

Archaeological Impact Assessment

For the proposed Steynsrus (15MW) photovoltaic plant, Free State Province

Prepared For
Savannah Environmental (Pty) Ltd

By



HERITAGE

Contracts and Archaeological Consulting

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1 Nov 2013

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I, Jaco van der Walt as duly authorised representative of Heritage Contracts and Archaeological Consulting CC, hereby confirm my independence as a specialist and declare that neither I nor the Heritage Contracts and Archaeological Consulting CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which the client was appointed as Environmental Assessment practitioner, other than fair remuneration for work performed on this project.



SIGNATURE:

EXECUTIVE SUMMARY

Site name and location: SunCorp, an independent Power Producer (IPP), is proposing to establish a commercial photovoltaic solar energy facility as well as associated infrastructure on a site located approximately 5 km north-west of Steynsrus next to the R76 route in the Free State Province. PV1 and PV2 were assessed as per figure 1- 3.

Purpose of the study: Phase 1 Archaeological Impact Assessment to determine the presence of cultural heritage sites and the impact of the proposed project on these resources within the areas demarcated for the solar development.

1:50 000 Topographic Map: 2727 DC

EIA Consultant: Savannah Environmental (Pty) Ltd

Developer: SunCorp

Heritage Consultant: Heritage Contracts and Archaeological Consulting CC (HCAC).

Contact person: Jaco van der Walt **Tel:** +27 82 373 8491

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Date of Report: 11 June 2013, Amended 1 November 2013

Findings of the Assessment:

This report endeavoured to give an account of the history of the Steynsrus area in the Free State Province. The general history of human settlement in the Steynsrus area was discussed. Finally, all available information on the area was taken into account to write up a short history of the developments that had taken place there.

Six sites of heritage significance were identified during the survey consisting of:

- The demolished remains of two residential dwellings (Site 2 and 3) and the foundations of a rectangular cattle kraal (Site 1) associated with the residential complex.
- Site 4 is a large farm labourer compound setup.
- Site 5 consists of approximately 23 stone packed graves and
- Site 6 consists of three stone cairns roughly aligned east to west that might represent graves.

None of the documented sites are in close proximity to the proposed development and no direct impact is foreseen on the recorded sites.

From an archaeological point of view, there is no reason why the development cannot commence work (based on approval from SAHRA), if the developers adhere to the recommendations made under Section 7 of this report.

If any possible finds such as tool scatters, bone or fossil remains are exposed or noticed during construction, the operations must be stopped and a qualified archaeologist must be contacted to assess the find.

General

The possible occurrence of unmarked or informal graves and subsurface finds can thus not be excluded. If during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find.

Disclaimer: *Although all possible care is taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. Heritage Contracts and Archaeological Consulting CC and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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- The results of the project;
- The technology described in any report;
- Recommendations delivered to the Client.

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ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

1 BACKGROUND INFORMATION

<i>Kind of study</i>	Archaeological Impact Assessment
<i>Type of development</i>	Photovoltaic solar energy facilities
<i>Rezoning/subdivision of land</i>	Rezoning
<i>Developer:</i>	SunCorp
<i>Consultant:</i>	Savannah Environmental
<i>Farm owner:</i>	Boy Saaiman

Heritage Contracts and Archaeological Consulting CC has been contracted by Savannah Environmental (Pty) Ltd to conduct an Archaeological Impact Assessment for the proposed commercial photovoltaic solar energy facility as well as associated infrastructure on the farm Arbeid 2154 and the Farm Weltevrede 2151.

The study area is located approximately 4 km north west of Steynsrus in the Free State Province. The topography of the area is flat and the farm is used for grazing. A 132Kv power line and railway track runs roughly from east to west through the property.

The Archaeological Impact Assessment report forms part of the Basic Assessment (BA) for the proposed project.

The aim of the study is to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, a background study that includes collection from various sources and consultations; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey six heritage sites were identified. General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to SAHRA for review.

1.1 Terms of Reference

Field study

Conduct a field study to: a) systematically survey the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points of identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with the relevant legislation and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

1.2. Archaeological Legislation and Best Practice

Phase 1 of an AIA or a HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a heritage specialist input is to:

- » Identify any heritage resources, which may be affected;
- » Assess the nature and degree of significance of such resources;
- » Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- » Assess the negative and positive impact of the development on these resources;
- » Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 38(1), Section 38(8) of the NEMA and the MPRDA.

The AIA should be submitted, as part of the EIA, BIA or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and additional development information, as per the EIA, BIA/EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA.

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level).

Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is a legal body, based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIAs are primarily concerned with the location and identification of sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation

recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation of a site, a destruction permit must be applied for from SAHRA by the client before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5] of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare.

Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

1.3 Description of Study Area

1.3.1 Location Data

The study area is located approximately 4 km north west of Steynsrus in the Free State Province (Figure 1). The topography of the area is relatively flat and the farm is currently used for grazing and crop farming. A 132Kv power line and railway line runs roughly from east to west through the property.

The study area falls within the bioregion described by Mucina *et al* (2006) as a Grassland Biome and the vegetation type is classified as Central Free State Grassland. Land use in the general area is characterized by agriculture, dominated by cattle and crop farming. The study area is characterised by deep sandy to loamy soils.

1.3.2. Location Map

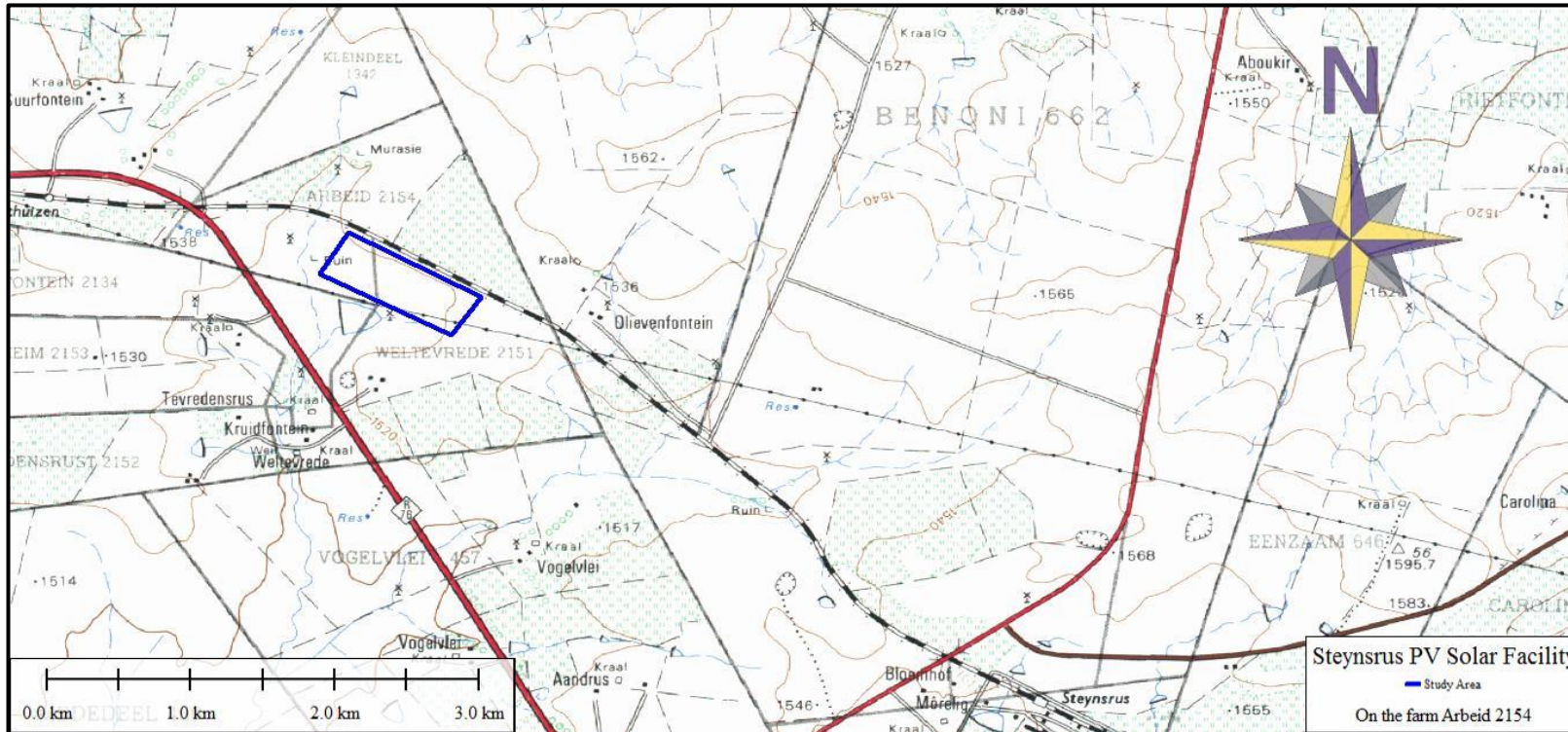


Figure 1: locality Map

The project will commence in two phases (Figure 2-3).

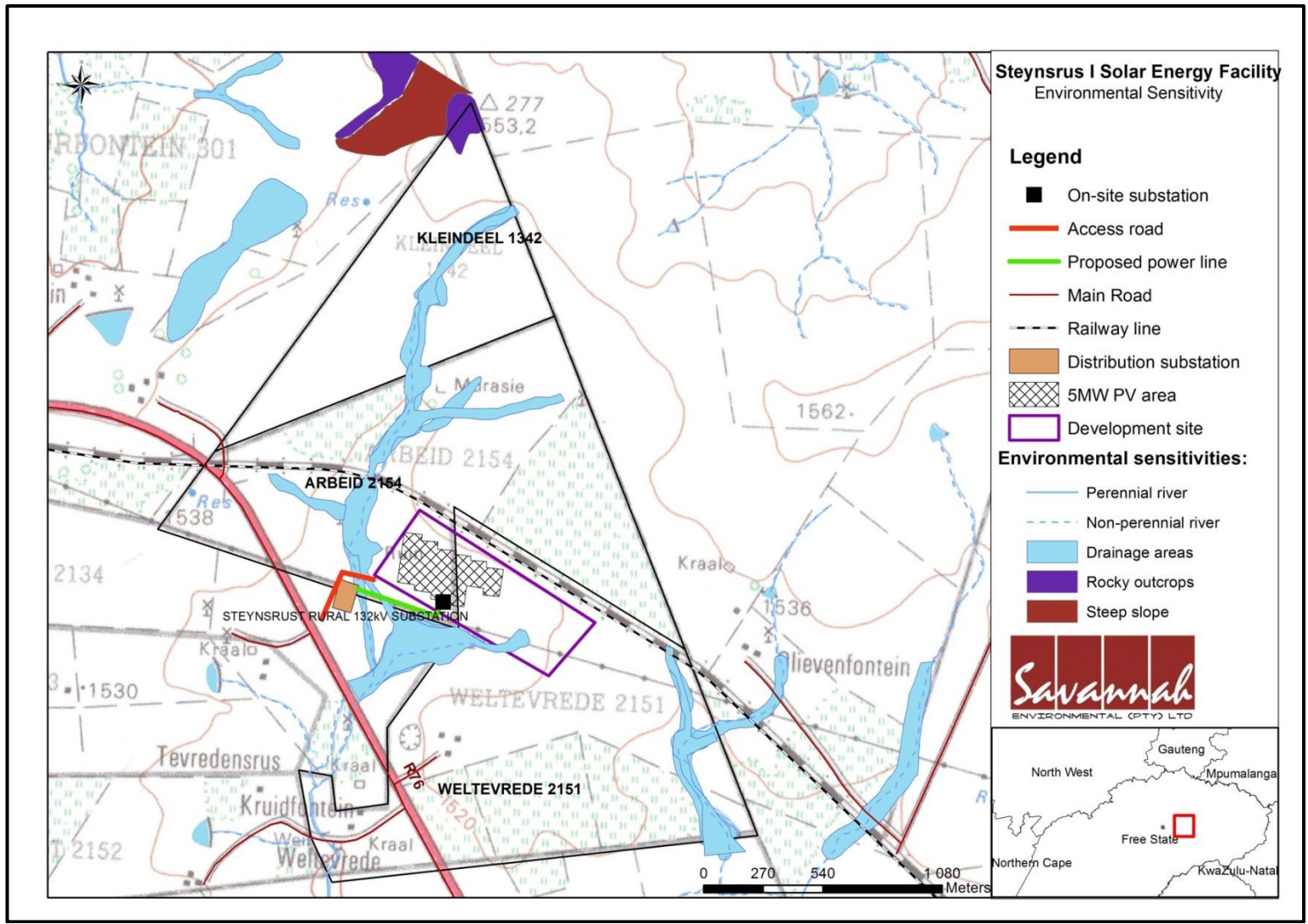


Figure 2. PV option 1.

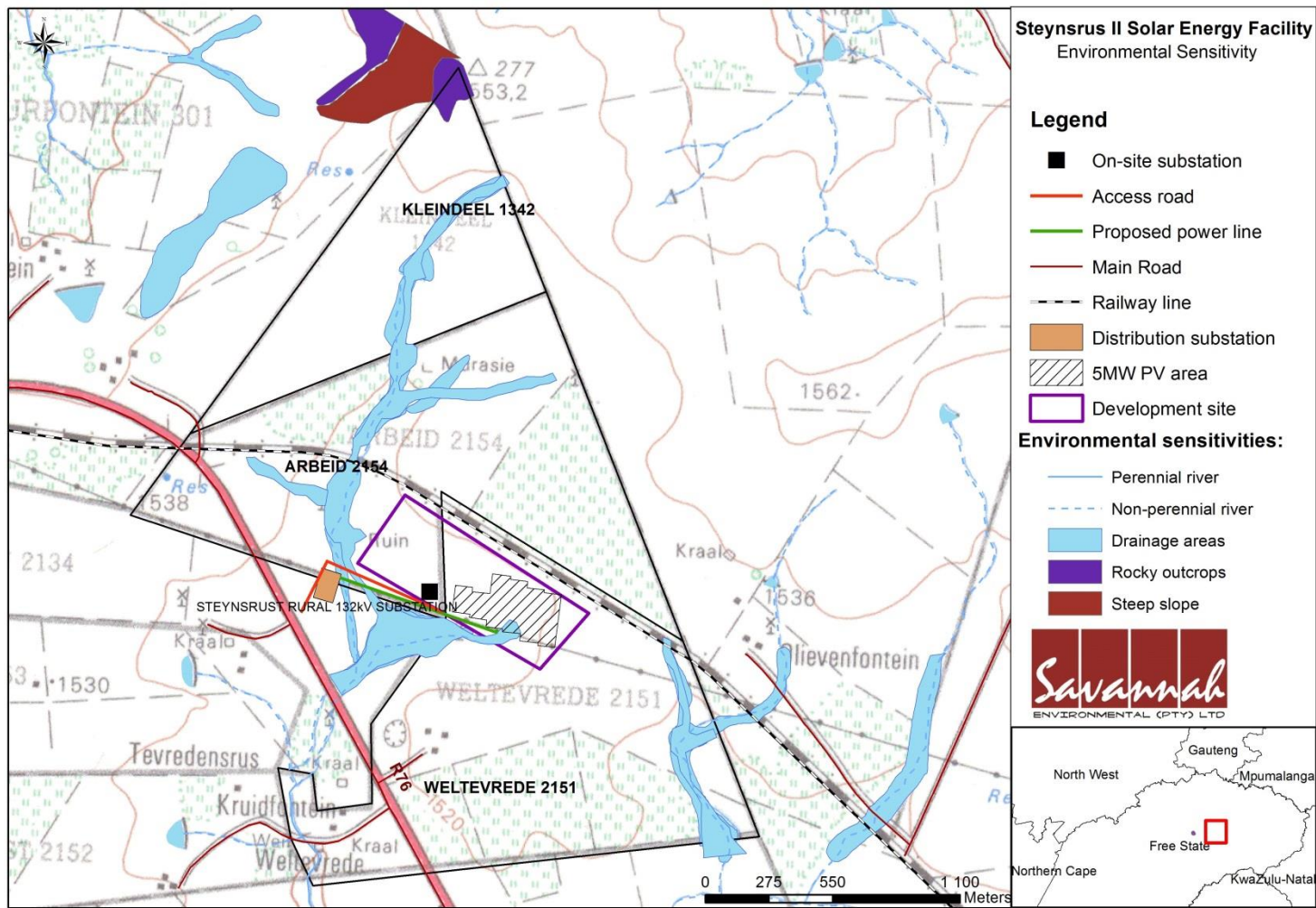


Figure 3 PV Option 2

1.3.3. Google Maps



Figure 4: Google Image showing the study area in blue and track log of the areas that were covered during the survey.

2. APPROACH AND METHODOLOGY

The aim of the study is to cover archaeological databases and historical sources to compile a background history of the study area followed by field verification; this was accomplished by means of the following phases (the results are represented in section 4 of this report).

2.1 Phase 1 - Desktop Study

The first phase comprised a desktop study, gathering data to compile a background history of the area in question. It included scanning existing records for archaeological and historical sites in the area.

2.1.1 Literature Search

Utilising data for information gathering stored in the archaeological database at Wits, previous CRM reports done in the area and a search in the National archives. The aim of this is to extract data and information on the area in question, looking at archaeological sites, historical sites and graves of the area.

2.1.2 Information Collection

The SAHRA report mapping project (Version 1.0) and SAHRIS was consulted to collect data from previously conducted CRM projects in the region to provide a comprehensive account of the history of the study area.

2.1.3 Consultation

Heritage Contracts and Archaeological Consulting CC conducted brief consultations with the farm owner Mr Boy Saaiman.

2.1.4 Google Earth and Mapping Survey

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located.

2.1.5 Genealogical Society of South Africa

The database of the Genealogical Society was consulted to collect data on any known graves in the area.

2.2 Phase 2 - Physical Surveying

A field survey of the study area measuring approximately 20 ha was conducted; focusing on drainage lines, hills and outcrops, high lying areas and disturbances in the topography. The study area was surveyed by means of vehicle and extensive surveys on foot by professional archaeologists on the 7 December 2012.

All sites discovered inside the proposed development area was plotted on 1:50 000 maps and their GPS co-ordinates noted. Digital photographs were taken at all the sites.

2.3. Restrictions

Due to the fact that most cultural remains may occur below surface, the possibility exists that some features or artefacts may not have been discovered/ recorded during the survey. Only the surface infrastructure footprint areas were surveyed as indicated in the location map, and not the entire farm. This study did not assess the impact on the palaeontological component of the project. Although Heritage Contracts and Archaeological Consulting CC surveyed the area as thoroughly as possible, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.

3 NATURE OF THE DEVELOPMENT

The Solar Power Plant (PV 1 and PV 2) is proposed to accommodate the following infrastructure:

- » Photovoltaic (PV) panels with an installed capacity of up to **19.5MW**.
- » A on-site substation and overhead power line/s connecting to existing the Steynsrus Rural 132kV substation;
- » Mounting structures (either rammed steel piles or piles with pre-manufactured concrete footings to support the PV panels);
- » Cabling between the project components, to be lain underground where practical;
- » Internal access roads;
- » Fencing and
- » Workshop area for maintenance, storage and offices.

4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA

4.1 Databases Consulted

Wits Archaeological Data Bases

No previously recorded sites are on record for the study area at the Wits database.

SAHRA Report Mapping Project

The SAHRA report mapping project and SAHRIS has no sites on record close to the study area. Only one study was conducted to the east of the proposed PV facility by J Dreyer (2008) in Steynsrus. He found no archaeological or cultural material on site.

Genealogical Society and Google Earth Monuments

Neither the Genealogical Society nor the monuments database at Google Earth (Google Earth also include some archaeological sites and historical battlefields) have any recorded sites in the study area.

Public Consultation

The farm owner Mr Boy Saaiman was consulted regarding the presence of any heritage and archaeological sites. He is not aware of any sites or burials within the development footprint although he is aware of graves on other portions of the farm.

4.2 Archaeological and Historical Information Available on the Study Area

The report has been divided into a number of sections that will focus on the following aspects:

- General history of human settlement in the area
- The development of the town Steynsrus

4.2.1. Historiography And Methodology

It was necessary to use a range of sources in order to give an account of the history of the area. Sources included secondary source material, primary sources, maps, and online sources. This study should be viewed only as an introduction to the history of the Steynsrus area.

The following documents, kept at the National Archives of South Africa, may be of value if a more comprehensive study of the Steynsrus area is done in the future.

DEPOT SAB
SR/SN 000/00
SOURCE JUS
TYPE LEER
VOLUME_NO 984
SYSTEM 01
REFERENCE 21/244
PART 4
DESCRIPTION **STEYNSRUS** INSPECTION REPORTS.
STARTING 1950
ENDING 1956

DEPOT SAB
SOURCE NTS
TYPE LEER
VOLUME_NO 4703
SYSTEM 01
REFERENCE 159/313A
PART 1
DESCRIPTION LICENSING OF OFFICERS. **STEYNSRUS** MUNICIPALITY.
STARTING 1924
ENDING 1960

DEPOT SAB
SOURCE NTS
TYPE LEER
VOLUME_NO 5529
SYSTEM 01
REFERENCE 159/313H
PART 1
DESCRIPTION **STEYNSRUS** MUNICIPALITY. VERSLAG OOR INSPEKSIE VAN
 LOKASIE.
STARTING 1944
ENDING 1956

DEPOT SAB
SOURCE VWN
TYPE LEER
VOLUME_NO 330
SYSTEM 01
REFERENCE SW50/6/1-46
PART 1
DESCRIPTION STATISTICS. CHILDRENS ACT. ORANGE FREE STATE
 MAGISTRATE. **STEYNSRUS.**
STARTING 1950
ENDING 1961

DEPOT SAB
SOURCE DCD
TYPE LEER
VOLUME_NO 503
SYSTEM 01
REFERENCE 14/1/1/1/1/2568
PART 2
DESCRIPTION BEHUISING. HULPVERLENING. BEHUISINGSFONDS.
 VOORSKOTTE AAN PLAASLIKE BESTURE. ROETINE NAVRAE. **STEYNSRUS.**
STARTING 19840000
ENDING 19840000

DEPOT SAB
SOURCE DCD
TYPE LEER

VOLUME_NO 513
SYSTEM 01
REFERENCE 14/1/1/1/2/1/2568
PART 1
DESCRIPTION BEHUISING. HULPVERLENING. BEHUISINGSFONDS.
 VOORSKOTTE AAN PLAASLIKE
 BESTURE. TOEWYSING VAN FONDSE. BLANK. **STEYNSRUS.**
STARTING 19840000
ENDING 19840000

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 3/1150
SYSTEM 01
REFERENCE A5/1/3/1/S58
PART 1
DESCRIPTION OPGAWES, VERSLAE, STATISTIEK. BEHUISINGSOPGAWES.
STEYNSRUS.
STARTING 19750000
ENDING 19760000

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 3/1999
SYSTEM 00
REFERENCE A6/5/2/S58
PART 1
DESCRIPTION RASSESTREEKSBEPLANNING. STEDELIKE SWART
 WOONGEBIEDE. **STEYNSRUS.**
STARTING 19750000
ENDING 19780000

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 3/1999
SYSTEM 00
REFERENCE A6/5/2/S58
PART 2
DESCRIPTION RASSESTREEKSBEPLANNING. STEDELIKE SWART
 WOONGEBIEDE. **STEYNSRUS.**
STARTING 19780000
ENDING 19820000

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 3/2000
SYSTEM 00
REFERENCE A6/5/2/S58
PART 3
DESCRIPTION RASSESTREEKSBEPLANNING. STEDELIKE SWART
 WOONGEBIEDE. **STEYNSRUS.**
STARTING 19820000
ENDING 19820000

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 3/2380

SYSTEM 01
REFERENCE A6/6/2/S58
PART 1
DESCRIPTION SAMEWERKING EN ONTWIKKELING.
 RASSESTREEKSBEPLANNING. STEDELIKE SWART BEHUISING. VOORSIENING VAN
 BEHUISING. **STEYNSRUS.**
STARTING 19790000
ENDING 19850000

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 3/2443
SYSTEM 01
REFERENCE A6/6/4/S58
PART 1
DESCRIPTION SAMEWERKING EN ONTWIKKELING.
 RASSESTREEKSBEPLANNING. STEDELIKE SWARTBEHUISING. OORDRAG VAN PERSELE.
STEYNSRUS.
STARTING 19780000
ENDING 19790000

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 3/2944
SYSTEM 01
REFERENCE A7/6/2/S58
PART 1
DESCRIPTION SEGREGASIE. MAGTIGING VIR SWARTHANDEL IN
 VOORGESKREWE GEBIEDE.
 EETHUIS. PW BROWN. PERSEEL 361. **STEYNSRUS.**
STARTING 19770000
ENDING 19770000

DEPOT SAB
SOURCE RLA
TYPE LEER
VOLUME_NO 1055
SYSTEM 01
REFERENCE 20/5/S37/1
PART 1
DESCRIPTION FISIESE BEPLANNING. FISIESE AANGELEENTHEDE RAKENDE
 INDIVIDUELE STEDE, DORPE EN PLEKKE. **STEYNSRUS.** INWIN, VERWERKING EN
 VERSTREKKING VAN INLIGTING.
STARTING 19840000
ENDING 19840000

DEPOT SAB
SR/SN 000/00
SOURCE VWN
TYPE LEER
VOLUME_NO 3001
SYSTEM 01
REFERENCE SWP43/273
PART 1
DESCRIPTION TEHUIS VIR BEJAARDES. **STEYNSRUS.**
STARTING 1963
ENDING 1964
REMARKS NEW NO 51/6/6-62.

DEPOT SAB
SOURCE SPT
TYPE LEERS
VOLUME_NO 63
SYSTEM 01
REFERENCE 1/6/529
PART 1
DESCRIPTION BESKERMING EN AFSPRAKE. **STEYNSRUS:** AMPTELIKE
 INGEBRUIKNEMING VAN LANDDROSKANTOOR EN HOFSAAL.
STARTING 1965
ENDING 1965
REMARKS OU NOMMER (GG) 6/1115.

DEPOT SAB
SOURCE BEP
TYPE LEER
VOLUME_NO 515
SYSTEM 01
REFERENCE G7/583/2
PART 1
DESCRIPTION AANSOEK OM 'N GROEPSGEBIED IN **STEYNSRUS**
 BANTOEWOONGEBIED.
STARTING 19570000
ENDING 19630000

DEPOT SAB
SOURCE PMG
TYPE LEER
VOLUME_NO 264
SYSTEM 01
REFERENCE 5A5C/6505/63
PART 1
DESCRIPTION OPRIGTING VAN 'N GARAGE EN DIE AANBRING VAN 'N
 VEILIGHEIDSHEINING TE **STEYNSRUS.**
STARTING 19621211
ENDING 19640123

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 897
SYSTEM 01
REFERENCE A10/1643
PART 1
DESCRIPTION KERKE **STEYNSRUS.**
STARTING 19620623
ENDING 19730208

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 944
SYSTEM 01
REFERENCE A11/1643
PART 1
DESCRIPTION SKOLE **STEYNSRUS.**
STARTING 00000000
ENDING 00000000
REMARKS GEEN KORRESPONDENSIE NIE.

DEPOT SAB
SOURCE BAO

TYPE LEER
VOLUME_NO 2610
SYSTEM 01
REFERENCE C31/3/1527/90
PART 1
DESCRIPTION ENKELKWARTIERE. SENTRAAL WESTELIKE KOOPERASIE
STEYNSRUS.
STARTING 19620925
ENDING 19731019

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 2958
SYSTEM 01
REFERENCE C39/7/1643
PART 1
DESCRIPTION VOORGESKREWE GEBIEDE **STEYNSRUS.**
STARTING 19650414
ENDING 19731019

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 7162
SYSTEM 01
REFERENCE P118/1643
PART 1
DESCRIPTION ONTSPANNINGSGERIEWE **STEYNSRUS** OVS.
STARTING 19570000
ENDING 19580000
REMARKS 159/313Y.

DEPOT SAB
SOURCE BAO
TYPE LEER
VOLUME_NO 8002
SYSTEM 01
REFERENCE V164/1643
PART 1
DESCRIPTION VESTIGING **STEYNSRUS.**
STARTING 19620615
ENDING 19691229

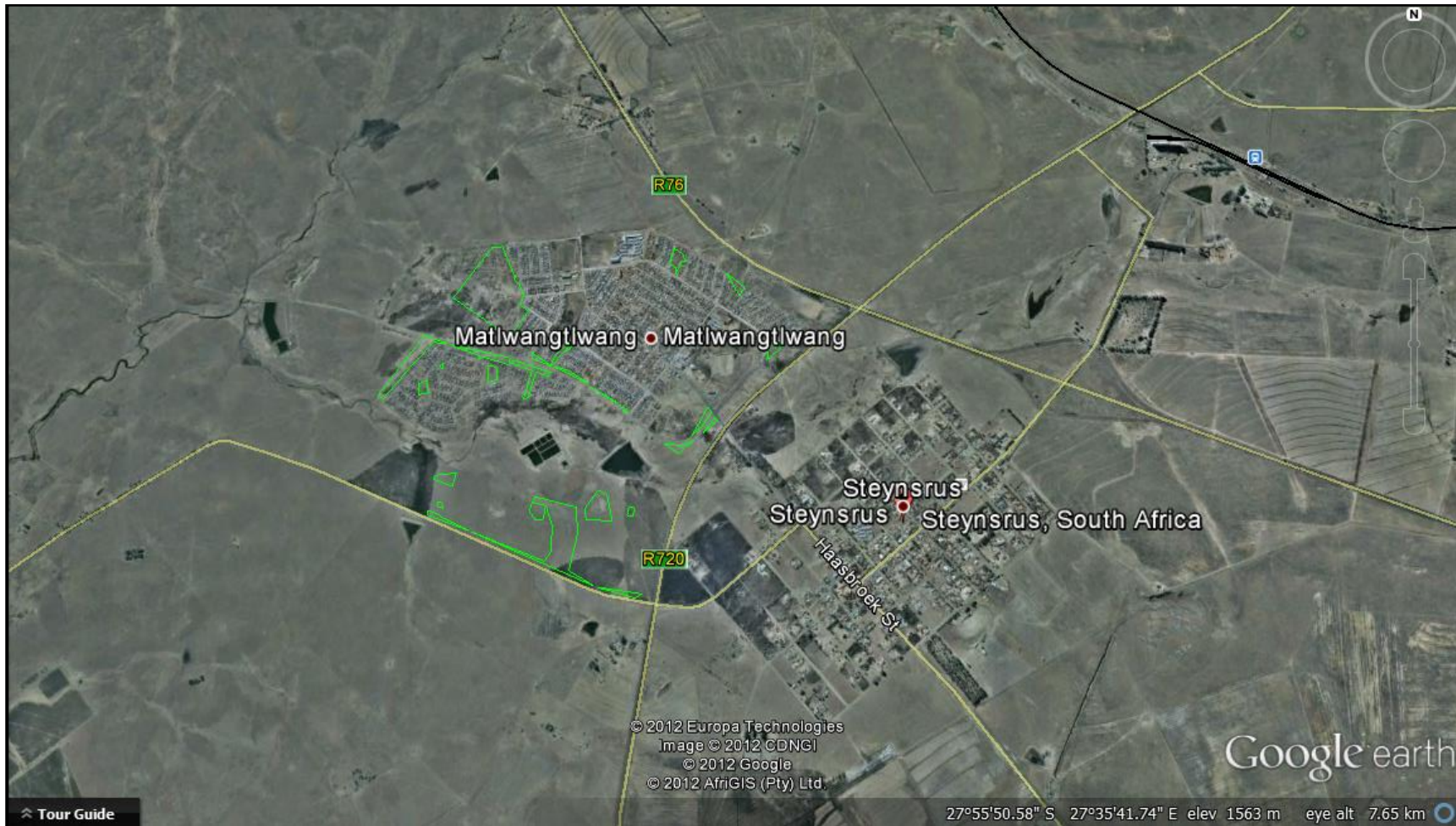


Figure 5: Google Earth Image showing the town of Steynsrus, as well as the adjoining township, Matlwangtlwang. (Google Earth 27°55'50.58"S 27°35'41.74"E elev 1563 m)

4.2.2. A Brief History Of Human Settlement And Black And White Interaction In The Steynsrus Area

In order to understand the history of an area, one should seek knowledge regarding its earliest inhabitants. In the *Social Dynamics* journal, some information is provided. According to this source, the Bushmen were the earliest inhabitants of the Caledon Valley (where Steynsrus is located). These people were aboriginal foragers, as well as hunters, and roamed the area for hundreds of years. Bantu-speaking tribes later moved into the area and the joined stress of white and black migration lead to the expulsion of the Bushmen from this area over time. It is noted that Steynsrus is located only a few kilometres from the ruins of a Mokubung 18th century corbelled stone settlement, carefully restored by the National Party government in the Willem Pretorius National Park. (Coplan 2008: 118, 130-131)

The first Europeans arrived in the Cape in 1652, and expansion to the north only started in the late 1820s. The Great Trek of 1837, as this northern movement of white people from the Cape Colony was called, resulted in a mass migration of white people into the northern areas of South Africa. (Ross 2002:39) The discovery of diamonds and gold in the northern provinces between 1867 and 1886 had very important consequences for South Africa. After the discovery of these resources, the British, who at the time had colonized the Cape and Natal, had intensions of expanding their territory into the northern Boer republics. This eventually led to the Anglo-Boer War, which took place between 1899 and 1902, and which was one of the most turbulent times in South Africa's history. Even before the outbreak of war in October 1899 British politicians, including Sir Alfred Milner and Mr. Chamberlain, had declared that should Britain's differences with the Z.A.R. result in violence, it would mean the end of republican independence. This decision was not immediately publicized, and as a consequence republican leaders based their assessment of British intentions on the more moderate public utterances of British leaders. Consequently, in March 1900, they asked Lord Salisbury to agree to peace on the basis of the status quo ante bellum. Salisbury's reply was, however, a clear statement of British war aims. (Du Preez 1977)

Some skirmishes took place on towns in the vicinity of where Steynsrus would be established in 1912. Kroonstad was one of these towns. On 12 March 1900, on the eve of the occupation of Bloemfontein by Lord Roberts, President M. T. Steyn declared Kroonstad the new capital of the Free State government. It simultaneously became the organizing center for retreating Boer commandos and a depot for stores of all kinds. It was also at Kroonstad that it was decided in March 1900 to abolish wagon laagers and to employ mounted commandos instead. This heralded a new method of warfare with increased mobility, which later became known as guerrilla warfare. Kroonstad remained the Free State capital until 11 May 1900, when the British were victorious at Zand River. Kroonstad remained in British hands for the rest of the war, and housed concentration camps for both Boer civilians and black people. (Pretorius 2010: 225-226)

Lindley is another town located close to where Steynsrus is today, and one of the very few successful Boer sieges during the war took place here. Spagge's Battalion of 500 men reached Lindley from Kroonstad on 27 May 1900. The battalion had covered 90 miles in three days and only had rations for two days. As they approached Lindley, the battalion came under heavy rifle fire from a group of Boers. During five days of fighting the British casualties came to 468. The British finally gave in when they realized they were completely surrounded, and became the prisoners of war of General Piet de Wet. (Pretorius 2010: 244-245)

Peace talks between the Boers and the British had started around April 1902, and culminated in the Peace of Vereeniging treaty on 31 May 1902. This event signalled the end of the Anglo-Boer War, as well as the temporary end of the Boer Republics' independence. (Geschiedenisatlas van Suid-Afrika 1999: 251)

Though segregation and apartheid would later be rife in South Africa, black and white relations were nonetheless at times also interdependent in nature. After the Great Trek, when white farmers had settled in various areas, wealthier farmers were often willing to lodge needy white families on their property in exchange for odd jobs and commando service. This *bywoner* often arrived with a family and a few cows. He would till the soil and pay a minimal rent to the farmer from the crops he grew. The farmer did not

consider him a laborer, but mostly kept black workers for hard labour on the farm. After the Anglo-Boer War, many families were left destitute. Post war years of severe droughts and locust plagues did not ameliorate this state of affairs. All of these factors resulted in what became known as the 'poor white problem'. On the advent of commercial farming in South Africa, white landowners soon found bywoners to be a financial burden, and many were evicted from farms. In many cases, wealthier landlords found it far more profitable to rent their land to blacks than to bywoners. This enabled them to create reservoirs of black labour (for which mine recruiting agencies were prepared to pay handsome commissions), while it was also possible to draw more rent from their black tenants. This practice was outlawed by the 1913 Natives Land Act, which forbade more than five black families from living on white farms as peasant squatters. (Readers Digest 1992: 329-332)

Today Steynsrus is located in the Fezile Dabi District in the Mqoqo Local Municipality in the Free State, South Africa. (Wikipedia 2012)

4.2.3. Historical Overview Of The Development Of The Area Under Investigation

Before the town of Steynsrus came into being, the small church at Lovat, in the area of the modern-day town, was known by that name. The name has its origins from an event that occurred during the Anglo-Boer War of 1899-1902. Shortly after the surrender of General Prinsloo, Marthinus Theunis Steyn, who would later become the President of the Free State, had to flee from the British troops. When he reached a farm by the name of Modderfontein, however, he stopped and rested for a short while in the shade of a willow tree. This spot was located on what would later be the northwestern border of the town Steynsrus. In 1985 this place was still marked by a monument that had been erected in honour of President Steyn. The following inscription could be read: "Hierdie klippe is deur feesgangers op 6 Mei 1966 tydens die Republiekfees gestapel op hierdie plek waar wyle Pres. M. T. Steyn met 'n deurtog tydens die Tweede Vryheidsoorlog (1899-1902) gerus het." (Burger 1985: 21)



Figure 6: The Steynsrus Monument. (Burger 1985: 159)

Another stirring occurrence took place in the Steynsrus area during the Anglo-Boer War. An article appeared in the *Die Burger* newspaper in 2000, and an account was given of a Bushman *agterryer* who followed the Assistant Field Marshall, one Jan Odendaal, into a battle about halfway between Steynsrus and Lindley. Odendaal was critically injured during the fight, and was left lying in the field. The Bushman man, who was commonly known as Gorrie, went back to the battlefield that night and found Odendaal's body. He carried him 4,8 kilometres to the farmhouse, where Odendaal's family members were given notice of his death. From then on, Gorrie was honoured by the Odendaal family as an old warrior of the Anglo-Boer War. (Steyl 2000: 2)

A number of events preceded the proclamation of the town Steynsrus in 1912. Since the beginning, the Afrikaans farming community and the Nederduitse Gereformeerde Kerk were key players in the establishment of the town. On 15 August 1910, the newly formed Church Council of the Steynsrus area had its first meeting. Present at the gathering on the farm Modderfontein were W. Deacon, J. L. Schoeman and C. A. Van Rensburg, and they discussed the necessity of the establishment of a town. This sudden interest in the proclamation of a town was prompted by an influx from "colonials" to the area after the Anglo-Boer War (1899-1902). The owner of Modderfontein, Mr. J. F. Haasbroek, and his neighbour from the farm Op-den-Tyd, Mr. I. W. Olivier, also implored the Government to consider the establishment of a town. Another farmer, one Hendrik Eksteen, attempted to move the process along by ceding a portion of land on his farm Grootkom to a trader, one Jacobsen, as well as erecting a small corrugated iron church on the land. The trading site later became known as "Lovatstasie". Eksteen believed that these developments would improve the likeliness of the development of a farm on his property, and pointed out that the large dam on his farm would provide a sufficient source of water for a town. (Burger 1985: 12-13)

From the outset it was realized that outside help would be required to decide on which property the town would be established. A meeting, attended by interested parties and the Surveyor-General from Bloemfontein, was held under the fruit trees on the farm Modderfontein. The farms Lovat, Blesbokspruit, Modderfontein and Waterval-Boven had all been suggested as possible areas where the town could be established. It was eventually decided that the farm Modderfontein, owned by Mr. Haasbroek, would be most suitable. The measurement of stands began almost immediately, due to the dire need of housing in the area. Haasbroek however would not allow for the establishment of a town on his land without some financial security, should he suffer a loss due to the development. In the end there were 14 members of the community who offered to stand surety. In the original agreement between Haasbroek and these individuals, it was noted that the farms Modderfontein, Eenzaam and a certain 260 morgen of the farm Op-den-Tyd, together measuring 1100 morgen, would be proclaimed as a town called "Steynsrust". It was furthermore noted that this town would comprise of 450 lots that had been approved by the Surveyor-General at the time. 100 of these lots would be sold for £30 per lot, 150 lots for £20 and the rest for £15 per lot. It should however be noted that the community members who stood surety for the land were allowed to buy a lot each for the price of £10. On 11 November 1911 the first of these lots were sold at an auction to Max Rosin for the price of £130. This business lot was situated at the corner of Haasbroek and Van Riebeeck Street. The erection of residences started even before the official proclamation of Steynsrus. A large number of these homes were bought by bywoners who had moved from the farms. Several of the houses were small and inexpensive. (Burger 1985: 13-15)

Steynsrus was officially proclaimed as a town on 20 June 1912, and managed to receive municipal status from the outset. This was due to the fact that the town already had five flourishing businesses and 300 white inhabitants at the time. The members of the first Town Council was Mr. D. P. Papenfus, a lawyer (Mayor); Mr. P. C. Oosthuizen Jnr., a miller (Vice-Mayor); Mr. C. S. Gane-Edley, the local Manager of the "Nasionale Bank"; Mr. M. Rosin, one of the first traders in the area; and Mr. G. C. J. Jordaan. The first Town Council was quite energetic in its efforts and soon acquired a loan of R8000 and purchased the farm Mededeel. The Council's first effort to establish postal, railway and police services in 1913 however failed, as the Minister noted that funds for these developments were not on hand at the time. (Burger 1985: 15-16)

Mr. P. C. Oosthuizen initially owned a mill on the farm Paardedrif, but purchased a property in the town area around the time of its proclamation. Oosthuizen immediately started erecting buildings and even sunk a borehole, but was later upset to learn that his lot fell outside the prescribed town area. It was later negotiated that this land would be proclaimed as part of Steynsrus. It was not long before the mill was again moved to the bottom end of Burnett-Adam Street in the town. The grains of the town and surrounds would long be grounded by this establishment, and the mill was still located in the same place by 1985. Apart from its obvious function, the mill also served another purpose. At 12:00 each day, a sharp whistle would be sounded at the mill, notifying all those in the surrounding area. (Burger 1985: 17-18)

The town would eventually consist of 432 lots and stretch over an area of 1100 morgen. Town lots measured 200 x 150 foot and business lots measured 75 x 150 foot. The remaining 965 morgen were divided into grazing camps where the town's inhabitants could keep their milk cows. Up until 1975, each camp had its own stall or milking kraal. Since 1975, the camps are only used by the municipality and sometimes for auctions. It seems that the water provision at Steynsrus would not forever remain sufficient, and after a number of boreholes had been sunk it was decided to build a dam and distribution system in 1925. Only in 1979 another water storage dam was built to the southeast of the town, this time larger and situated at a higher gradient. This was soon insufficient, and it was agreed that water would be pumped from Mr. J. C. Claassen's farm, Op-den-Tyd, to the town's storage dam. (Burger 1985: 18)

A residential area for black people was established at Steynsrus in 1913, and remained under the jurisdiction of the town's municipality until 1972, when the Oranje Vaal Administration Council took over. (Burger 1985: 18)

The first church in the Steynsrus area was established in 1911, and the opening ceremony was attended by President Steyn, who also laid the foundation stone. This church was able to seat 800 people and already had 774 members by August 1910. The building of this church was enabled by the generous donations of the local community. This stone was later removed and laid at the foot of a new church that was built in the town in the late 1920s. The following inscription can be seen thereon: "Immer is myn ziel stil tot God – Ps. 62 v 2. Gelegd door den Hoog Ed. President M. T. Steyn op 15 Nov. 1911." To fund the building of the new church, it was suggested that each of the church members would grant 2% of their grain and livestock to the church building fund. In 1929, a church organ with 682 pipes was imported from Liverpool and installed in the church. (Burger 1985: 18-19) (Martin 2012: 5)

Shortly after the establishment of the town, the establishment of a school became a priority. On 21 October 1912, the new school on the farm Modderfontein was opened. The school nearby on the farm Mededeel was closed and the pupils transferred to the Steynsrus School. Steynsrus' city hall was opened in 1929, and is still in use today. The town's library was opened on 19 June 1964, and fell under the jurisdiction of the Bloemfontein Provincial Administration. On 1 July 1958, electricity was first brought to Steynsrus, and was supplied by EVKOM since that time. In 1984 the town had its first modern waste removal system. (Burger 1985: 18-19)

The growth of Steynsrus was not without incident, and of interest is the effect of the Spanish flu epidemic of 1918. Shops were soon to close in the early afternoon and it was noted in the church register that the church was closed for five consecutive Sundays. The school was also closed early that year, on 21 October 1918, and only opened again on 22 January of the next year. During this time the school was utilized as a hospital, and since there was no qualified doctor in the town, the sick were treated by volunteers and a medical student by the name of Danie Papenfus. At least eight individuals died during November 1918, and the horse-drawn funeral carriage became a well-known sight. The flu also took its toll on the surrounding farms, though it is not known to what extent. (Burger 1985: 42)

The first cemetery at Steynsrus was established on the farm Modderfontein in 1912. This burial ground was located to the northwest and bordering on Steynsrus. Unfortunately, by 1985 only three of the original 20 graves were still identifiable. These belonged to Nicolaas Johannes Slabbert (12 May 1871 - 04 May 1917), Catharina Mynhardt (27 March 1910-September 1913) and a small girl with the surname Hamman. The church council of the time saw an urgent need for the establishment of a new cemetery,

and one was established in 1914. The earliest grave dates to 6 July 1914, and belongs to one Jacoba Haasbroek. In 1918, 286 trees were planted at the new cemetery.



Figure 7: The new Steynsrus cemetery. (Burger 1985: 103)

5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed PV Solar Facility the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposits;
- » 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/is known);
- » The preservation condition of the sites;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- » Its importance in/to the community, or pattern of South Africa's history;
- » Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- » Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- » Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- » Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;

- » Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- » Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- » Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;

Sites of significance relating to the history of slavery in South Africa.

5.1. Field Rating of Sites

Site significance classification standards prescribed by SAHRA (2006), and approved by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 9 of this report.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

5.2 Impact Rating of Assessment

The criteria below are used to establish the impact rating of a site. as provided by the client:

- » The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- » The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- » The **duration**, wherein it will be indicated whether:
 - * the lifetime of the impact will be of a very short duration (0-1 years), assigned a score of 1;
 - * the lifetime of the impact will be of a short duration (2-5 years), assigned a score of 2;
 - * medium-term (5-15 years), assigned a score of 3;
 - * long term (> 15 years), assigned a score of 4; or
 - * permanent, assigned a score of 5;
- » The **magnitude**, quantified on a scale from 0-10 where; 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- » The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1-5 where; 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- » The **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- » the **status**, which will be described as either positive, negative or neutral.
- » the degree to which the impact can be reversed.
- » the degree to which the impact may cause irreplaceable loss of resources.

the *degree* to which the impact can be mitigated.

The **significance** is calculated by combining the criteria in the following formula:

$$S = (E+D+M)P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- » < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- » 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- » > 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

Impacts that may result from the planning and design, construction, operational, decommissioning and closure phases as well as proposed management of identified impacts and proposed mitigation measures are summarised in the tables below for PV1 (sites 1-4) and also for sites 5 and 6 and for PV2 (sites 1 – 4) and also for site 5 and 6.

6. BASELINE STUDY-DESCRIPTION OF SITES

It is important to note that the entire farm Arbeid and Weltevrede was not surveyed in detail. The field survey focused on the footprint of the proposed PV layout area, power line for connection to the grid and access routes as indicated in Figure 1. The area around the proposed development was scanned to determine whether any important heritage features formed part of the greater area. During this scan 6 heritage sites were identified but none of these are close to the proposed PV layout area and no direct impact is foreseen on these sites.

6.1 Site Distribution Map

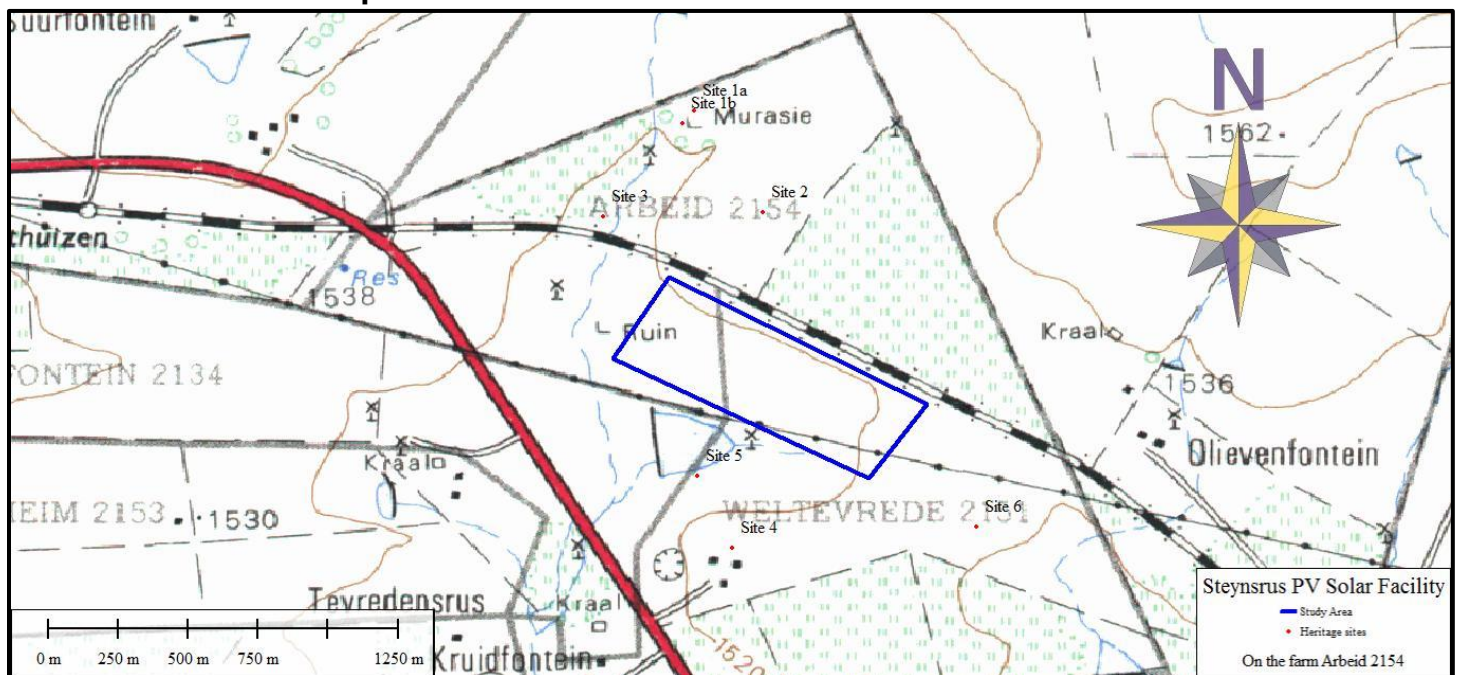


Figure 8: Showing the location of the identified sites in relation to the proposed PV panel options.



Figure 9. Site conditions in the Northern portion of the study area.



Figure 10. Site condition in the North Eastern portion of the study area.



Figure 11. Substation that power will feed into.



Figure 12. Site conditions in the south of the study area.

6.2. Sites with Coordinates

Site Number	Landscape	Type Site	Cultural Markers	Co ordinate
Site 1a	Archaeological and Cultural Heritage	Historic/recent	Rectangular stone wall foundations	S27 54 00.8 E27 32 25.5
Site 1b	Archaeological and Cultural Heritage	Historic/recent	Rectangular stone wall foundations	S27 54 02.3 E27 32 24.2
Site 2	Archaeological and Cultural Heritage	Historic/recent	Rectangular stone wall foundations	S27 54 12.6 E27 32 33.5
Site3	Archaeological and Cultural Heritage	Historic/recent	Sand stone buttress for bridge	S27 54 13.1 E27 32 15.0
Site 4	Archaeological and Cultural Heritage	Historic/recent	Mud brick dwellings	S27 54 51.3 E27 32 30.0
Site 5	Archaeological and Cultural Heritage	Graves	Stone packed graves	S27 54 43.0 E27 32 25.8
Site 6	Archaeological and Cultural Heritage	Possible graves	Stone cairns	S27 54 48.9 E27 32 58.2

6.3. Site Descriptions

6.3.1. Cattle Kraal and associated dwelling (Site 1), farm labourer dwelling (Site2) and old railway bridge (Site 3)

Site Number	Site 1, 2, 3 and Site 4	1:50 000 map nr	2727 DC
Site Data	Description:		
Type of site	Open site		
Site categories	Possible recent or historic dwellings and structures		
Context	<p>Site 1a & b consists of the rectangular stone foundations of a cattle kraal measuring 28x12 meters. Fifty eight meters to the south of the kraal is the associated stone foundations of a 2 room dwelling.</p> <p>Site 2 consists of the stone foundations of a small structure measuring 4x8 meter consisting of 2 rooms. The site is associated with farm labourer housing.</p> <p>Site 3 consists of sandstone buttresses on the old railway line marking a bridge/culvert.</p> <p>Site 4 is a large farm labourer compound setup. The site consists of ash middens with iron, plastic and glass household items scattered all over the site. Several dwellings are noted here all consisting of mud brick foundations.</p> <p>None of these sites are located close to the proposed PV layout. It must be kept in mind that sites like these might contain unmarked graves.</p>		
Cultural affinities, approximate age and significant features of the site;	Based on what's left of the structures, it is not possible to determine if the sites are older than 60 years. The scoping study also did not reveal the presence or the age of these structures. Site 1 and 4 are, however, indicated on the latest edition of the 1:50 000 map series of the area and is presumably more recent and not older than 60 years.		
Description of artefacts	Modern industrial artefacts, such as wire, glass and cans, are scattered over the site.		

Photographs



Figure 13: Southern view of Site 1a.



Figure 14: Northern view of ruin at Site 1b.



Figure 15: Rectangular foundation at Site 2.



Figure 16: Sandstone buttness at old railway line (Site 3).

Field Rating
(Recommended grading or field significance) of the site:

Generally Protected C

Statement of Significance (Heritage Value)

Low significance. Low -Medium Significance if the sites are older than 60 years.

Impact evaluation of the proposed project on heritage resources

Impact Evaluation for PV1 and PV2

Site 1 – 4

Nature: During the operation of the project an indirect visual impact is expected for the site.		
	Without mitigation	With mitigation
Extent	Local (1)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Medium (6)	Low (2)
Probability	Probable (1)	Probable (1)
Significance	12 (Low)	8 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation: The sites are located outside of the development footprint and no further action is necessary but some management actions might be necessary (Please refer to section 7).		
Cumulative impacts: Archaeological and cultural sites are non-renewable and impact on any archaeological context or material will be permanent and destructive.		
Residual Impacts: N.A		

Impact Summary - Site 1 – 4 PV1

Activity	Impact summary	Significance	Proposed mitigation
There is no Indirect or Direct impact on Site 1 -4 as it is located well outside of the development footprint.			
PLANNING AND DESIGN PHASE			
	Direct impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Indirect impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Cumulative impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
CONSTRUCTION PHASE			
	Direct impacts:		

Activity	Impact summary	Significance	Proposed mitigation
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Indirect impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Cumulative impacts:		
OPERATION PHASE	Direct impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Indirect impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Cumulative impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
DECOMMISSIONING AND CLOSURE PHASE	Direct impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Indirect impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Cumulative impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA

Impact Summary Site 1 – 4 PV2

Activity	Impact summary	Significance	Proposed mitigation
There is no Indirect or Direct impact on Site 1 -4 as it is outside the development footprint.			
PLANNING AND DESIGN PHASE			
<i>Direct impacts:</i>			
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
<i>Indirect impacts:</i>			
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
<i>Cumulative impacts:</i>			
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
CONSTRUCTION PHASE			
<i>Direct impacts:</i>			
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
<i>Indirect impacts:</i>			
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
<i>Cumulative impacts:</i>			
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
OPERATION PHASE			
<i>Direct impacts:</i>			
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
<i>Indirect impacts:</i>			
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
<i>Cumulative impacts:</i>			

Activity	Impact summary	Significance	Proposed mitigation
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
DECOMMISSIONING AND CLOSURE PHASE			
»	Direct impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Indirect impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Cumulative impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA

6.3.2. Informal cemetery (Site 5), possible graves (Site 6)

Site Number	Site 5 and 6	1:50 000 map nr	2727 DC
Site Data	Description:		
Type of site	Open site		
Site categories	Informal cemetery		
Context	<p>Site 5 consists of approximately 23 stone packed graves. The graves are aligned east to west and are located on a farm fence. Three graves have cement headstones.</p> <p>Site 6 consists of three stone cairns roughly aligned east to west. Two cairns are elongated and the third almost round.</p> <p>None of these sites are located within the proposed development area.</p>		
Cultural affinities, approximate age and significant features of the site;	<p>Inscriptions on the headstones at site 5 indicate the site is at least 30 years old. The oldest visible date is 1982.</p> <p>No estimation of age is possible for site 6.</p>		

Photographs



Figure 17: Site 5 viewed from the south west.



Figure 18: The oldest visible date at Site 5.



Figure 19: Location of Site 5 on the farm fence.



Figure 20: Possible stone packed grave at Site 6.

<p>Field Rating (Recommended grading or field significance) of the site:</p>	<p>Generally Protected A</p>
<p>Statement of Significance (Heritage Value)</p>	<p>High social significance</p>

Impact evaluation of the proposed project on heritage resources

Nature: During the operation of the project an indirect visual impact is expected for the site.		
	Without mitigation	With mitigation
Extent	Local (2)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	High (8)	Medium (5)
Probability	Probable (3)	Not Probable (1)
Significance	Medium (Low)	11 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation: There is no direct impact foreseen on the sites, but it is recommended that site 5 should be demarcated with danger tape to protect it during construction. (Please refer to section 7 for full details on recommendations).		
Cumulative impacts: Archaeological and cultural sites are non-renewable and impact on any archaeological context or material will be permanent and destructive.		
Residual Impacts: N.A		

Impact Summary PV1 (Site 5 and 6)

Activity	Impact summary	Significance	Proposed mitigation
There is no Direct impact on Site 5 and 6 as it is located outside the development footprint. There might be an indirect impact on the sites and the proposed mitigation will include ensuring that the sites are avoided by construction workers. This can be done by informing workers of the sites and demarcating the area.			
PLANNING AND DESIGN PHASE			
	Direct impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Indirect impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Cumulative impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
CONSTRUCTION PHASE			
	Direct impacts:		

Activity	Impact summary	Significance	Proposed mitigation
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
Indirect impacts:			
	Sites can unknowingly be damaged by construction workers.	Graves are of high social significance.	The site should be demarcated with danger tape to ensure that the site is not indirectly impacted by construction activities.
Cumulative impacts:			
	If the recommended mitigation measures are adhered to there should be no impact on the sites as they will be demarcated and remain as is.	NA	The site should be demarcated with danger tape to ensure that the site is not indirectly impacted by construction activities.
OPERATION PHASE			
Direct impacts:			
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
Indirect impacts:			
	Sites can unknowingly be damaged by construction workers.	Graves are of high social significance.	The site should be demarcated with danger tape to ensure that the site is not indirectly impacted by operational activities.
Cumulative impacts:			
	If the recommended mitigation measures are adhered to there should be no impact on the sites as they will be demarcated and remain as is.	NA	The site should be demarcated with danger tape to ensure that the site is not indirectly impacted by operational activities.
DECOMMISSIONING AND CLOSURE PHASE			
»	Direct impacts:		
	There is no impact on the sites as they are located outside the development footprint.		
Indirect impacts:			
	Sites can unknowingly be damaged by construction workers.	Graves are of high social significance.	The site should be demarcated with danger tape to ensure that the site is not indirectly impacted by activities.
Cumulative impacts:			

Activity	Impact summary	Significance	Proposed mitigation
	If the recommended mitigation measures are adhered to there should be no impact on the sites as they will be demarcated and remain as is.	NA	The site should be demarcated with danger tape to ensure that the site is not indirectly impacted by activities.

Impact Summary PV 2

Activity	Impact summary	Significance	Proposed mitigation
There is no Direct impact on Site 5 and 6 as it is outside the development footprint. There might be an indirect impact on the sites and the proposed mitigation will include ensuring that the sites are avoided by construction workers. This can be done by informing workers of the sites and demarcating the area.			
PLANNING AND DESIGN PHASE			
	Direct impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Indirect impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Cumulative impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
CONSTRUCTION PHASE			
	Direct impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Indirect impacts:		
	Sites can unknowingly be damaged by construction workers.	Graves are of high social significance.	The site should be demarcated with danger tape to ensure that the site is influenced by construction activities.
	Cumulative impacts:		
	If the recommended mitigation measures are adhered to there should be no impact on the sites as they will be demarcated and remain as is.	NA	The site should be demarcated with danger tape to ensure that the site is influenced by construction activities.
OPERATION PHASE			

Activity	Impact summary	Significance	Proposed mitigation
	Direct impacts:		
	There is no impact on the sites as they are located outside the development footprint.	NA	NA
	Indirect impacts:		
	Sites can unknowingly be damaged by construction workers.	Graves are of high social significance.	The site should be demarcated with danger tape to ensure that the site is influenced by construction activities.
	Cumulative impacts:		
If the recommended mitigation measures are adhered to there should be no impact on the sites as they will be demarcated and remain as is.	NA	The site should be demarcated with danger tape to ensure that the site is influenced by construction activities.	
DECOMMISSIONING AND CLOSURE PHASE			
»	Direct impacts:		
	There is no impact on the sites as they are located outside the development footprint.		
	Indirect impacts:		
	Sites can unknowingly be damaged by construction workers.	Graves are of high social significance.	The site should be demarcated with danger tape to ensure that the site is influenced by construction activities.
	Cumulative impacts:		
If the recommended mitigation measures are adhered to there should be no impact on the sites as they will be demarcated and remain as is.	NA	The site should be demarcated with danger tape to ensure that the site is influenced by construction activities.	

7. RECOMMENDATIONS

Six sites of heritage significance were identified during the survey. The demolished remains of two residential dwellings (Site 2 and 3) foundations of a rectangular cattle kraal (Site 1) and is associated with the residential complex. Site 4 is a large farm labourer compound setup.

Site 5 consists of approximately 23 stone packed graves and Site 6 consists of three stone cairns roughly aligned east to west that might represent graves.

All of the recorded 6 Sites are located outside the development footprint and no direct impact is foreseen on these sites by the proposed development.

Here brief consideration is given to measures that would be required during implementation of the proposed solar facility. No Archaeological mitigation is necessary prior to the start of construction (based on approval by SAHRA), but management measures would need to be taken into account to avoid damage to the local heritage, specifically the graves, by construction workers and staff wandering into the site and unknowingly damaging the graves. To ensure that these management measures are enforced the area should be demarcated with danger tape and workers should be informed that they are not to go into the area.

OBJECTIVE: Prevent unnecessary disturbance and/or destruction of archaeological sites or features that has not been mitigated for the development.

Project component/s	All phases of construction.		
Potential impact	Damage/disturbance to grave sites.		
Activity risk/source	Construction workers and staff might unknowingly damage grave sites.		
Mitigation: target/objective	To retain graves in undisturbed condition.		
Mitigation: Action/control	Responsibility	Timeframe	
Ensure that workers and construction vehicles remain away from the grave sites by demarcating the sites with danger tape or by fencing the sites.	Steynsrus PV Facility Management and ECO	Construction	
Performance indicator	Cemetery remains undamaged.		
Monitoring	No pedestrians or construction vehicles allowed inside the demarcated area.		

If any possible finds such as tool scatters, bone or fossil remains are exposed or noticed during construction, the operations must be stopped and a qualified archaeologist must be contacted to assess the find.

8. PROJECT TEAM

Jaco van der Walt, Project Manager and Archaeologist

Liesl Bester, Archival Specialist

9. STATEMENT OF COMPETENCY

I (Jaco van der Walt) am a member of ASAPA (no 159), and accredited in the following fields of the CRM Section of the association: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. This accreditation is also valid for/acknowledged by SAHRA and AMAFA.

Currently, I serve as Council Member for the CRM Section of ASAPA, and have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique and Tanzania; having conducted more than 300 AIAs since 2000.

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