9 Site 9 - farm yard on portion 4 of the farm Rooiputs172*

This is a farm yard consisting of various buildings. These are very typical of the other farm houses in the area (Figure 27-28). It includes the farm house which according to the owner was built in 1919 and a lovely old outbuilding, most likely a wagon house. The buildings are older than 60 years and most likely were built during the 1930's. The kraal may be younger.

It is not very unique, since almost all the buildings on other farms are similar. It also seems to have had a few changes made thereto through the years. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B).

GPS: 29°15.625'S  
21°38.419'E

The buildings may therefore be demolished during development activities on site, but should be recorded first. However, the buildings will not be affected by the development and it should be left as it is.



**Figure 27** Wagon house/ store buildings at site no. 9.



**Figure 28** Main house, unfortunately hid by a fence, at site no. 9.



9.10 Site 10 – grave yard on portion 4 of the farm Rooiputs172

The site consists of five graves (Figure 29). They all have granite border and headstones. All the graves are from the Visser family. The dates of death vary between 1935 and 2003. Therefore some are older than 60 years (heritage graves) and some younger.

Graves are always given a rating of **high** cultural significance due to it being a sensitive matter. Graves with an unknown date are always handled as if older than 60 years. Graves older than 60 years are regarded as heritage graves. The graves receive a field rating of Local grade III B.

GPS: 29°15.727'S  
21°38.616'E



**Figure 29 Graves at site no. 10.**

Usually there are two options when dealing with graves. The first option is to leave the graves *in situ*. This would be possible should there be no direct impact on the graves. However, there always is a secondary impact as descendants may find it difficult to visit the site once mining has commenced. Therefore the site should be fenced in and a management plan should be written for the preservation and maintenance thereof. Such a fence should be erected at least 50 m from the perimeter of the site as blasting closer than that will definitely have a negative impact on the graves.

The Management Plan would detail aspects such as the fence and site management and maintenance. In addition, the plan would provide details on how it will be possible for descendants that might wish to visit the graves, when access will be granted as the mine is compelled to grant access. The fence and site will need to be managed and maintained. The management plan includes inter alia arrangements for security and safety measures. Other

measures would include the preservation and maintenance of the site where aspects such as cleaning and upkeep will be dealt with. Such a plan should be written and then monitored annually by an independent heritage specialist.

The plan will have to be approved by the Burial Grounds and Graves Unit (BGG) of the South African Heritage Resources Agency (SAHRA). SAHRA has specific guidelines for management plans and these will have to be followed.

The second option is to exhume the graves and have the bodies reburied. This usually is only allowed if there is a direct impact on the site. Such a process has to be motivated to SAHRA and permits needs to be applied for. It is a lengthy process and includes social consultation in accordance with legislation in order to obtain permission from descendants or at least proof that a concerted effort has been made to do such consultation.

Graves younger than 60 years are handled by a registered undertaker. Graves older than 60 years and those of an unknown date is regarded as heritage graves. In such a case an archaeologist is also involved in the process.

Since the site will not be impacted on, it should be left as it is.

#### *9.11 Site 11 - farm yard on the remainder of the farm Jacomynspan 176*

This is a farm yard consisting of various buildings. These are very typical of the other farm buildings in the area (Figure 30-31). It seems as if these are not in use any more and therefore it shows signs of deterioration. The buildings are older than 60 years and most likely were built during the 1930's.

It is not very unique, since almost all the buildings on other farms are similar. It also seems to have had a few changes made thereto through the years. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B).

GPS: 29°18.723'S  
21°45.133'E

The buildings may therefore be demolished during development activities. However, the buildings are not to be directly affected by the development and should be left as it is.



**Figure 30 Buildings at site no. 11.**



**Figure 31 Main house and outbuilding at site no. 11.**

### 9.12 Site 12 - grave yard on the remainder of the farm Jacomynspan 176

The site consists of four graves (Figure 32). They all have cement borders, but no headstones. The one has a date, being 1957, meaning that it is younger than 60 years. The others are thus unknown. No surnames could be identified.

Graves are always given a rating of **high** cultural significance due to it being a sensitive matter. Graves with an unknown date are always handled as if older than 60 years. Graves older than 60 years are regarded as heritage graves. The graves receive a field rating of Local grade III B.

GPS: 29°15.648'S  
21°45.137'E



**Figure 32 Graves at site no. 12.**

Usually there are two options when dealing with graves. The first option is to leave the graves *in situ*. This would be possible should there be no direct impact on the graves. However, there always is a secondary impact as descendants may find it difficult to visit the site once mining has commenced. Therefore the site should be fenced in and a management plan should be written for the preservation and maintenance thereof. Such a fence should be erected at least 50 m from the perimeter of the site as blasting closer than that will definitely have a negative impact on the graves.

The Management Plan would detail aspects such as the fence and site management and maintenance. In addition, the plan would provide details on how it will be possible for descendants that might wish to visit the graves, when access will be granted as the mine is compelled to grant access. The fence and site will need to be managed and maintained. The

management plan includes inter alia arrangements for security and safety measures. Other measures would include the preservation and maintenance of the site where aspects such as cleaning and upkeep will be dealt with. Such a plan should be written and then monitored annually by an independent heritage specialist.

The plan will have to be approved by the Burial Grounds and Graves Unit (BGG) of the South African Heritage Resources Agency (SAHRA). SAHRA has specific guidelines for management plans and these will have to be followed.

The second option is to exhume the graves and have the bodies reburied. This usually is only allowed if there is a direct impact on the site. Such a process has to be motivated to SAHRA and permits needs to be applied for. It is a lengthy process and includes social consultation in accordance with legislation in order to obtain permission from descendants or at least proof that a concerted effort has been made to do such consultation.

Graves younger than 60 years are handled by a registered undertaker. Graves older than 60 years and those of an unknown date is regarded as heritage graves. In such a case an archaeologist is also involved in the process.

Since the site is reasonably close to the development area and may be impacted on indirectly, option 1 is recommended.

#### *9.13      Site 13 - farm workers house on the remainder of the farm Hartebeestpan 175*

This is a farm workers house similar to others described in this report and therefore very typical of the area (Figure 33). The building is older than 60 years and most likely was built during the 1930's.

It is not very unique, since almost all the buildings on other farms are similar. It also seems not be in use any more and therefore shows signs of deterioration. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B).

GPS: 29°20.975'S  
21°53.241'E

The building will not be impacted on and therefore it should be left as it is.



**Figure 33 Farm workers house at site no. 13.**

*9.14 Site 14 - farm yard on portion 5 of the farm Brakboschpoort 13*

It is a farm yard with buildings similar to others described in this report and therefore very typical of the area (Figure 34). The buildings are older than 60 years and most likely were built during the 1930's.

It is not very unique, since almost all the buildings on other farms are similar. It also seems not be in use any more and therefore shows signs of deterioration. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B). There also are some much younger buildings which have no heritage significance.

GPS: 29°25.298'S  
21°52.464'E

The building will not be affected by the development and should therefore be left as it is.



**Figure 34 Outbuilding at site no. 14.**

*9.15 Site 15 - grave yard on portion 1 of the farm Rok Optel 261*

The site consists of five graves (Figure 35). They all have granite borders and headstones. All the graves are from the Maree family. The dates of death vary between 1929 and 1989 meaning that there are both graves older than 60 years (heritage graves) and younger than 60 years present.

Graves are always given a rating of **high** cultural significance due to it being a sensitive matter. Graves with an unknown date are always handled as if older than 60 years. Graves older than 60 years are regarded as heritage graves. The graves receive a field rating of Local grade III B.

GPS: 29°26.257'S  
21°50.408'E

Usually there are two options when dealing with graves. The first option is to leave the graves *in situ*. This would be possible should there be no direct impact on the graves. However, there always is a secondary impact as descendants may find it difficult to visit the site once mining has commenced. Therefore the site should be fenced in and a management plan should be written for the preservation and maintenance thereof. Such a fence should be erected at least 50 m from the perimeter of the site as blasting closer than that will definitely have a negative impact on the graves.

The Management Plan would detail aspects such as the fence and site management and maintenance. In addition, the plan would provide details on how it will be possible for descendants that might wish to visit the graves, when access will be granted as the mine is

compelled to grant access. The fence and site will need to be managed and maintained. The management plan includes inter alia arrangements for security and safety measures. Other measures would include the preservation and maintenance of the site where aspects such as cleaning and upkeep will be dealt with. Such a plan should be written and then monitored annually by an independent heritage specialist.

The plan will have to be approved by the Burial Grounds and Graves Unit (BGG) of the South African Heritage Resources Agency (SAHRA). SAHRA has specific guidelines for management plans and these will have to be followed.

The second option is to exhume the graves and have the bodies reburied. This usually is only allowed if there is a direct impact on the site. Such a process has to be motivated to SAHRA and permits needs to be applied for. It is a lengthy process and includes social consultation in accordance with legislation in order to obtain permission from descendants or at least proof that a concerted effort has been made to do such consultation.

Graves younger than 60 years are handled by a registered undertaker. Graves older than 60 years and those of an unknown date is regarded as heritage graves. In such a case an archaeologist is also involved in the process.

Since the site will not be impacted on, it should be left as it is.



**Figure 35 Graves at site no. 15.**

9.16 Site 16 - farm yard on portion 1 of the farm Rok Optel 261

This is a farm yard with buildings similar to others described in this report and therefore very typical of the area (Figure 36). The buildings are older than 60 years and most likely were



built during the 1930's, but the house has been changed to such an extent that it does not have any heritage significance any more. In fact, it is only one of the farm workers houses that have heritage significance.

This house is not very unique, since almost all the farm workers houses on other farms are similar. It also seems not be in use any more and therefore shows signs of deterioration. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B). There also are some much younger buildings which have no heritage significance.

GPS: 29°26.434'S  
21°50.212'E

The building will not be affected by the development and it should therefore be left as it is.



**Figure 36 Farm workers house at site no. 16.**

9.17 Site 17- farm yard on portion 2 of the farm Rok Optel 261

This is a farm yard with buildings similar to others described in this report and therefore very typical of the area (Figure 37). The buildings are older than 60 years and most likely were built during the 1930's.

It is not very unique, since almost all the buildings on other farms are similar. It also seems not be in use any more and therefore shows signs of deterioration. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B). There also are some much younger buildings which have no heritage significance.

GPS: 29°28.426'S

21°48.933'E (co-ordinate was taken at gate as access could not be obtained)

The buildings will not be affected by the development, and it should therefore be left as it is.



**Figure 37 Farm yard with buildings at site no. 17.**

9.18 Site 18 - farm yard on portion 3 of the farm Rok Optel 261

This is a farm yard with buildings similar to others described in this report and therefore very typical of the area (Figure 38-39). The buildings are older than 60 years and most likely were built during the 1930's.

It is not very unique, since almost all the buildings on other farms are similar. It also seems not be used very frequently and therefore shows signs of deterioration. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B). There also are some much younger buildings which have no heritage significance.

GPS: 29°31.629'S

21°44.8224'E

The buildings will not be affected by the development and therefore it should be left as it is.



**Figure 38 Main house at site no. 18.**



**Figure 39 Workers house at site no. 18.**

9.19 Site 19 - grave yard on portion 1 of the farm Jacomynspan 176 (Elandslaagte)

The site consists of at least four graves (Figure 40). They are all stone packed with white quartzite stones. No legible information is available as no headstones are visible. The graves therefore are unknown.

Graves are always given a rating of **high** cultural significance due to it being a sensitive matter. Graves with an unknown date are always handled as if older than 60 years. Graves older than 60 years are regarded as heritage graves. The graves receive a field rating of Local grade III B.

GPS: 29°25.545'S  
21°46.730'E



**Figure 40 One of the graves at site no. 19.**

Usually there are two options when dealing with graves. The first option is to leave the graves *in situ*. This would be possible should there be no direct impact on the graves. However, there always is a secondary impact as descendants may find it difficult to visit the site once mining has commenced. Therefore the site should be fenced in and a management plan should be written for the preservation and maintenance thereof. Such a fence should be erected at least 50 m from the perimeter of the site as blasting closer than that will definitely have a negative impact on the graves.

The Management Plan would detail aspects such as the fence and site management and maintenance. In addition, the plan would provide details on how it will be possible for descendants that might wish to visit the graves, when access will be granted as the mine is compelled to grant access. The fence and site will need to be managed and maintained. The

management plan includes inter alia arrangements for security and safety measures. Other measures would include the preservation and maintenance of the site where aspects such as cleaning and upkeep will be dealt with. Such a plan should be written and then monitored annually by an independent heritage specialist.

The plan will have to be approved by the Burial Grounds and Graves Unit (BGG) of the South African Heritage Resources Agency (SAHRA). SAHRA has specific guidelines for management plans and these will have to be followed.

The second option is to exhume the graves and have the bodies reburied. This usually is only allowed if there is a direct impact on the site. Such a process has to be motivated to SAHRA and permits needs to be applied for. It is a lengthy process and includes social consultation in accordance with legislation in order to obtain permission from descendants or at least proof that a concerted effort has been made to do such consultation.

Graves younger than 60 years are handled by a registered undertaker. Graves older than 60 years and those of an unknown date is regarded as heritage graves. In such a case an archaeologist is also involved in the process.

Since the site will not be impacted on, it should be left as it is.

#### *9.20 Site 20 - farm workers house on portion 1 of the Jacomynspan 176 (Elandslaagte)*

This is some farm workers houses similar to others described in this report and therefore very typical of the area (Figure 41). The buildings are older than 60 years and most likely were built during the 1930's. In is situated close to the farm house, but the latter is a much younger building and therefore has no heritage value.

The farm workers buildings are not very unique, since almost all the buildings on other farms are similar. It also shows signs of deterioration. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B).

GPS: 29°25.307'S  
21°46.445'E

The buildings will not be affected by the development and it should therefore be left as it is.



**Figure 41 One of the farm workers houses at site no. 20.**

9.21 Site 21 – well and stone kraal on portion 2 of the farm Rooiputs 172

This is a stone kraal for sheep and a well associated with a house which has no heritage value. The well and kraal is most likely older than 60 years (Figure 42).

It is not very unique, since almost all the farms here have similar kraals and some also wells. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B).

GPS: 29°15.288'S  
21°42.417'E

The structures will not be affected by the development and it should therefore be left as it is.



**Figure 42 Stone well and kraal at site no. 21.**

9.22 Site 22 – two graves on portion 2 of the farm Rooiputs 172

This is a grave yard consisting of one double grave (Figure 43). It has a granite border and headstone. The date of death of the two person buried here is 1976 and 1978. Therefore both are younger than 60 years. The surname on both is La Cock.

Graves are always given a rating of **high** cultural significance due to it being a sensitive matter. Graves with an unknown date are always handled as if older than 60 years. Graves older than 60 years are regarded as heritage graves.

GPS: 29°15.158'S  
21°42.589'E

Usually there are two options when dealing with graves. The first option is to leave the graves *in situ*. This would be possible should there be no direct impact on the graves. However, there always is a secondary impact as descendants may find it difficult to visit the site once mining has commenced. Therefore the site should be fenced in and a management plan should be written for the preservation and maintenance thereof. Such a fence should be erected at least 50 m from the perimeter of the site as blasting closer than that will definitely have a negative impact on the graves.

The Management Plan would detail aspects such as the fence and site management and maintenance. In addition, the plan would provide details on how it will be possible for descendants that might wish to visit the graves, when access will be granted as the mine is compelled to grant access. The fence and site will need to be managed and maintained. The management plan includes inter alia arrangements for security and safety measures. Other

measures would include the preservation and maintenance of the site where aspects such as cleaning and upkeep will be dealt with. Such a plan should be written and then monitored annually by an independent heritage specialist.

The plan will have to be approved by the Burial Grounds and Graves Unit (BGG) of the South African Heritage Resources Agency (SAHRA). SAHRA has specific guidelines for management plans and these will have to be followed.

The second option is to exhume the graves and have the bodies reburied. This usually is only allowed if there is a direct impact on the site. Such a process has to be motivated to SAHRA and permits needs to be applied for. It is a lengthy process and includes social consultation in accordance with legislation in order to obtain permission from descendants or at least proof that a concerted effort has been made to do such consultation.

Graves younger than 60 years are handled by a registered undertaker. Graves older than 60 years and those of an unknown date is regarded as heritage graves. In such a case an archaeologist is also involved in the process.

Since the site will not be impacted on, it should be left as it is.



**Figure 43 Double grave at site no. 22.**

9.23 Site 23 – farm yard on portion 2 of the farm Rooiputs 172

This is a farm yard with buildings similar to others described in this report and therefore very typical of the area (Figure 44-45). The buildings are older than 60 years and most likely were built during the 1930's. It includes the main house, outbuildings and farm workers houses.



It is not very unique, since almost all the buildings on other farms are similar. It also seems not be used very frequently and therefore shows signs of deterioration. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B). There also are some much younger buildings which have no heritage significance.



**Figure 44 Main house at site no. 23.**



**Figure 45 Outbuilding at site no. 23.**

GPS: 29°15.221'S  
21°42.483'E

The buildings will not be affected by the development and it should therefore be left as it is.

9.24 *Site 24 – farm yard on portion 3 of the farm Rooiputs 172*

This is a farm yard with buildings similar to others described in this report and therefore very typical of the area (Figure 46-47). The buildings are older than 60 years and most likely were built during the 1930's. It includes the main house, outbuildings and farm workers houses.

It is not very unique, since almost all the buildings on other farms are similar. It also seems not be in use any more and therefore shows signs of deterioration. It therefore is regarded as having **low** cultural significance. It received a field rating of General protection B (IV B). There also are some much younger buildings which have no heritage significance.

GPS: 29°17.832'S  
21°38.180'E

The buildings will not be impacted on by the development and therefore it should be left as it is.



**Figure 46 Outbuilding at site no. 24.**



**Figure 47 Partially demolished building at site no. 24.**

9.25 Site 25

This is a large grave yard associated with the historical town of Putsonderwater. It contains at least 130 graves (Figure 48-49). These are mostly stone packed, but a few have cement or granite borders and headstones. The dates identified vary between 1918 and 1976. Most of the graves have an unknown date of death. Therefore all three categories of graves are present.

Graves are always given a rating of **high** cultural significance due to it being a sensitive matter. Graves with an unknown date are always handled as if older than 60 years. Graves older than 60 years are regarded as heritage graves. Since it seems as if the town of Putsonderwater will be used as offices for the proposed mine, there will more than likely be an impact on these graves and therefore it has to be included here.

GPS: 29°14.393'S  
21°52.478'E

Usually there are two options when dealing with graves. In this case there may be a secondary impact due to the movement of vehicles between the project site and the offices. Therefore option 1 will be applicable. This entails to leave the graves *in situ*. The site should be fenced in and a management plan should be written for the preservation and maintenance thereof as part of the preservation management plan for the town (site 26).

The plan will have to be approved by the Burial Grounds and Graves Unit (BGG) of the South African Heritage Resources Agency (SAHRA). SAHRA has specific guidelines for management plans and these will have to be followed.



**Figure 48 Graves at site no. 25.**



**Figure 49 Stone packed graves at site no. 25.**

9.26 Site 26 – the historic town of Putsonderwater

Although the town is outside of the project area, the mine plans to make use of the buildings in the town. There will thus be an impact and therefore the site needs to be discussed.

It is beautiful little town dating to the early 20<sup>th</sup> Century. All the buildings in the town are older than 60 years and some of the railway buildings are also older than 60 years (Figure 50-59). It therefore is protected by law. The church, which lies just opposite the railway line, dates to 1957.

GPS: 29°13.905'S  
21°52.355'E

The town receives a rating of **high** cultural significance. The field rating is Local Grade IIIA. However a complete documentation of the site is needed and it may even be of Provincial Grad II significance. Not only is it a very good example of a small frontier town during the early 20th Century, but also an example of our railway heritage.

The site should therefore be documented in full and then re-assessed. Permission for any possible changes to any building or structure should be obtained from the Provincial Heritage Resources Agency of the Northern Cape before any work may be done. Therefore a proper Phase II report and cultural heritage management plan for the town is needed as this will give guidance in this regard.



**Figure 50 Google image of the town of Putsonderwater. North reference is to the top.**



**Figure 51 Railway houses at the Putsonderwater station.**



**Figure 52 Workers house in Putsonderwater.**



**Figure 53 Townscape at Putsonderwater.**



**Figure 54 The old police station at Putsonderwater.**



**Figure 55 The new police station and jail at Putsonderwater.**



**Figure 56 The hotel and general dealer at Putsonderwater.**





**Figure 57 The well at Putsonderwater from which the town got its name.**



**Figure 58 The livestock kraal at Putsonderwater.**



**Figure 59** The church, dating to 1957, at Putsonderwater.

9.27 Site 27 – Stone Age rock engravings (Elephant Site)

Some rock engravings were found close to the town of Putsonderwater. Although this also is outside of the project area, there is likely to be a secondary impact on these due to more people in the area and dust coming from vehicles. It therefore also needs to be discussed.

The engravings are found on rocks against the slope of small hill. It mostly is elephants that are depicted, but also includes some other animals (Figure 60-61). Therefore the site is given the name of Elephant site. Some unidentified figures are also found. Rock engravings are usually associated with LSA San people.

GPS: 29°15.155'S  
21°52.210'E

The site receives a rating of **high** cultural significance. The field rating is Local Grade IIIB. Although it may be mitigated, the best would be to preserve the site **in situ**. There will however not be any impact and therefore it should just be left as it is.



**Figure 60 Rock engravings at the Elephant Site.**



**Figure 61 Other animals depicted on the rock at the Elephant site.**

9.28 Site 28 – Stone Age rock engravings (Antelope Site)

More rock engravings were found close to the town of Putsonderwater. Although this also is outside of the project area, there is likely to be a secondary impact on these due to more people in the area and dust coming from vehicles. It therefore also needs to be discussed.

The engravings are found on rocks on top of the same small hill as the Elephant Site. In fact, pictures on the internet indicate that there may be more sites on this hill. Different animals, mostly some kind of antelope are depicted (Figure 62). Therefore the site is given the name of Antelope site. Rock engravings are usually associated with LSA San people. Some LSA tools were indeed identified nearby on top of the hill (Figure 63).

GPS: 29°15.124'S  
21°52.211'E

The site receives a rating of **high** cultural significance. The field rating is Local Grade IIIB. Although it may be mitigated, the best would be to preserve the site **in situ**. There will however not be any impact and therefore it should just be left as it is.



**Figure 62 Rock engravings at the Antelope Site.**



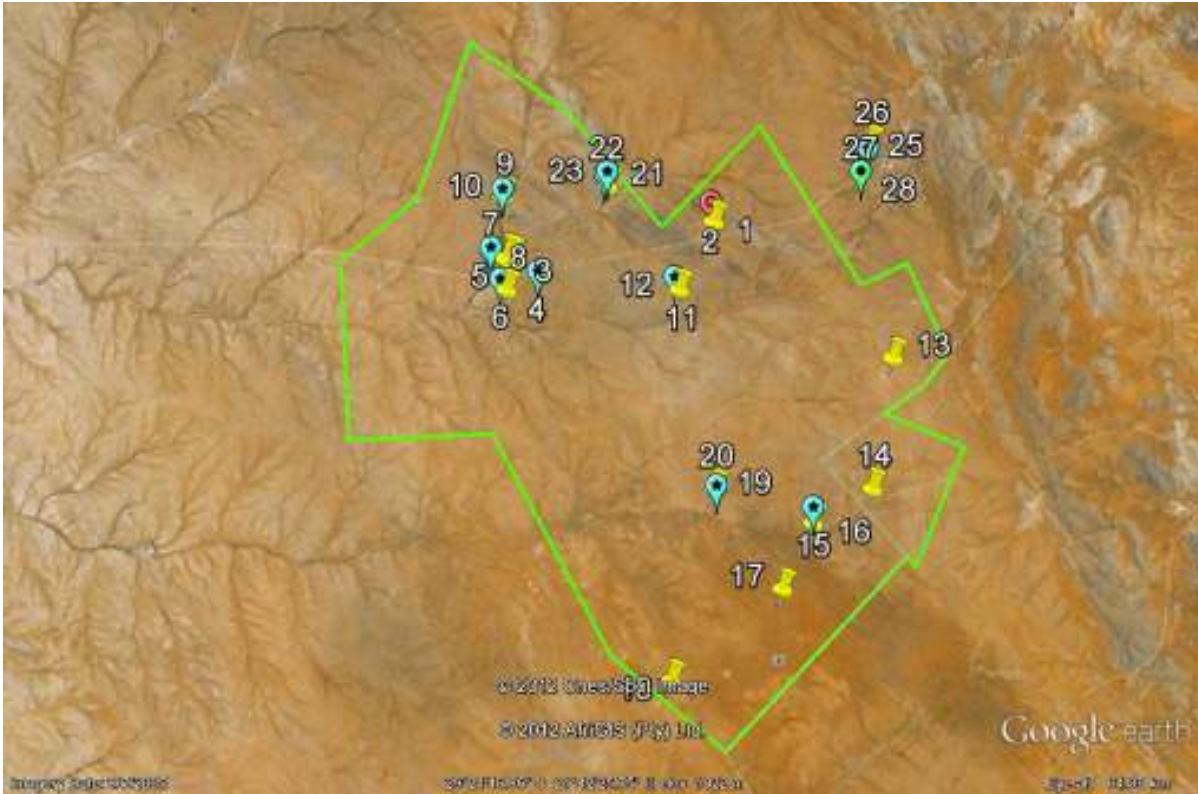
**Figure 63 LSA tools found nearby.**

## **10. KNOWLEDGE GAPS IDENTIFIED**

No specific knowledge gaps were identified apart from what has already been indicated namely that very little information is available on the project area from official records. Of course the size of the area makes it possible that something could have been missed.

## **11. CONCLUSION, MANAGEMENT PLAN & RECOMMENDATIONS**

Only one site of cultural heritage importance was identified within the project area during the survey, with another twenty-seven outside thereof (Figure 64-66). Three of these are reasonably close to the project area with two others close to possible routes that will be used, therefore creating a secondary impact on these sites. The survey of the indicated area was completed successfully.



**Figure 64 Google image of all the sites identified during the survey. North reference is to the top.**



**Figure 65 Google image of the project boundary (in blue) indicating site no. 1 within it and the other nearby sites. North reference is to the top.**



**Figure 66 Google image of the project boundary with site no 1 indicated. North reference is to the top.**

The following is recommended:

- The proposed development may continue, but only after implementation of the mitigation measures proposed.
- The basic principle should be not to damage or demolish any of sites indicated in this report. However, should it be clear that this is the last option, the necessary mitigation measures should be implemented.
- Only site no. 1 (a farm yard) is within the project boundary and will be impacted on directly. It however is of a low cultural significance and may be demolished. For this purpose a permit will be needed from the Provincial Heritage Resources Agency of the Northern Cape. However, since the site is right on the edge of the development it may be possible to rather reuse it, for instance as offices.
- Sites number 3, 5, 8, 9, 13, 14, 16, 17, 18, 20, 21, 23 and 24 are farm yards/ buildings which include buildings older than 60 years. These buildings range from farm houses to workers houses, store rooms and wagon houses and other outbuildings. At site number 3 only an outbuilding was worth mentioning. At site 13 and 20 only workers houses were found and at site 21 a well and kraal. All these buildings and structure should rather be preserved than demolished. However none of these sites will be impacted on. The structures should therefore just be left as it is.

- Site no. 11 is a farm yard close to the development. Although it may be impacted on indirectly the site is not very important and should therefore only be left as it is.
- The possible LSA site (number 4) may be demolished as it does not seem to be a real important site. Again, since there will be no impact it should just be left as it is.
- The following sites are ones which contains graves: 2, 6, 7, 8 (which also includes buildings), 10, 12, 15, 19, 22 and 25. As indicated above there usually are two options when dealing with graves. In cases where there will only be a secondary impact, option 1 will be applicable. This entails to leave the graves *in situ*. The site should be fenced in and a management plan should be written for the preservation and maintenance thereof. On none of the sites there will be a direct impact and therefore option 2, the exhumation and relocation of graves, are not recommended.
- Option 1 only is applicable to site no. 2 and 12, with a possible impact on site no. 25 due to the movement of vehicles during the development.
- The town of Putsonderwater (site number 26) needs to be preserved at all costs. It definitely seems that there will be a secondary impact and perhaps even a direct impact if the mine wants to utilize some of the buildings. A comprehensive phase II heritage study is therefore needed, leading to a phase III management plan for the town. This document can then be used as guide for any possible changes needed to any of the buildings and other structures in the town.
- Sites number 27 and 28 are rock engraving sites. For now these should just be left as it is as there will be no impact on these.
- All the heritage management plans indicated will have to be approved by SAHRA or the specific heritage office dealing with the matter at hand. SAHRA has specific guidelines for management plans and these will have to be followed.
- 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.

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## **APPENDIX A**

### **DEFINITION OF TERMS:**

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

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

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

## **APPENDIX B**

### **DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:**

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

## APPENDIX C

### SIGNIFICANCE AND FIELD RATING:

#### Cultural significance:

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

#### Heritage significance:

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

#### Field ratings:

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

## APPENDIX D

### PROTECTION OF HERITAGE RESOURCES:

#### **Formal protection:**

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

Protected areas - an area surrounding a heritage site

Provisional protection – for a maximum period of two years

Heritage registers – listing grades II and III

Heritage areas – areas with more than one heritage site included

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

#### **General protection:**

Objects protected by the laws of foreign states

Structures – older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

## **APPENDIX E**

### **HERITAGE IMPACT ASSESSMENT PHASES**

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