



Archaetnos Culture & Cultural  
Resource Consultants  
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**A REPORT ON A CULTURAL HERITAGE ASSESSMENT FOR THE PROPOSED  
CONSTRUCTION OF A 132KV OVERHEAD POWERLINE AND SWITCHYARD  
STATION FOR THE AUTHORIZED SOLIS POWER I CSP PROJECT NEAR UPINGTON,  
NORTHERN CAPE PROVINCE**

For:

**SAVANNAH ENVIRONMENTAL (PTY) LTD**

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REPORT: **AE01605V**

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## SUMMARY

Archaetnos cc was appointed by Savannah Environmental (Pty) Ltd to conduct a cultural heritage assessment study for the proposed construction of a 132kV overhead power line and switchyard station for the authorized Solis Power I CSP Project. This is situated on the Remainder of the Farm Van Rooi's Vley, 448 and 449 and Erf 1080 close to Upington in the Northern Cape Province.

No fieldwork was undertaken since the area has been surveyed at least twice before and a Phase II mitigation study has also been conducted there. The results from these were utilized in compiling this impact assessment report. During these studies numerous features of archaeological nature was revealed. Two of these date to the recent historical past or Historical Age and the rest to the Stone Age. One of the historical sites is a grave yard. However the grave site will not be impacted on by the proposed switchyard station and the proposed power line since the graves are within the footprint of the proposed camp site and not within the footprint of the mentioned development. Therefore impacts of cultural significance due to the proposed switchyard station and powerline are low. The features of the grave site are discussed in the report.

It seems some of these features will be directly impacted on by the development. On others there might be a secondary impact. Mitigation was already done on this area previously and this is taken into consideration in this assessment. Additional mitigation measures are nevertheless proposed. The development may continue after implementation of these.

The developer also needs to take note that all archaeological and historical sites may not have been identified. It also is possible that subterranean archaeological sites may be found later on. On identification of these it needs to be dealt with by an archaeologist.

## CONTENT

	Page
SUMMARY .....	3
CONTENT .....	4
1. INTRODUCTION .....	5
2. TERMS OF REFERENCE .....	9
3. CONDITIONS AND ASSUMPTIONS .....	10
4. LEGISLATIVE REQUIREMENTS .....	10
5. METHODOLOGY .....	14
6. DESCRIPTION OF THE AREA .....	16
7. HISTORICAL CONTEXT (BASELINE INFORMATION).....	18
8. DISCUSSION OF SITES AND FEATURES FOUND DURING THE SURVEY, POTENTIAL IMPACT, MITIGATION AND MANAGEMENT MEASURES .....	25
9. IMPACT ASSESSMENT TABLES.....	32
10. CONCLUSIONS AND RECOMMENDATIONS .....	34
11. REFERENCES .....	37
APPENDIX A – DEFINITION OF TERMS .....	40
APPENDIX B – DEFINITION/ STATEMENT OF SIGNIFICANCE .....	41
APPENDIX C – SIGNIFICANCE AND FIELD RATING.....	42
APPENDIX D – PROTECTION OF HERITAGE RESOURCES.....	43
APPENDIX E – HERITAGE MANAGEMENT IMPACT ASSESSMENT PHASES.....	44

## 1. INTRODUCTION

Archaetnos cc was appointed by Savannah Environmental (Pty) Ltd to conduct a cultural heritage assessment study for the proposed construction of a 132kV overhead power line and switchyard station for the authorised Solis Power I CSP Project. This is situated on the farm Van Roois Vley and Erf 1080 close to Upington in the Northern Cape Province. The proposed project is located approximately 25 km west of the town of Upington and approximately 26 km north the town of Keimoes, within the Kai !Garib and //Khara Hais Local Municipalities (Figure 1-5).

Solis Power I (Pty) Ltd received environmental authorization in July 2013 for the 150MW CSP Facility (DEA Ref no. 14/12/20/16/3/3/3/82 as amended in March 2014, November 2015 and December 2015).

Solis Power I (Pty) Ltd is now proposing to construct a 132kV overhead power line which will connect the proposed Kalksloot switchyard station to be located within the authorised Solis Power I facility footprint to the Eskom's Upington MTS Substation.

This will entail the construction of approximately 20 km of new power line. In order to connect the Solis Power I Facility to the grid, an on-site switchyard station is required to be constructed within the facility's authorised footprint. This is due to Eskom's new requirements in the project's Cost Estimate Letter for a self-build option by the developer. Following completion of construction and commissioning, this infrastructure will be transferred to Eskom for ownership and operation.

The proposed development for which application is made therefore entails the following:

- The construction of the 132kV overhead power line (approximately 20 km in length)
- The construction of an on-site switchyard station (Kalksloot), within the 900 ha Solis Power I Footprint, with a maximum footprint of approximately 100m x 100m

A 300m wide corridor is being investigated for the siting of the proposed route of the power line. Two alternative locations have been provided for the switchyard station, Alternative A and Alternative AA.

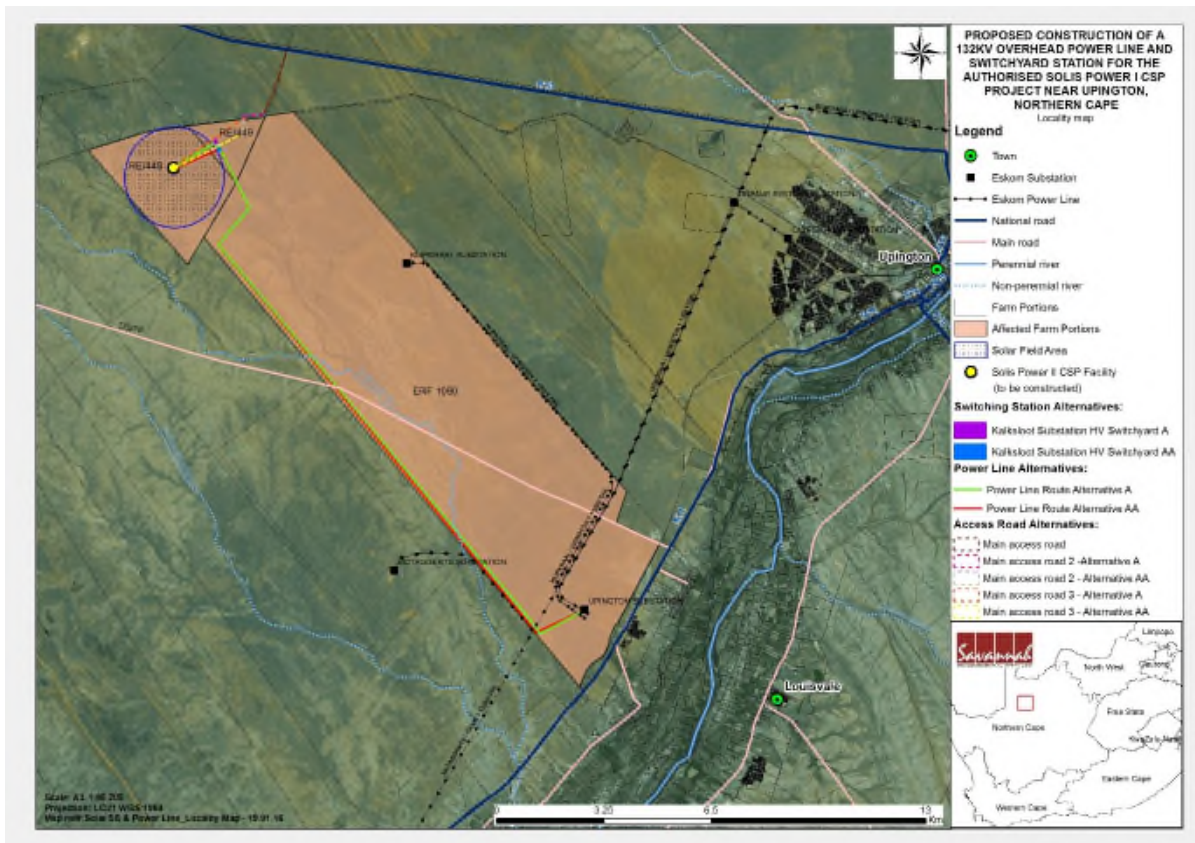
The client indicated the area where the proposed development is to take place. No physical survey was carried out, since the entire area was already surveyed on previous occasions during 2012 and 2014 as was a Phase II mitigation study done in 2013 (see Van Vollenhoven 2012; Van Vollenhoven 2013; Van Vollenhoven 2014; Gaigher 2012). These studies covered the entire area needed for the current study, as indicated above.



**Figure 1: Location of the town of Upington in the Northern Cape Province.  
North reference is to the top.**



**Figure 2: Location of the site in relation to Upington. North reference is to the top.**

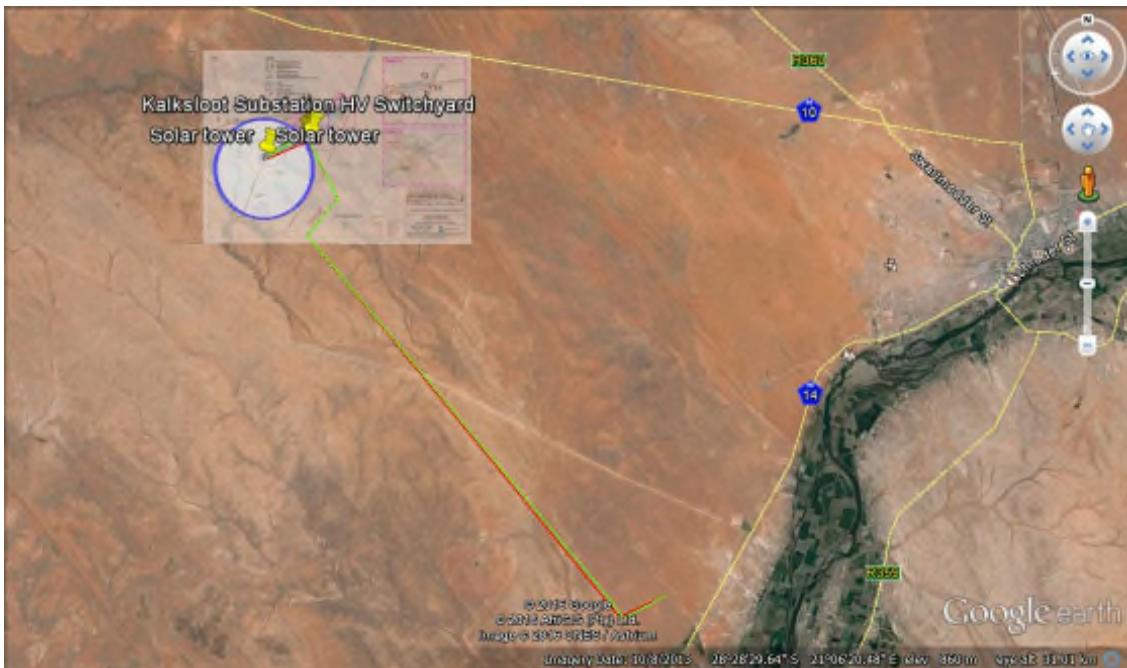


**Figure 3: Location of the project close to Uptington.**



**Figure 4: Plan of the CSP site indicating the switching station development.**





**Figure 5: Plan of the CSP site indicating the power line options.**

## **2. TERMS OF REFERENCE**

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 (see Appendix A).
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).
- Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.
- Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.
- Review applicable legislative requirements.

### **3. CONDITIONS & ASSUMPTIONS**

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

- Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity (Appendix A). These include all sites, structure and artefacts 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 artefacts 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 (see Appendix C).
- 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.
- All recommendations are made with full cognizance of the relevant legislation.
- It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might occur. In this particular case the area was very large and the vegetation cover in certain sections reasonably dense, making archaeological visibility difficult.

### **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:

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

The National Estate (see Appendix D) includes the following:

- Places, buildings, structures and equipment of cultural significance
- Places to which oral traditions are attached or which are associated with living heritage
- Historical settlements and townscapes
- Landscapes and features of cultural significance
- Geological sites of scientific or cultural importance
- Archaeological and paleontological importance
- Graves and burial grounds
- Sites of significance relating to the history of slavery
- 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. A Palaeontological Impact Assessment only looks at the palaeontology in an area.

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

- The construction of a linear development (road, wall, power line canal etc.) exceeding 300m in length
- The construction of a bridge or similar structure exceeding 50m in length
- 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

- Re-zoning of a site exceeding 10 000 m<sup>2</sup>
- 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):

- Destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- Destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- 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
- 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.
- 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:

- Ancestral graves

- Royal graves and graves of traditional leaders
- Graves of victims of conflict
- Graves designated by the Minister
- Historical graves and cemeteries
- 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:

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

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

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

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

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

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

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

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

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

## **5. METHODOLOGY**

### **5.1 Survey of literature**

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

### **5.2 Field survey**

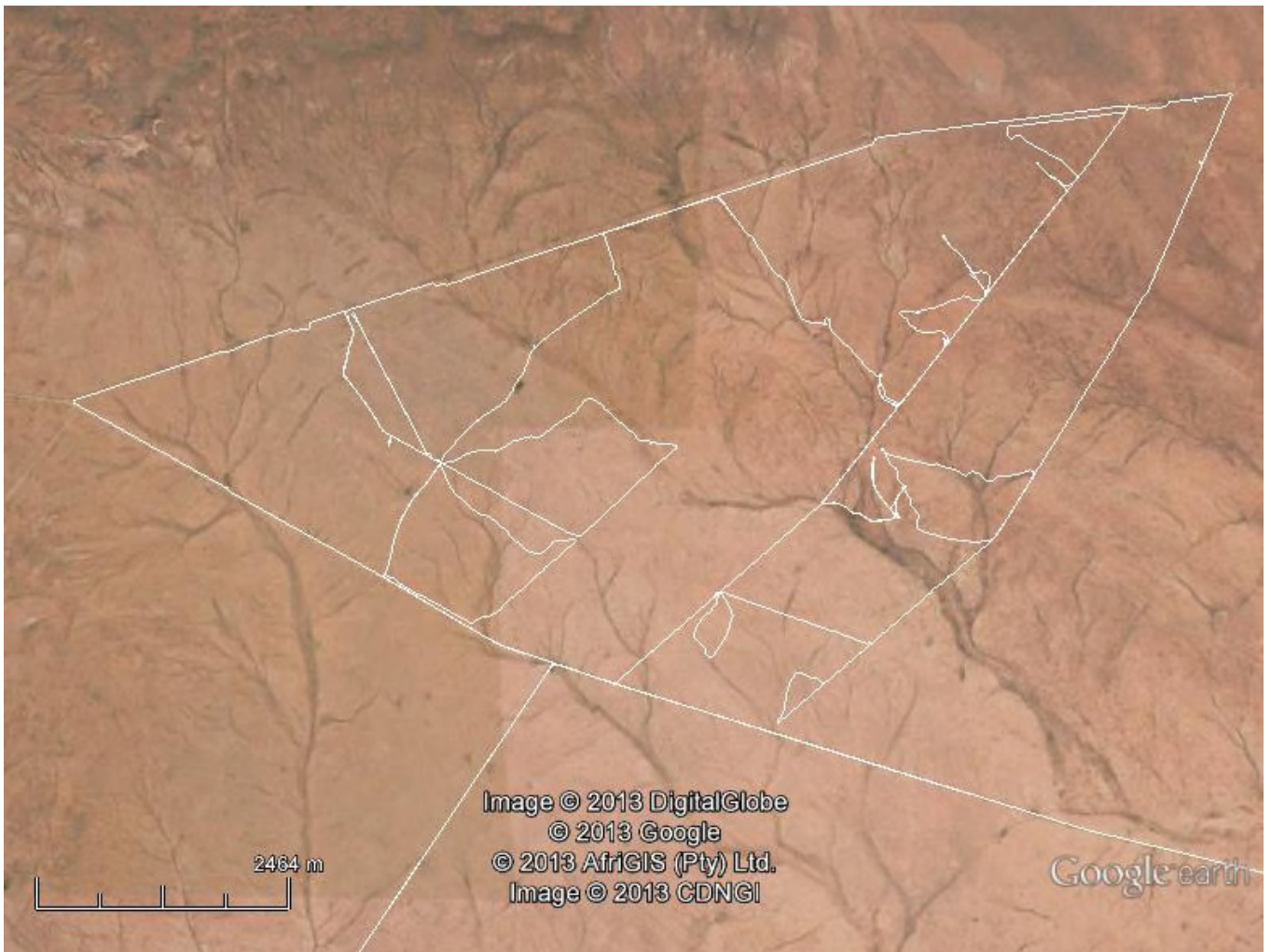
As detailed previously in this report, no survey was done for this report due to the area being extensively surveyed in the past. These surveys were done according to generally accepted HIA practices and were aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development. If required, the location/position of any site was determined by means of a Global Positioning System (GPS)<sup>1</sup>, while photographs were also taken where needed.

The surveys were undertaken by a physical survey via off-road vehicle and on foot. However, during May 2012 no track route was made since it was in a time before that was required.<sup>2</sup> The track route indicated here (Figure 6) is that of the 2013 survey, but the 2012 survey covered a larger area, towards the north and south of what is indicated here. It includes the development of the Solis 1 Project. Gaigher (2012) also surveyed a section of the proposed development, namely the corridor where the power lines are to be placed.

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

<sup>2</sup> Track routes only became compulsory in September 2012.



**Figure 6: Track route of the 2013 survey. It needs to be noted that the same area was surveyed in May 2012, before track routes were requested. The route for the 2012 survey overlaps with that of the 2013 survey, but also included additional locations, mainly towards the north and south.**

### **5.3 Oral histories**

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

### **5.4 Documentation**

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

## **5.5 Evaluation of Heritage sites**

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

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

## **6. DESCRIPTION OF THE AREA**

The area that was surveyed is situated between approximately 30 and 50 km to the north-west of the town of Upington in the Northern Cape Province. It comprises the Remainder and portions 448 and 449 of the farm Van Roois Vley as well as Erf 1080.

The environment of the area is mostly undisturbed although it is being used for sheep farming. The dominant plant species is grass which was reasonably high in certain areas during the survey making archaeological visibility difficult. However, in certain other areas the vegetation cover was less and patches of sand and loose stones visible (Figure 7-8).

The natural topography in most of the surveyed area is reasonably flat, but in the north-west and just outside of the project boundary, a hill dominates the area resulting in an even slope up to the crest. This area also is very rocky. The stones here are dark in colour and may be of a basaltic origin. However in the flat areas adjacent to the hill the rocks are white coloured and most likely are soft calcrete, which would not have been suitable for the manufacture of stone tools.

A number of non-perennial streams run through the area, but during the time of the survey these were no more than sandy river beds. It does not make much of a difference in the topography.

Erf 1080 is adjacent to the Orange River. It runs in a north-eastern direction towards Van Rooisvley, where the solar plant is proposed and will be the area where the proposed power line will be constructed. Here signs of agricultural activities were noted.





**Figure 7: General view of vegetation in the surveyed area.**



**Figure 8: Another view of the surveyed area showing longer grass cover.**

## **7. HISTORICAL CONTEXT**

During the survey various features of cultural heritage significance were located in the area. It is difficult to call these 'sites' due to the lack of vast amounts of cultural material found at each location. One can however do a broad categorization and relative dating (see below). The significance will however be explained below where each 'site' is described.

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

### **7.1 Stone Age**

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

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

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

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 (Archaetnos database). On the farm Konkooksies 91 in the Pofadder district, five sites with Middle and Late Stone Age tools were identified (Pelser 2011).

Late Stone Age tools were identified on the corridor for the powerline, but these were not indicated as being a site (Gaigher 2012). It therefore confirms the findings that many Stone Age material are to be found in the area.

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 sites are most likely to also be found at Van Roois Vley. This was indeed the case, as will be discussed later (Section 8).

Rock engraving (rock pecking) sites are known from Beeshoek and Bruce (Morris 2005: 3; Snyman 2000: 3). The latter are associated with the Late Stone Age.

Similar rock peckings were indeed found on the farm Van Roois Vley, but these are on the portion of the farm to the west of the provincial road and these will not be affected by the development as it falls outside of the project area. On these rocks, found in a dry river bed, different animals and geometrical figures are depicted. It includes different depictions of giraffes, an aardvark and animals that could not be identified due to the state of preservation of the peckings (Figure 9-11).

From the above mentioned it is clear that Stone Age people did utilize the area by settling in it. Many Middle and Late Stone Age features were indeed identified during the survey (see section 8 and Van Vollenhoven 2012; 2013 and 2014).



**Figure 9: Rock pecking of an aardvark.**



**Figure 10: Rock pecking of two giraffes.**



**Figure 11: Rock pecking showing a geometrical figure (perhaps a picture of a footprint).**

### **7.1 Iron Age**

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

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

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

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

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.

## 7.2 Historical Age

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

Due to factors such as population growth and a decrease in mortality rates, more people inhabited the country during the recent historical past. Therefore and because less time has passed, much more cultural heritage resources from this era have been left on the landscape.

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

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, travellers, 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 *Difaquane* 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 centred 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 Gariiep area was inhabited by the Nama, Bondelswarts, Afrikaners, Koranna and the Griqua. These people utilized the islands in the Orange (Gariiep) 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).

In the 1880's a former slave, Abraham Holbors September, was granted a farm in this region. He established the first irrigation system from the Orange River (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 Olyfenhoutsdrift 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).

During the Rebellion of 1914 (some Afrikaner people against the Government's plan to invade German South-west Africa) a number of people camped on the farm Van Roois Vley. Here, under a camel thorn tree, General Manie Maritz announced his intentions to join the rebellion (Personal communication: A. Vlok). The tree and site (the Rebellion tree) is a declared Provincial Heritage site. It is situated on the farm Van Roois Vley, but on the portion not to be affected by the development (Figure 12).

One of the rebels, Willem Hendrik Strauss died here. He was originally buried under one of the other trees at the camp site, but his body was exhumed and he was reburied at the Rebellion tree (Personal communication: A. Vlok). The headstone has fallen down and is broken, but it still is legible (Figure 13-14).

One may therefore find sites and features associated with the early white farmers in the area. This would include houses, farm infrastructure and graves.



**Figure 12: The Rebellion tree. The bronze plaque of the former National Monuments Council, which provided information on the site, had unfortunately been removed. The tree is also struggling and the farmer, Mr. Vlok is regularly giving it water in order to keep it from dying.**



**Figure 13: Headstone of the grave of Willem Hendrik Strauss.**





**Figure 14: Close-up view of the headstone.**

## **8. DISCUSSION OF SITES AND FEATURES IDENTIFIED DURING THE SURVEY, POTENTIAL IMPACT, MITIGATION AND MANAGEMENT MEASURES**

Sites identified during the 2012 survey in the area are included as the survey was done in the same geographical area. An additional four sites were identified during 2013 making the total 38 sites.

Gaigher also did a survey in the area, specifically concentrating on the proposed Eskom power line. He did identify Late Stone Age tools, but these were not indicated as being a site (Gaigher 21012). Other sites identified by him were not on the corridor for the proposed power line or plant area and therefore is not included here.

It should be noted that some of these sites are outside of the project boundary. It is however included for sake of completeness.

### **8.1 Site 1**

This is a recent historical site that was used for residential purposes. It contains a large refuse midden with indication of material dating back to at least the 1920's. This includes glass, porcelain and metal artefacts. Other features on site include a pile of bricks which seem much more recent (1960's) as well as artefacts scattered over an area of about 50 m in diameter (Figure 15).

GPS: 28°26.945'S  
21°00.142'E



**Figure 15: The refuse midden at site no. 1.**

The permanent settlement of the farm is on the western side of the road. This could therefore only be a non-permanent settlement area, perhaps used by the first farmer before building a house or by some of the farm workers. The site is regarded as having a **low** cultural significance. It therefore is of a general significance and is given a rating of Grade C (IVC).

This report is seen as ample mitigation as the site is outside of the larger CSP project boundary.

## **8.2 Stone Age features (numbers 2-37)**

A total number of 36 features mostly dating to the Middle Stone Age were identified. Some artefacts from the Early and Late Stone Age were also identified in between. This varies between scatters of stones with only a few stone tools in between to others with a reasonable number of stone tools. It needs to be indicated that none of these had such a large number of stone tools that one would call it a site. The tools identified mostly consist of waste flakes, cores and scrapers (Figure 16-19).

The following sites falls outside of the project boundary: 11, 12, 13, 14, 24, 25, 26, 27, 28, 35, 36 and 37.

The following sites falls inside of the project boundary: 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 23, 29, 30, 31, 32, 33 and 34.

Eleven of the sites (no. 5, 9, 15, 16, 18, 27, 29, 30, 31, 32 and 33) were mitigated during a phase II project (SAHRA Permit Id: 271). Except for site no 27, all the others are inside of the project boundary. According to the specialist analysis most of the tools were made from quartzite and siliceous material, with a few from granite (see Van Vollenhoven & Van Ryneveld 2013).



**Figure 16: Middle Stone Age artefacts found in the surveyed area.**



**Figure 17: Middle and Late Stone Age artefacts from the surveyed area.**



**Figure 18: Late Stone Age artefacts from the Van Roois Vley. Note the shiny material of the one at the top.**



**Figure 19: More Late Stone Age artefacts from the surveyed area. Again note the shiny material of the two artefacts on the top left.**

GPS co-ordinates (see Figure 21-23):

<b>Site no.</b>	<b>GPS Coordinates</b>	<b>Remarks</b>
2	28°26.770'S 21°00.953'E	Inside CSP development area
3	28°26.811'S 21°00.189'E	Inside CSP development area
4	28°26.973'S 21°00.151'E	Inside CSP development area
5	28°26.600'S 21°00.065'E	Inside CSP development area & mitigated
6	28°26.240'S 21°00.277'E	Inside CSP development area
7	28°26.107'S 21°00.386'E	Inside CSP development area
8	28°25.978'S 21°00.503'E	Inside CSP development area
9	28°26.617'S 21°01.064'E	Inside CSP development area & mitigated
10	28°25.062'S 21°02.023'E	Inside CSP development area
11	28°25.757'S 20°58.344'E	Outside CSP development area
12	28°26.049'S 20°57.919'E	Outside CSP development area
13	28°25.287'S 20°59.107'E	Outside CSP development area
14	28°25.432'S 20°59.233'E	Outside CSP development area
15	28°25.709'S 20°59.477'E	Inside CSP development area & mitigated
16	28°25.777'S 20°59.495'E	Inside CSP development area & mitigated
17	28°25.826'S 20°59.492'E	Inside CSP development area
18	28°25.926'S 20°59.722'E	Inside CSP development area & mitigated
19	28°26.213'S 21°00.038'E	Inside CSP development area
20	28°24.747'S 21°01.402'E	Inside CSP development area
21	28°24.882'S 21°00.622'E	Inside CSP development area
22	28°24.868'S 21°00.401'E	Inside CSP development area
23	28°25.053'S 20°59.644'E	Inside CSP development area
24	28°27.018'S 20°57.118'E	Outside CSP development area
25	28°26.460'S 20°57.579'E	Outside CSP development area
26	28°25.606'S 20°56.114'E	Outside CSP development area
27	28°27.444'S 20°59.129'E	Outside CSP development area & mitigated

Site no.	GPS Coordinates	Remarks
28	28°27.802'S 20°59.524'E	Outside CSP development area
29	28°25.666'S 21°00.607'E	Inside CSP development area & mitigated
30	28°25.171'S 21°00.976'E	Inside CSP development area & mitigated
31	28°25.770'S 21°00.588'E	Inside CSP development area & mitigated
32	28°25.853'S 21°00.304'E	Inside CSP development area & mitigated
33	28°26.009'S 21°00.427'E	Inside CSP development area & mitigated
34	28°26.937'S 20°59.697'E	Inside CSP development area
35	28°26.571'S 20°57.059'E	Outside CSP development area
36	28°26.614'S 20°57.700'E	Outside CSP development area
37	28°26.570'S 20°58.649'E	Outside CSP development area

Most of the areas where the Stone Age artefacts have been found will not be impacted, but some will. It was therefore recommended during the 2012 survey that a collection of surface material be made all over the farm before development may continue and that this be reported on to SAHRA. This was approved and a permit was obtained from SAHRA for this purpose. The collection of artefacts was done during 2013 (see Van Vollenhoven & Van Ryneveld 2013).

The conclusion of the mitigation report was that the Stone Age material is regarded as having a **low** cultural significance. There are a reasonably large number of lithic tools in the area making it less unique. It is of local significance and is given a SAHRA grade IIIC field rating as it has no further research potential (see Appendix C). It should be included in the heritage register and may be destroyed during the development activities on the site.

Therefore, although some sites identified falls within the current development and were not mitigated (see table above), it would not be necessary. Some sites within the current development area (see table above) were however mitigated in 2013. Additional mitigation is therefore unnecessary.

### 8.3 Site 38

This is the remains of a graveyard containing at least 35 graves (Figure 20). The site is in a very bad state. All the graves are stone packed, some with stone headstones and some without any headstones. A few much rusted metal crosses lies around on site.

No legible information is available. The farmer indicated that these graves were already here when he came to the farm during the early 1950's (Personal communication: A. Vlok). This means that graves are likely older than 60 years and that only one of the three categories of graves are present being those older than 60 years, called heritage graves. Even if it is regarded as graves with an unknown date of death, it should still be handled as those older than 60 years.

GPS: 28°24.709'S  
21°02.009'E

Due to the sensitivity of this issue, graves are always regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a field rating of Grade IIIB. It may therefore be mitigated.



**Figure 20: Some of the graves at site no. 38.**

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

The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. However, in order to be allowed to do this, a motivation needs to be submitted to SAHRA. If this is allowed and before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved. Unknown graves are handled similarly to heritage graves.

The graves are right on the edge of the farm boundary at an area where a camp is being proposed. These will however not be impacted on by the proposed switchyard station and the proposed power line since the graves are within the footprint of the proposed camp site and not within the footprint of the mentioned development. Therefore impacts of cultural significance due to the proposed switchyard station and powerline are low.

There will therefore be a direct impact. Currently and should it not be possible to move the camp site, the impact will be direct and option 2 will have to be implemented.

Should it be possible to move this camp, option 1 will come into play as there always is a secondary impact due to the possibility of access control that could make it difficult for descendants to visit these graves. Also, it needs to be ensured that the site do not deteriorate any further. Should it therefore be possible to move the camp site, option 1 is recommended. It means that the site should be left *in situ*. It should then be fenced in and a conservation management plan for the sustainable preservation and management thereof should be drafted and implemented.

## 9. IMPACT ASSESSMENT TABLES

**Site 1 – No impact; no mitigation required.**

### Site 2-37 – Stone Age sites

<b>Nature: Any earthworks</b>		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Low (1)	Low (1)
<b>Duration</b>	Permanent (5)	Permanent (5)
<b>Magnitude</b>	Low (4)	Small (0)
<b>Probability</b>	Highly Probable (4)	Probable (3)
<b>Significance</b>	<b>40 (Medium)</b>	<b>18 (Low)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Low	Low
<b>Irreplaceable loss of resources?</b>	Yes	Yes
<b>Can impacts be mitigated?</b>	Yes	
<b>Mitigation:</b> Phase II study, collection of stone tools was already done		
<b>Cumulative impacts:</b> None		
<b>Residual Impacts:</b> None		

Measures for inclusion in the draft Environmental Management Programme:

OBJECTIVE: None, since mitigation was already done in the past

<b>Project component/s</b>	All earthwork activities
<b>Potential Impact</b>	None, since mitigation was already done
<b>Activity/risk source</b>	None, since mitigation was already done
<b>Mitigation: Target/Objective</b>	None, since mitigation was already done

**Mitigation: Action/control**

**Responsibility**

**Timeframe**



None, since mitigation was already done	-	-
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<b>Performance Indicator</b>	-
<b>Monitoring</b>	-

**Site 38 – Graves**

<b>Nature: Any earthworks/ camp site</b>		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Low (1)	Low (1)
<b>Duration</b>	Permanent (5)	Permanent (5)
<b>Magnitude</b>	High (10)	Small (0)
<b>Probability</b>	Highly Probable (4)	Improbable (2)
<b>Significance</b>	<b>64 (High)</b>	<b>12 (Low)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Low	Low
<b>Irreplaceable loss of resources?</b>	Yes	Yes
<b>Can impacts be mitigated?</b>	Yes	
<b>Mitigation:</b> Move camp site and write management plan for graves. If not possible, relocation of graves.		
<b>Cumulative impacts:</b> None		
<b>Residual Impacts:</b> None		

Measures for inclusion in the draft Environmental Management Programme:

<b>OBJECTIVE:</b> Move camp site and write management plan for graves. If not possible, relocation of graves.	
<b>Project component/s</b>	All earthwork activities/ camp site
<b>Potential Impact</b>	Graves can be damaged/ destroyed
<b>Activity/risk source</b>	All earthwork activities/ camp site
<b>Mitigation: Target/Objective</b>	Move camp site and write management plan for graves. If not possible, relocation of graves.

<b>Mitigation: Action/control</b>	<b>Responsibility</b>	<b>Timeframe</b>
Move camp site and write management plan for graves. If not possible, relocation of graves.	Project coordinator to plan new camp site.	Before commencement of project

	Heritage specialist to draw up management plan or arrange relocation
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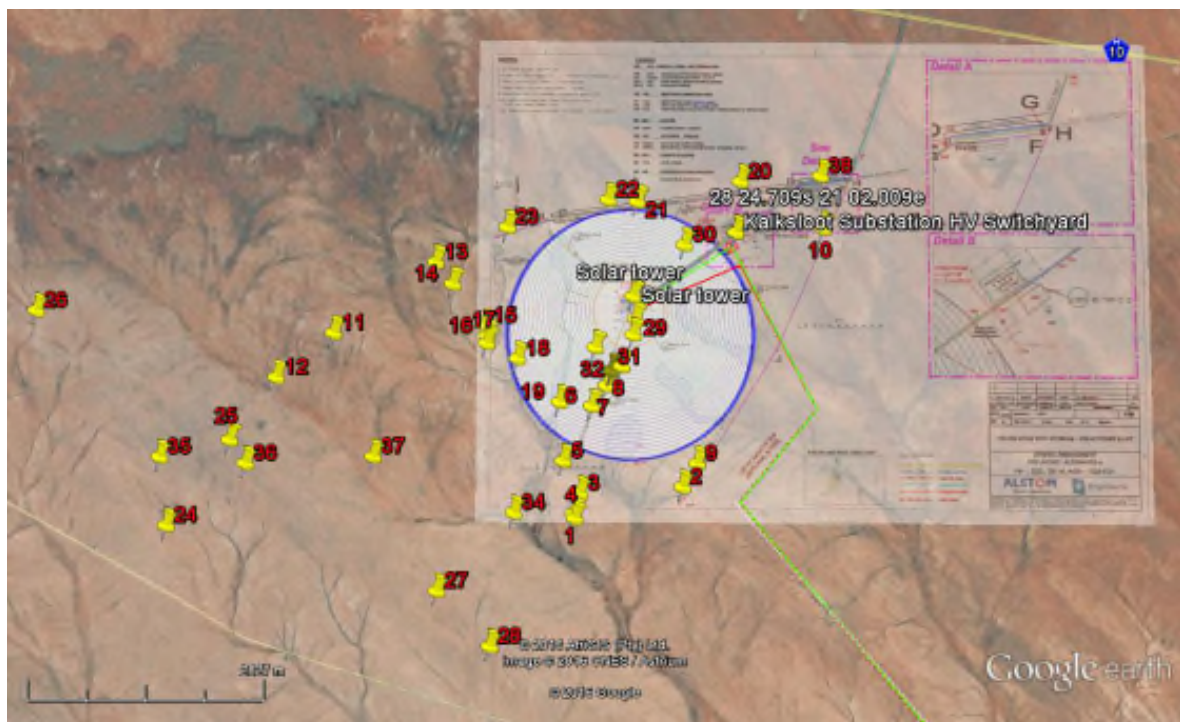
<b>Performance Indicator</b>	Completion of SAHRA report on management plan or relocation of graves
<b>Monitoring</b>	SAHRA Approval

## 10. CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the assessment of the area was conducted successfully. Two sites from the Historical Age and 36 Stone Age occurrences were identified (Figure 21). A nearby historical site (the Rebellion tree) and another Stone Age site (rock peckings) were also identified although outside of the area to be affected.

During the 2012 survey, the farmer, Mr. Ampie Vlok, who has resided on the farm for more than 40 years, indicated that he does not know of any graves or other historical and prehistorical features on the portion of the farm that was surveyed. It was indicated in the conclusion of that report that one should always be cautious of such statements as people tend to forget. This was indeed the case as a grave site was indeed now identified.

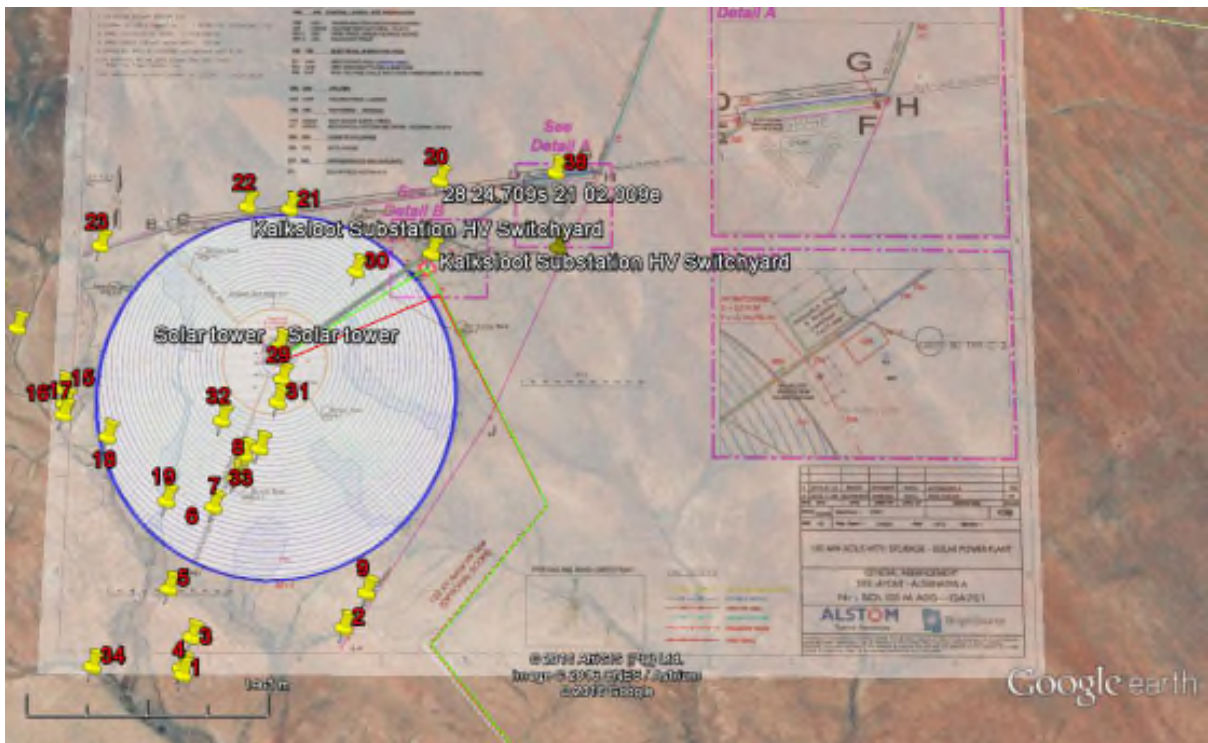
However grave sites will not be impacted on by the proposed switchyard station and the proposed power line since the graves are within the footprint of the proposed camp site and not within the footprint of the mentioned development. Therefore impacts of cultural significance due to the proposed switchyard station and powerline are low.



**Figure 21: Google Earth image of the GPS points of the sites and features identified during the survey as well as the project boundary. North reference is to the top.**

Key:

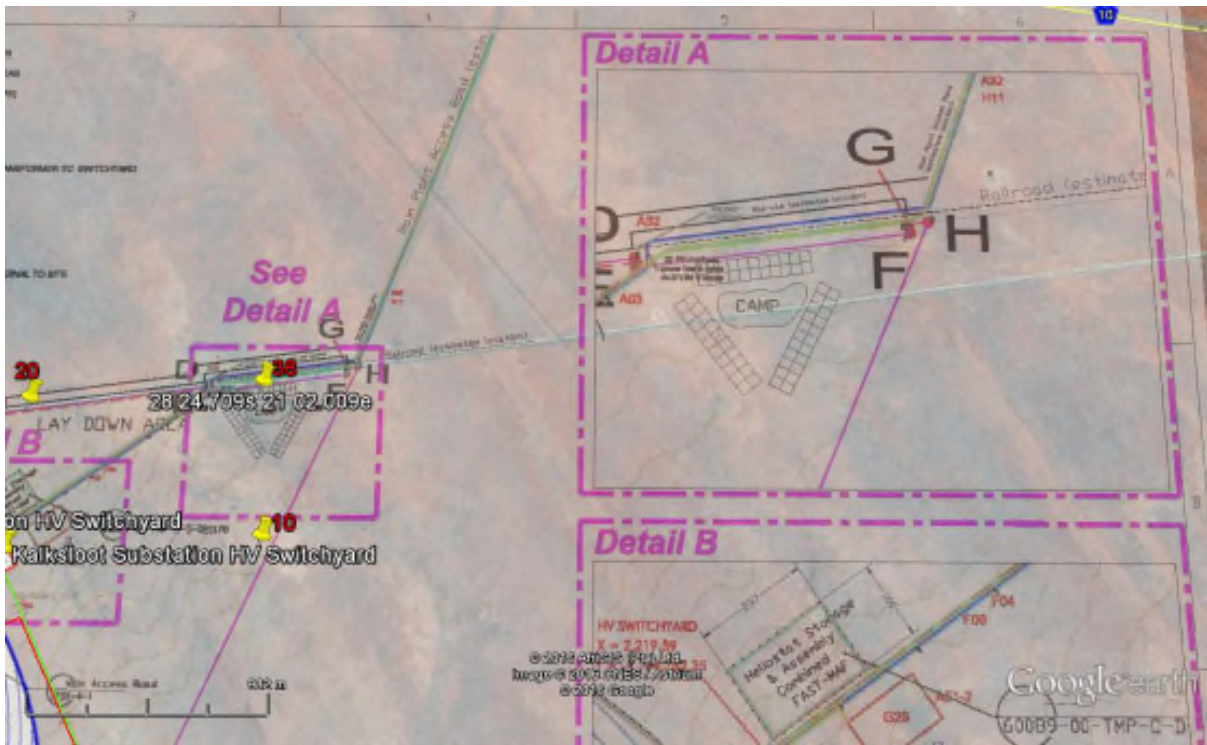
- 1 – Historical site
- 2–37 – Stone Age occurrences
- 38 – Grave site



**Figure 22: Google Earth image indicating the sites identified within the project boundary. No sites were found along the proposed power line routes (red and green lines)**

Key:

- 1 – Historical site
- 2–37 – Stone Age occurrences
- 38 – Grave site



**Figure 23: Google Earth image indicating site no. 38 (a grave yard) where a camp is being proposed.**

The final recommendations are as follows:

- Site number 1 (historical residential site) is outside of the project boundary. It is therefore recommended that the site be left as it is and no mitigation is necessary
- Due to the fact that eleven of the many Stone Age features have been mitigated during 2013, no further mitigation is required. The features may be demolished during the development on site. A permit in this regard is needed from SAHRA.
- The grave site (no. 38) is in an area where a camp is being proposed however the grave site will not be impacted on by the proposed switchyard station and the proposed power line since the graves are within the footprint of the proposed camp site and not within the footprint of the mentioned development. Therefore impacts of cultural significance due to the proposed switchyard station and powerline are low.

During pre-construction of the camp the following must be considered:

- There are two options when dealing with graves.
- The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a development comes into operation.
- The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. However, in order to be allowed to do this, a motivation needs to be submitted to SAHRA. If this is

allowed and before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved. Unknown graves are handled similarly to heritage graves.

- The graves will be impacted on directly.
- It is recommended that the camp be moved to another location so that the graves would not be impacted on directly.
- Should it be possible to move this camp, option 1 will come into play as there always is a secondary impact due to the possibility of access control that could make it difficult for descendants to visit these graves. Also, it needs to be ensured that the site do not deteriorate any further. Should it therefore be possible to move the camp site, option 1 is recommended. It means that the site should be left *in situ*. It should then be fenced in and a conservation management plan for the sustainable preservation and management thereof should be drafted and implemented.
- However should it not be possible to move the camp site, the impact will be direct and option 2 will have to be implemented.
- The development may only continue after completion of the mitigation measures proposed.
- It should be remembered that due to the factors indicated in the report, it is possible that all cultural sites may not have been identified. Also the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. Care should therefore be taken when development work commences that, if any more artifacts are uncovered, a qualified archaeologist be called in to investigate. This basically means stopping all work at that specific point and getting advice from an archaeologist before any work may proceed.

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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).

Midden: Heap of soil intermixed with cultural material

(Also see Knudson 1978: 20).



## APPENDIX B

### DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

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

## APPENDIX C

### SIGNIFICANCE AND FIELD RATING:

#### Cultural significance:

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

#### Heritage significance:

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

#### Field ratings:

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

## **APPENDIX D**

### **PROTECTION OF HERITAGE RESOURCES:**

#### **Formal protection:**

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

Protected areas - an area surrounding a heritage site

Provisional protection – for a maximum period of two years

Heritage registers – listing grades II and III

Heritage areas – areas with more than one heritage site included

Heritage objects – e.g. archaeological, paleontological, 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, paleontology and meteorites

Burial grounds and graves

Public monuments and memorials

## **APPENDIX E**

### **HERITAGE IMPACT ASSESSMENT PHASES**

- Pre-assessment or scoping phase – establishment of the scope of the project and terms of reference.
- Baseline assessment – establishment of a broad framework of the potential heritage of an area.
- Phase I impact assessment – identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
- Letter of recommendation for exemption – if there is no likelihood that any sites will be impacted.
- 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.
- Phase III management plan – for rare cases where sites are so important that development cannot be allowed.