

Rev. 24/08/2010

**Heritage scoping assessment for the  
PROPOSED DEVELOPMENT OF COAL MINING ACTIVITIES  
WEST OF LEPHALALE, LIMPOPO PROVINCE**

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**THE PROJECT:**

Reviewing of an area to determine if any features of heritage significance would prevent the possible development of coal mining activities.

**THIS REPORT:**

HERITAGE SCOPING ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF COAL MINING ACTIVITIES WEST OF LEPHALALE, LIMPOPO PROVINCE

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## EXECUTIVE SUMMARY

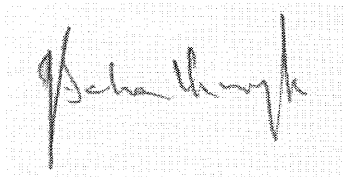
### **HERITAGE SCOPING ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF COAL MINING ACTIVITIES WEST OF LEPHALALE, LIMPOPO PROVINCE**

Sekoko Power is in the process of selecting sites which would be adequate for power plant development. At present they are investigating a site located some distance to the west of Lephalale in Limpopo Province. This is to be supported by the development of coal mining operations to the north of this site. This latter action forms the scope of this study.

This scoping study has revealed that very few heritage resources occur in the study area and therefore there is little likelihood that the mining activities would have an impact on them. Heritage resources usually manifest in a wide variety of forms, ranging from stone tools found as surface scatters, rock shelters, some of which may contain rock art, to stratified sites showing long sequences of occupation, and sites containing structures such as stone walling or buildings, cemeteries and places to which cultural significance is attached. These resources were contextualised on a regional basis in this scoping study.

Based on current knowledge, the sites, features and objects known to exist or that are expected to exist in the study area, are mostly graves and are judged to have a Grade III significance and therefore would not prevent the project from continuing.

The scoping study also outlines the scope, objectives and methodology that must be followed in order to comply with Section 38 of the NHRA. According to Section 38 a Phase I HIA has to be undertaken to determine the presence of any heritage resources that may occur in the mining area. This latter study would determine the level of significance of the identified resources as well as proposing mitigation measures for those resources that may be affected by the proposed development. The mitigation of heritage resources is referred to as Phase II studies and, depending on the type of resource, may include in depth studies before the impact may take place, or alternatively, that a resource must be avoided and protected.



J A van Schalkwyk  
Heritage Consultant

**TECHNICAL SUMMARY**

<b>Property details</b>						
Province	Limpopo					
Municipal district	Lephalale					
Topo-cadastral map	2327CB					
Closest town	Lephalale					
Farm name & no.	Smitspan 306LQ, Massenberg 305LQ, Minnasvlakte 258LQ, Hooikraal 315LQ					
Portions/Holdings	Various					
Average altitude	900 m					
Coordinates	Polygon					
	No	Latitude	Longitude	No	Latitude	Longitude
	1	S 23.72472	E 27.44514	2	S 23.63263	E 27.39076
	3	S 23.61005	E 27.41524	4	S 23.60220	E 27.41307
	5	S 23.58961	E 27.44821	6	S 23.60901	E 27.45567
	7	S 23.62434	E 27.41954	8	S 23.71162	E 27.46321

<b>Development criteria in terms of Section 38(1) of the NHR Act</b>	<b>Yes/No</b>
Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	
Construction of bridge or similar structure exceeding 50m in length	
Development exceeding 5000 sq m	Yes
Development involving three or more existing erven or subdivisions	Yes
Development involving three or more erven or divisions that have been consolidated within past five years	
Rezoning of site exceeding 10 000 sq m	Yes
Any other development category, public open space, squares, parks, recreation grounds	

<b>Development</b>	
Description	Development of coal mining operations
Project name	Sekoko Coal

<b>Land use</b>	
Previous land use	Agriculture
Current land use	Agriculture

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## **GLOSSARY OF TERMS AND ABBREVIATIONS**

**Study area:** Refers to the entire study area as indicated by the client in the accompanying Fig. 1.

**Stone Age:** The first and longest part of human history is the Stone Age, which began with the appearance of early humans between 3-2 million years ago. Stone Age people were hunters, gatherers and scavengers who originally did not live in permanently settled communities. Their stone tools preserve well and are found in most places in South Africa and elsewhere.

Early Stone Age	2 000 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Late Stone Age	30 000 - until c. AD 200

**Iron Age:** Period covering the last 1800 years, when new people brought a new way of life to southern Africa. They established settled villages, cultivated domestic crops such as sorghum, millet and beans, and they herded cattle as well as sheep and goats. Because they produced their own iron tools, archaeologists call this the Iron Age.

Early Iron Age	AD 200 - AD 900
Middle Iron Age	AD 900 - AD 1300
Late Iron Age	AD 1300 - AD 1830

**Historic Period:** Since the arrival of the white settlers - c. AD 1840 - in this part of the country

## **LIST OF ABBREVIATIONS**

<b>ADRC</b>	Archaeological Data Recording Centre
<b>ASAPA</b>	Association of Southern African Professional Archaeologists
<b>EIA</b>	Early Iron Age
<b>ESA</b>	Early Stone Age
<b>LIA</b>	Late Iron Age
<b>LSA</b>	Later Stone Age
<b>MSA</b>	Middle Stone Age
<b>NASA</b>	National Archives of South Africa
<b>NHRA</b>	National Heritage Resources Act
<b>PHRA</b>	Provincial Heritage Resources Agency
<b>SAHRA</b>	South African Heritage Resources Agency

## HERITAGE SCOPING ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF COAL MINING ACTIVITIES WEST OF LEPHALALE, LIMPOPO

### 1. INTRODUCTION

Sekoko Power is in the process of selecting sites which would be adequate for power plant development. At present they are investigating a site located some distance to the west of Lephalale in Limpopo Province. This is to be supported by the development of coal mining operations to the north of this site. This latter action forms the scope of this study.

An independent heritage consultant was appointed by **Cabanga Concepts** to provide input into a fatal flaw assessment with regard to sites, features or objects of cultural heritage significance that might occur within the boundaries of the area where it is planned to develop the coal mining operations.

### 2. TERMS OF REFERENCE

The scope of work consisted of conducting a Phase 1 archaeological survey of the site in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

This include:

- Conducting a desk-top investigation of the area
- A visit to the proposed development site

The objectives were to

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

### 3. HERITAGE RESOURCES

#### 3.1 The National Estate

The National Heritage Resources Act (Act No. 25 of 1999) defines the heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations that must be considered part of the national estate to include:

- 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 natural features of cultural significance;
- geological sites of scientific or cultural importance;

- archaeological and palaeontological sites;
- graves and burial grounds, including-
  - ancestral graves;
  - royal graves and graves of traditional leaders;
  - graves of victims of conflict;
  - graves of individuals designated by the Minister by notice in the Gazette;
  - historical graves and cemeteries; and
  - other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to the history of slavery in South Africa;
- movable objects, including-
  - objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
  - objects to which oral traditions are attached or which are associated with living heritage;
  - ethnographic art and objects;
  - military objects;
  - objects of decorative or fine art;
  - objects of scientific or technological interest; and
  - books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

### 3.2 Cultural significance

In the NHRA, Section 2 (vi), it is stated that “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This is determined in relation to a site or feature’s uniqueness, condition of preservation and research potential.

According to Section 3(3) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of

- its importance in 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; and
- sites of significance relating to the history of slavery in South Africa.

## 4. STUDY APPROACH AND METHODOLOGY



## 4.1 Extent of the Study

This survey covers the area as presented in Section 5 and as illustrated in Figures 1 - 2.

## 4.2 Methodology

### 4.2.1 Preliminary investigation

#### 4.2.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various anthropological, archaeological and historical sources were consulted.

- A number of publications (Baines 1877, Van Warmelo 1935) deal with the area from an anthropological perspective and produced information on the history of the region and its people.
- Various heritage impact assessment reports were studied (Huffman & Van der Walt 2008; Pistorius 2007; Van Schalkwyk 2005a, 2005b, 2006, 2008).

#### 4.2.1.2 Data bases

The *Heritage Atlas Database*, the *Environmental Potential Atlas*, the *Chief Surveyor General* and the *National Archives of South Africa* were consulted.

- Database surveys produced a number of sites located in adjacent areas.
- Deeds of Transfer for some of the farms were found in the records of the Chief Surveyor General's records, but contributed little with regard to heritage sites.
- Interesting documents relating to the discovery of coal, was identified in the NASA records.

#### 4.2.1.3 Other sources

Aerial photographs and topocadastral and other maps were also studied - see the list of references below.

- Information of a very general nature were obtained from these sources

### 4.2.2 Field survey

The area that had to be investigated, was identified by **Cababga Concepts** by means of maps. All the properties were visited. Prior to that, telephonic interviews were conducted with the various landowners in order to determine if there are sites on their properties that they know of.

## 4.3 Limitations

The following has a bearing on the results of this study:

- In all areas the vegetation cover was high and very dense, which seriously limited archaeological visibility.

## 5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

### 5.1 Site location

The study area is located west of the town of Lephalale (formerly Ellisras), in the Ellisras magisterial district of Limpopo Province. It include the farms Smitspan 306LQ, Massenberg 305LQ, Minnasvlakte 258LQ and Hooikraal 315LQ. For more detail, please see the Technical Summary presented above.

## 5.2 Site description

The topography of the region is very flat, with very few features (e.g. hills, outcrops or rock shelters, rivers) that would usually draw people to settle in its vicinity found in the area. Only a few small hills or outcrops occur. All the rivers crossing the area are non-perennial. The biggest river, the Makolo, passes some distance to the east of the study area, flowing from south to north.

The geology is made up of shale, with arenite occurring to the east of the study area. All is overlain by sand, probably aeolic in origin, having being laid down from the west.

The region can be described as typical savannah, with the original vegetation consisting of Mixed Bushveld, with Sweet Bushveld occurring to the east. Although some crop farming took place on some of the farms, cattle farming was the main activity and has, in the recent past been replaced by game farming.

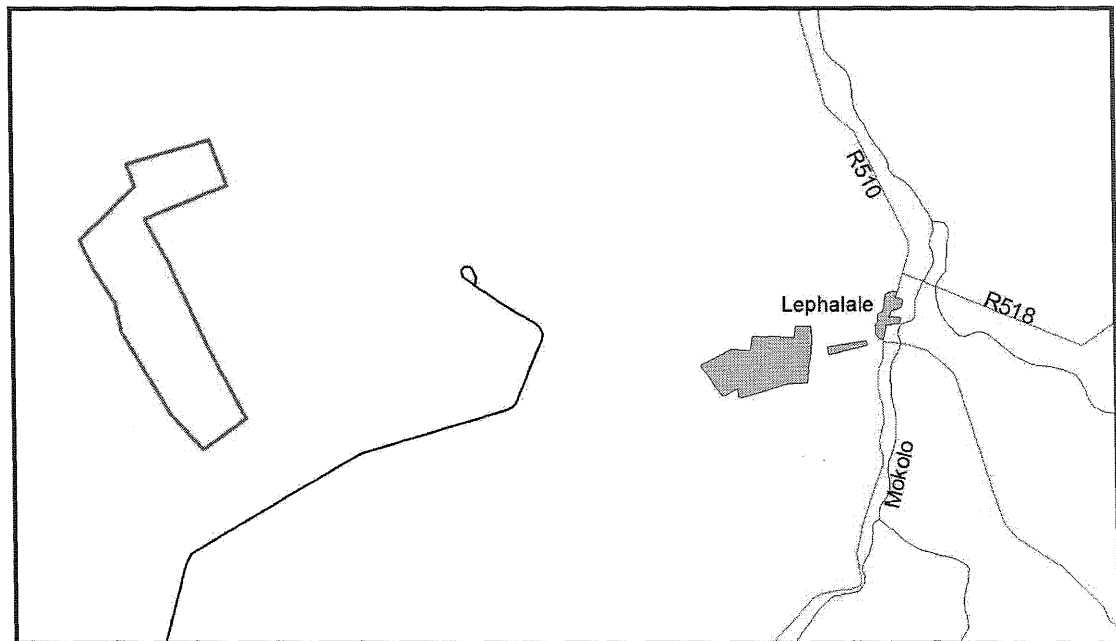


Fig. 1. Location of the study area (purple polygon) in regional context.

## 5.3 Regional overview

Probably because of the somewhat inhospitable environment, being very flat, hot and dry (average rainfall of 436 mm per annum) and with few sources of surface water, people did not settle in large numbers in the area in the past.

In the larger region, in areas where there are outcrops, especially close to rivers, rock art sites have been documented. The ones closest to the study area are located on the farm

Grootfontein 501LQ, on the northern outskirts of the town of Lephalale. Other rock art sites are found further away to the south and the east. At Nelson's kop, 15 km east of the study area, some interesting engravings of animal tracks, cupules and cut marks were identified on the southern face of the hill.

Early and Later Iron Age sites are similarly found to the south and the east, as well as to the north. As these people were agro-pastoralists (and did not have the technology to extract subterranean water), they preferred to settle in areas where such resources were readily available.

The historic period starts off quite late in this part of the country. Probably one of the earliest published sources that refer to the area, in a generalised sense, is that of the explorer Thomas Baines who passed through the area during the early 1870s. Although for other sections of his travels he gives detailed descriptions of the local population, he does not comment on anybody in this particular area. Although his rendering of the various rivers and other topographical features are quite accurate for the time, he seems to imply that there were no communities settled here (Baines 1877).

Similarly, Van Warmelo (1935) in his encyclopaedic work on the distribution of various African groups show an area largely devoid of communities, with only a few isolated occurrences, all possibly farm-workers. The closest community indicated by him are the Seleka, who reside approximately 50 km to the north. To the south, it seems from his maps that the area also used to be claimed by the Seleka. This is a very Sothoised group of Ndebele whom have also lived amongst the Ngwato in Botswana and their arrival in the area date to late Pre-colonial times.

In the town of Lephalale (Ellisras) there is a cemetery containing the graves of some of the earliest white settlers in the area. The town of Ellisras was only laid out in December 1960, and was named after two of the pioneer families in the area, Ellis and Erasmus. In 2002, the name was changed to Lephalale. This latter name is taken from the Phalala River, which is derived from the Tswana verb 'to flow' or 'one which overflows' (Raper 2004: 86, 204).

With reference to the study area itself, some information has been obtained about the different farms. It seems as if they are part of government land until the early part of the 20<sup>th</sup> century. However, drilling activities undertaken by the "Irrigation Department" in 1920, apparently revealed more than water and the presence of coal and oil bearing shale was established on the farms Grootegeluk and Hooikraal. This prompted an individual by the name of F.F. Pienaar to peg 50 claims on each of the farms Kringatspruit, Hooikraal, Grootegeluk and Enkelbult (Reference MM1713/20, 1920; Reference MM2827/20, 1920). What became of all of this is unknown.

#### 5.4 Identified sites

The following cultural heritage resources are known to exist or are expected to exist in the study area:

##### 5.4.1 Stone Age

No stone tools dating to any phase of the Stone Age were noticed during the site visit.

- **It is highly unlikely that sites, features or objects dating to this period would be found in the study area.**

##### 5.4.2 Iron Age

No sites, features or objects dating to the Iron Age were identified during the site visit.

- **It is highly unlikely that sites, features or objects dating to this period would be found in the study area.**

### 5.4.3 Historic period

The area under discussion was largely used for farming activities during the recent past. This implied a low occupation by humans. What can be expected are farmsteads, farming related structures and informal cemeteries.

- **Although none were identified, it is expected that some forgotten informal cemeteries or graves could be located on the various farms.**

## 6. SITE SIGNIFICANCE AND ASSESSMENT

### 6.1 Heritage assessment criteria and grading

The NHRA stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation, on a local authority level.

The occurrence of sites with a Grade I significance will demand that the mining activities be drastically altered in order to retain these sites in their original state. For Grade II and Grade III sites, the applicable mitigation measures would allow the mining activities to continue.

### 6.2 Statement of significance

In terms of Section 7 of the NHRA, all the sites which are expected to occur in the study area is evaluated to have a Grade III significance.

### 6.3 Impact assessment

Impact analysis of cultural heritage resources under threat of the proposed development, are based on the present understanding of the development.

As it is likely that some heritage sites would be impacted on by the proposed mining activities the next step would be the conducting of a full Phase I archaeological survey of the area in accordance with the requirements of Section 38(3) of the NHRA.

If it is impossible to avoid an impact, the Heritage Act allows for mitigation measures to be implemented. This usually entails the documentation and archaeological investigation (excavation) of sites that are to be impacted, and can usually only be done after a valid permit has been issued by SAHRA to a qualified archaeologist.

## 7. CONCLUSIONS

This scoping study has revealed that very few heritage resources occur in the study area and therefore there is little likelihood that the mining activities would have an impact on them. Heritage resources usually manifest in a wide variety of forms, ranging from stone tools found as surface scatters, rock shelters, some of which may contain rock art, to stratified sites showing long sequences of occupation, and sites containing structures such as stone walling or buildings, cemeteries and places to which cultural significance is attached. These resources were contextualised on a regional basis in this scoping study.

Based on current knowledge, the sites, features and objects known to exist or that are expected to exist in the study area, are mostly graves and are judged to have a Grade III significance and therefore would not prevent the project from continuing.

The scoping study also outlines the scope, objectives and methodology that must be followed in order to comply with Section 38 of the NHRA. According to Section 38 a Phase I HIA has to be undertaken to determine the presence of any heritage resources that may occur in the mining area. This latter study would determine the level of significance of the identified resources as well as proposing mitigation measures for those resources that may be affected by the proposed development. The mitigation of heritage resources is referred to as Phase II studies and, depending on the type of resource, may include in depth studies before the impact may take place, or alternatively, that a resource must be avoided and protected.

## 8. REFERENCES

### 8.1 Data bases

- Chief Surveyor General  
Environmental Potential Atlas, Department of Environmental Affairs and Tourism.  
Heritage Atlas Database, Pretoria.  
National Archives of South Africa
- Depot: SAB, Source MNW, Volume 515, Reference MM1713/20, Date 1920
  - Depot: SAB, Source MNW, Volume 535, Reference MM2827/20, Date 1920

### 8.2 Literature

- Acocks, J.P.H. 1975. *Veld Types of South Africa*. Memoirs of the Botanical Survey of South Africa, No. 40. Pretoria: Botanical Research Institute.
- Baines, T. 1877. *The gold regions south eastern Africa*. London: Edward Stanford.
- Holm, S.E. 1966. *Bibliography of South African Pre- and Protohistoric archaeology*. Pretoria: J.L. van Schaik.
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- Pistorius, J.C.C. 2007. *A Phase 1 heritage impact assessment study for the Eskom Mmamabula-Delta project near Lephalale in the Limpopo Province of South Africa*. Pretoria: Unpublished report.
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- Thackeray, A.I. 1992. The Middle Stone Age south of the Limpopo River. *Journal of World Prehistory* 6(4):385-440.
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- Van Schalkwyk, J.A. 2005b. *Heritage survey report of the Kumba properties at Grootegeluk Mine, Lephalale area, Limpopo Province*. Unpublished report 2005KH090. Pretoria: National Cultural History Museum.
- Van Schalkwyk, J.A. 2006. *Heritage impact scoping report for the proposed re-alignment of the Steenbokpan road, Matimba B power station, Lephalale district, Limpopo Province*. Unpublished report 2006KH016. Pretoria: National Cultural History Museum.
- Van Schalkwyk, J.A. 2008. *Heritage survey report for the development of a water reservoir and pipelines for the new Medupi Power Station, Ellisras magisterial district, Limpopo Province*. Unpublished report 2008/JvS/015. Pretoria.
- Van Warmelo, N.J. 1935. *A Preliminary survey of the Bantu Tribes of South Africa*. Ethnological Publications No. 5. Pretoria: Government Printer.

### **8.3 Maps and aerial photographs**

1: 50 000 Topocadastral maps – 2327CB.

Google Earth

## APPENDIX 1: RELEVANT LEGISLATION

All archaeological and palaeontological sites, and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(4) No person may, without a permit issued by the responsible heritage resources authority-

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

In terms of cemeteries and graves the following (Section 36):

(1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-

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

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.



The National Heritage Resources Act (Act no 25 of 1999) stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

**APPENDIX 2: ILLUSTRATIONS**

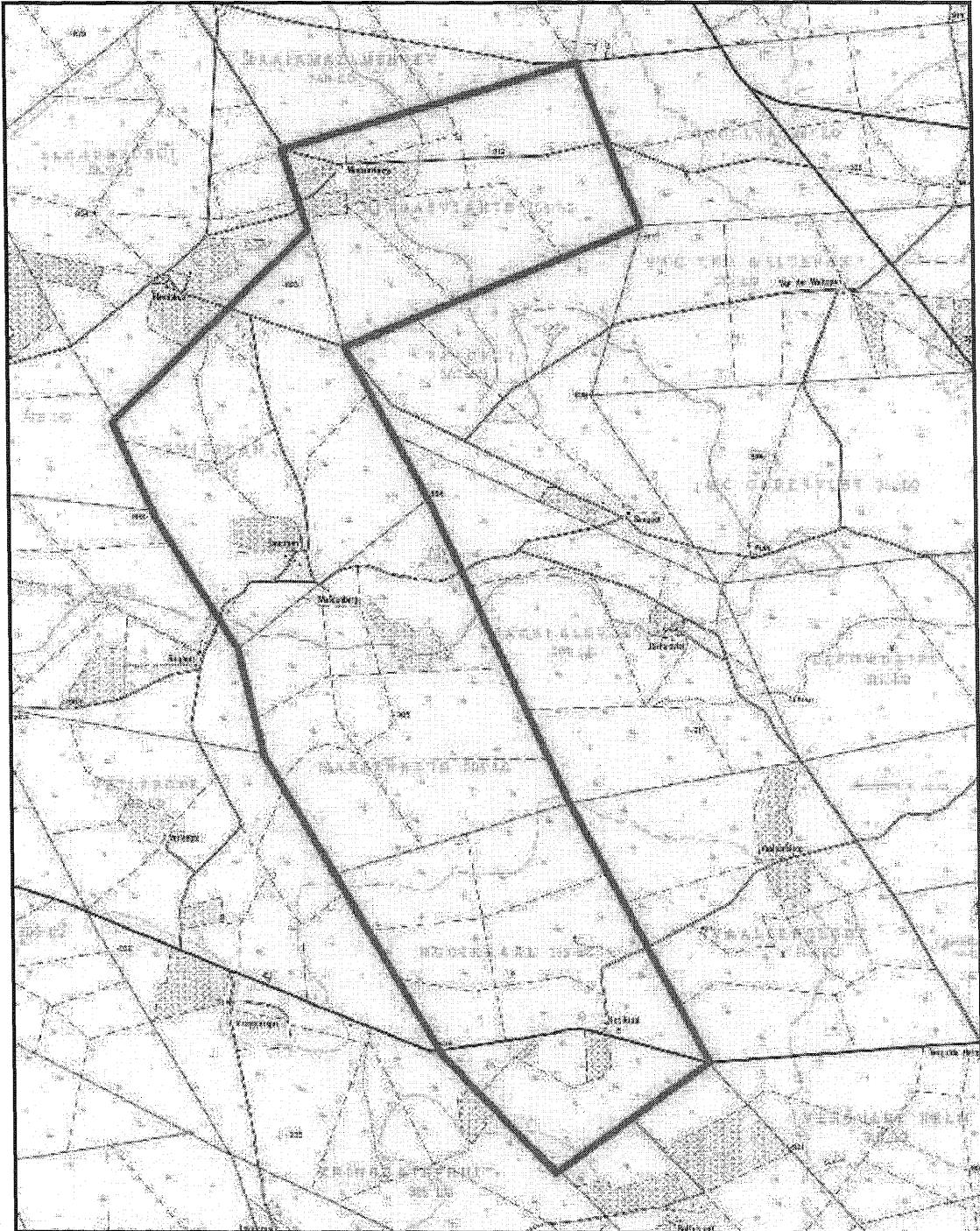


Fig. 2. Map showing the study area in more detail.  
(Maps 2327CB, Chief Surveyor General)

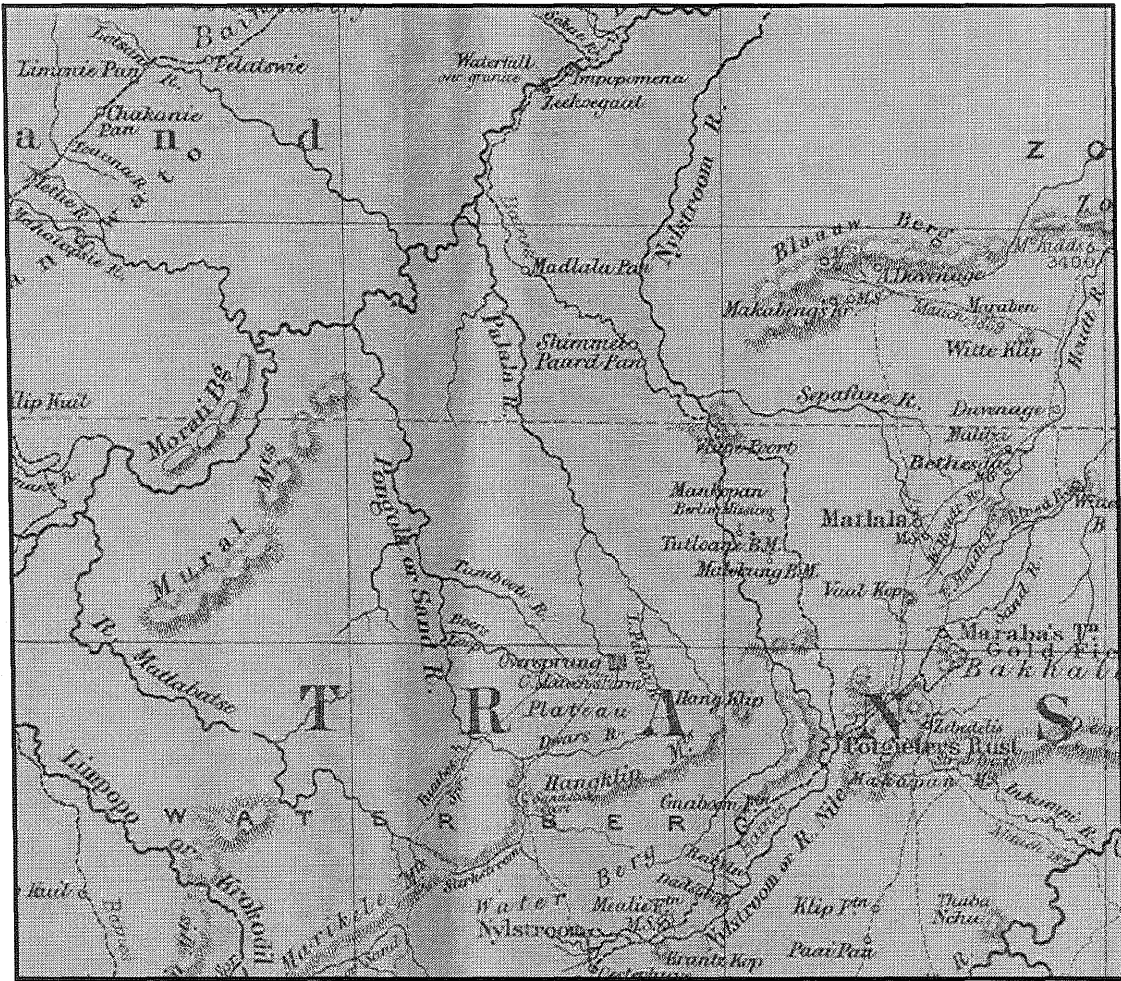


Fig. 3. Portion of the map by Thomas Baines (1877).  
 This map shows not only the absence of settled communities in the area, but also the general lack of knowledge.

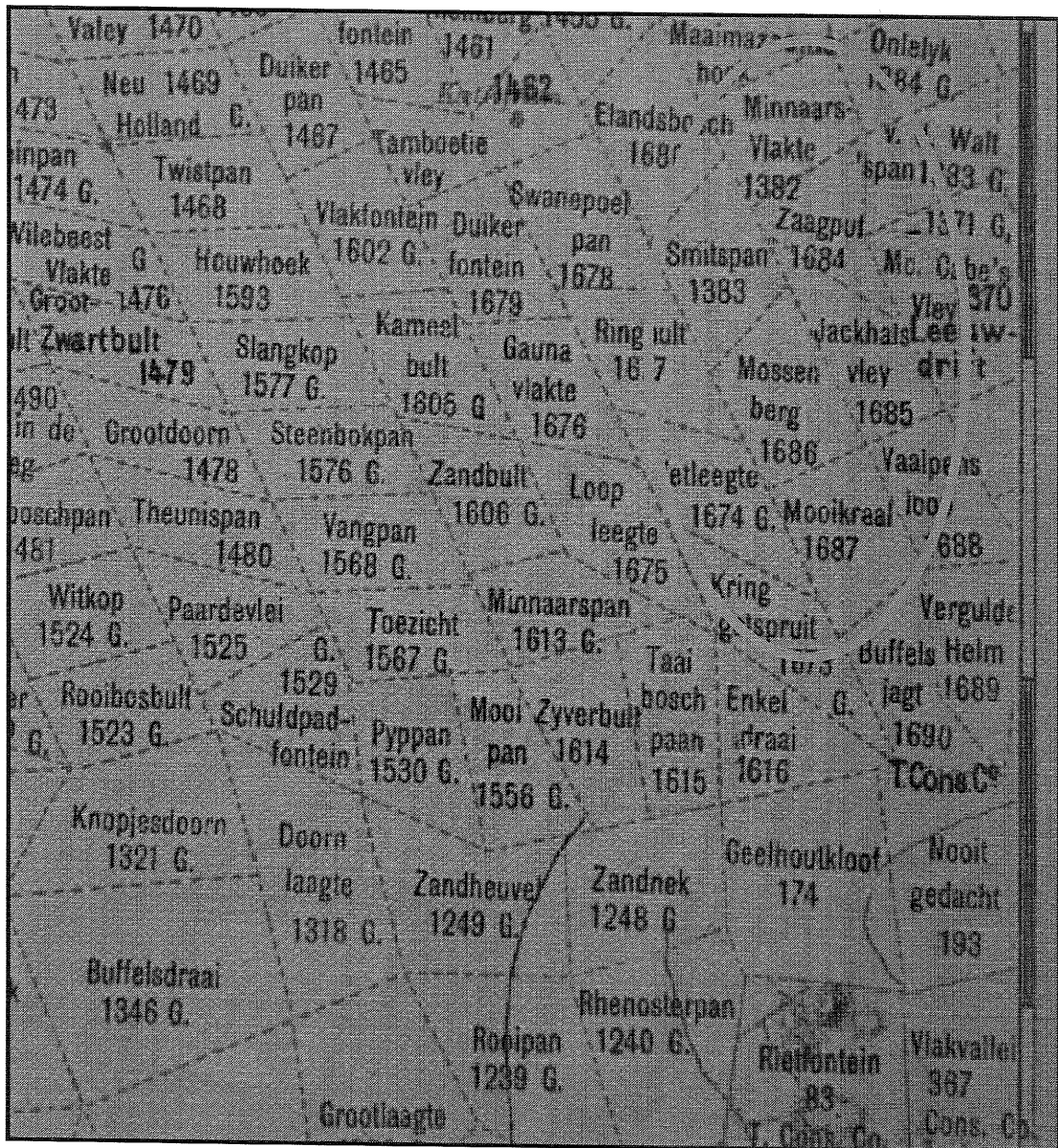


Fig. 4. Section of F. Jeppe's map of 1899. Although the various farms are indicated, no infrastructure, settlements, etc. is indicated. The farm Hooikraal is identified as Mooikraal.

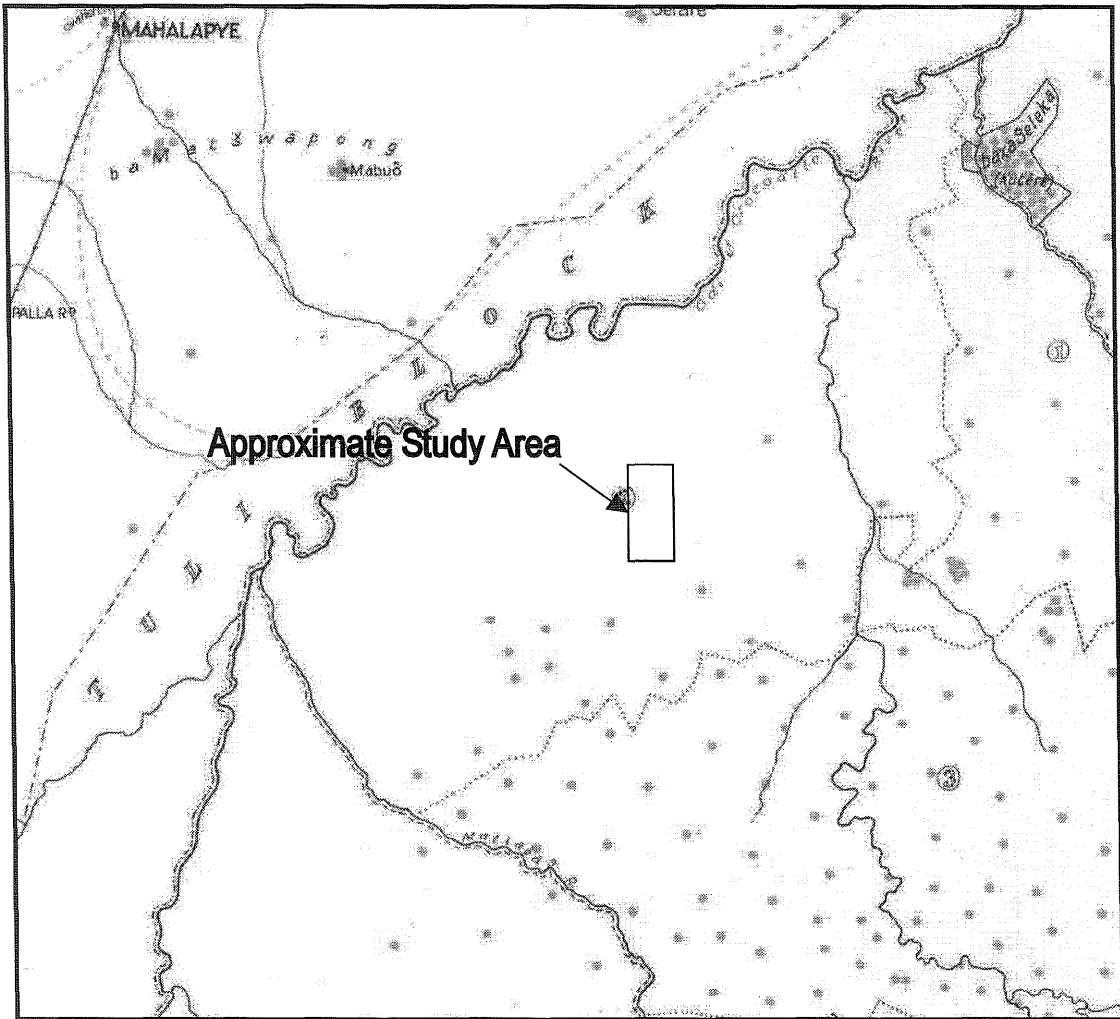


Fig. 5. Map showing the absence of African communities in the larger region (Van Warmelo 1935).  
(One orange dot represents 10 individuals, mostly farm workers)

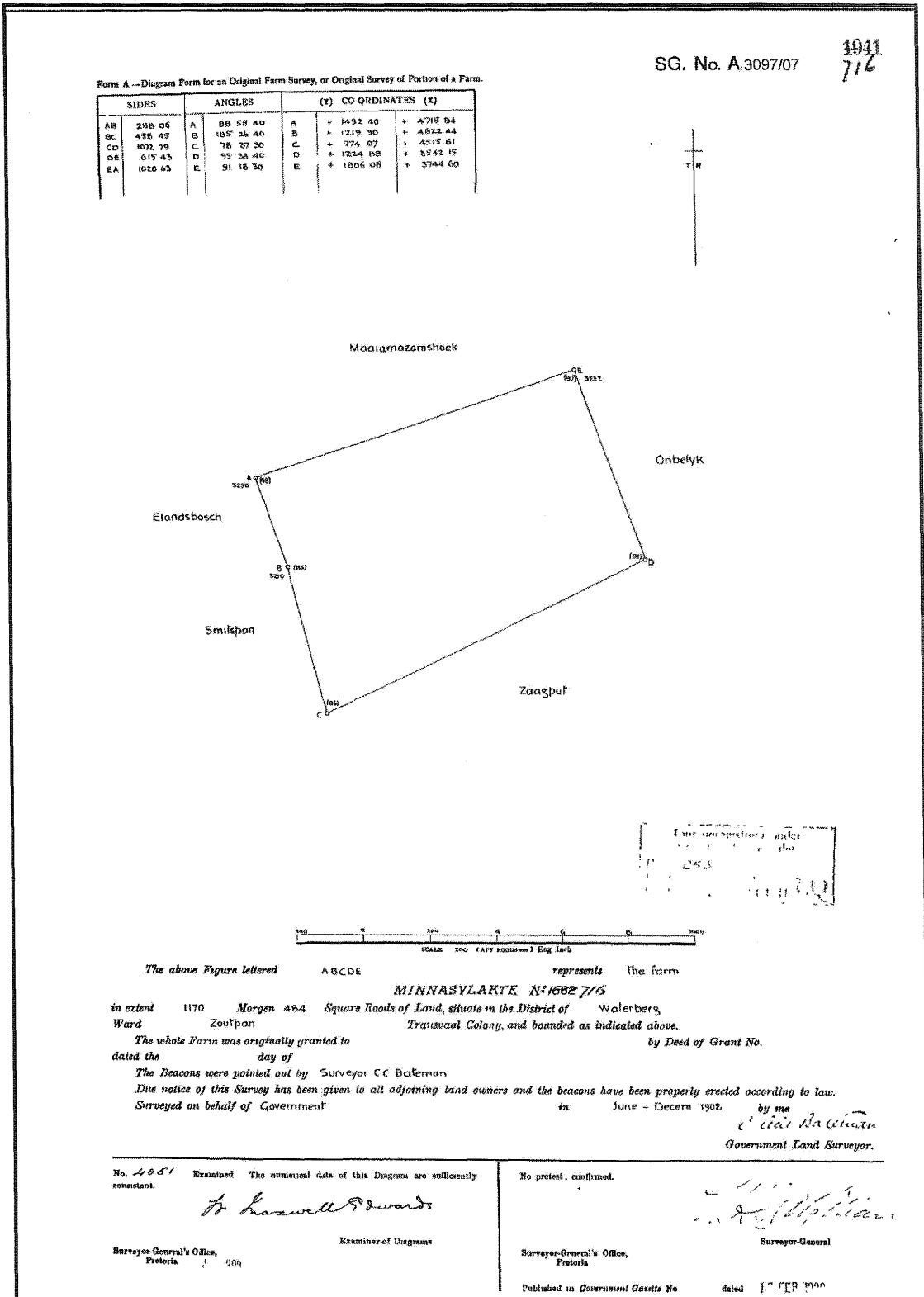


Fig. 6. Deed of Transfer for the farm Minnasvlakte (Chief Surveyor General). This shows that the farm was surveyed in 1908, and that it still was Government land at that time.

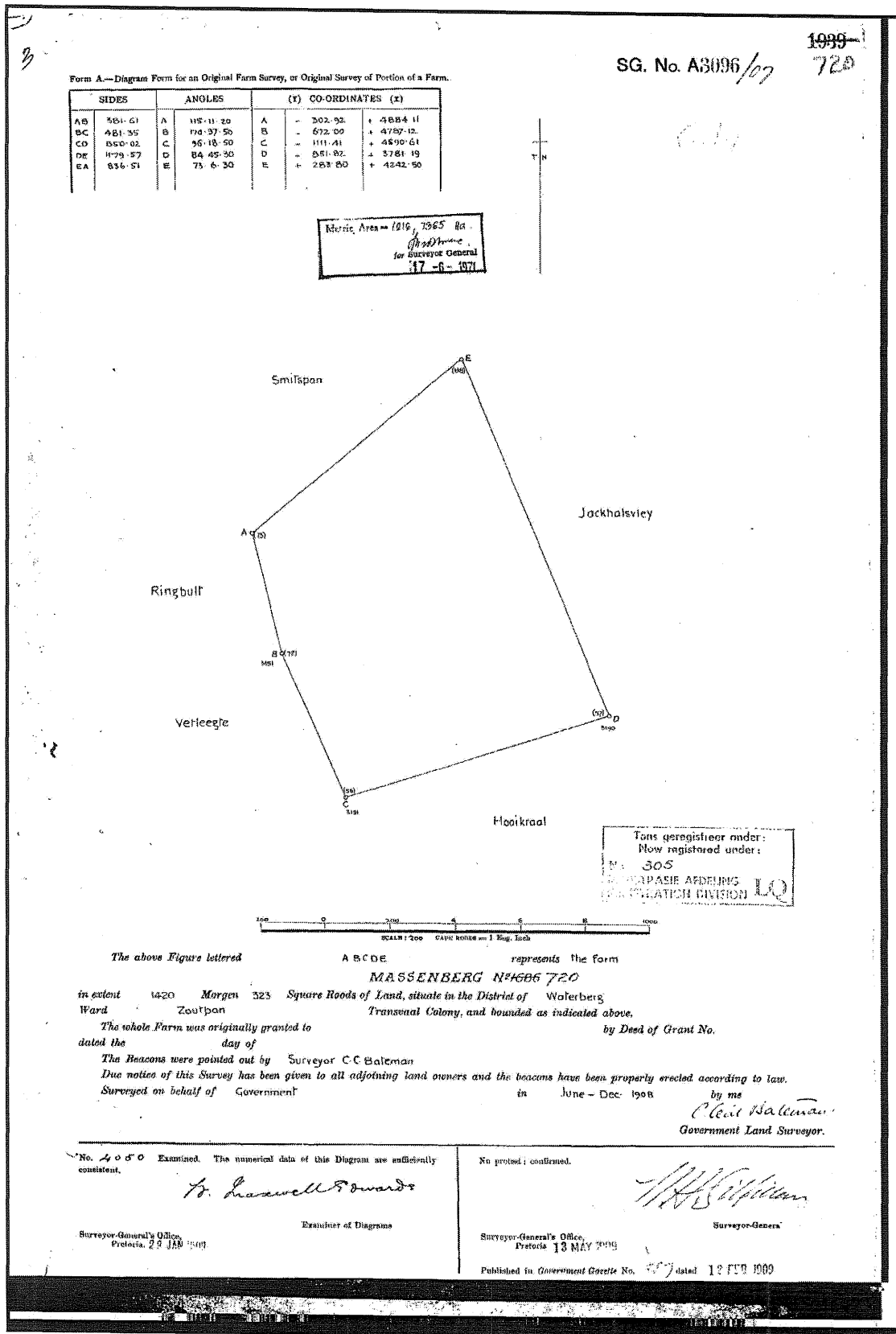


Fig. 7. Deed of Transfer for Massenberg, dated 1909 (Chief Surveyor General). This shows that the farm was surveyed in 1908, and that it still was Government land at that time.

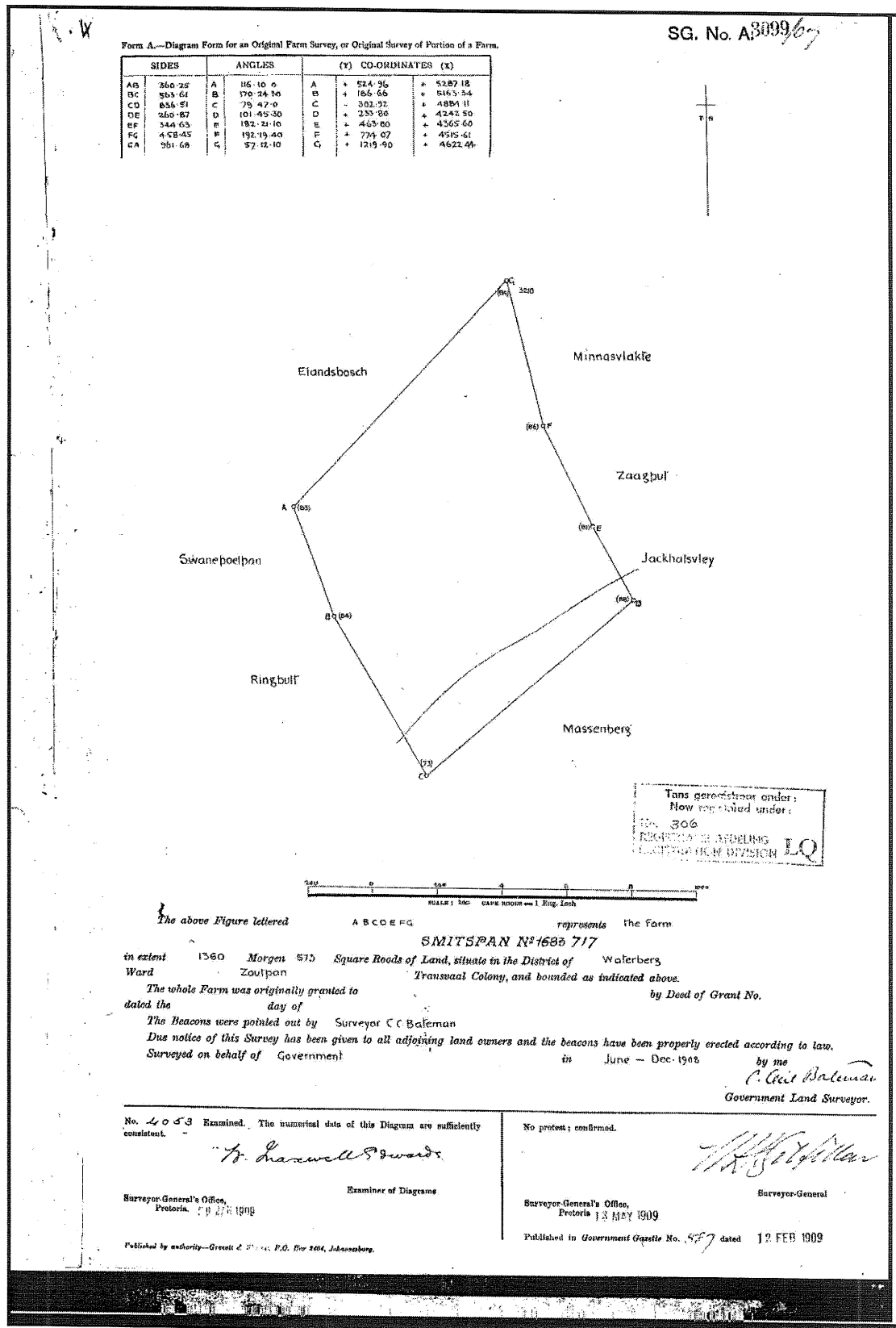


Fig. 8. Deed of Transfer for Smitspan, dated 1909 (Chief Surveyor General). This shows that the farm was surveyed in 1908, and that it still was Government land at that time. What seems like a road crossing the property is also indicated on the map





Fig. 9. Aerial photograph of the study area, showing a flat, featureless plain.  
(Photo: Google Earth)

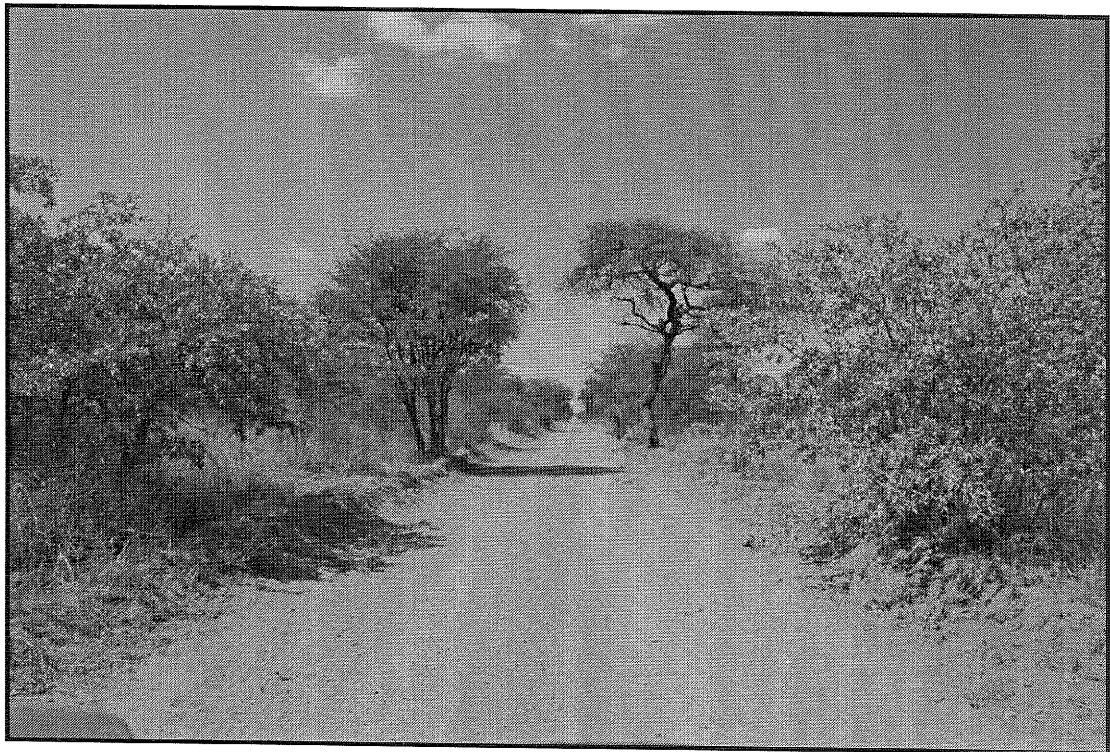


Fig. 10. Typical view of the area, showing the dense vegetation encountered.

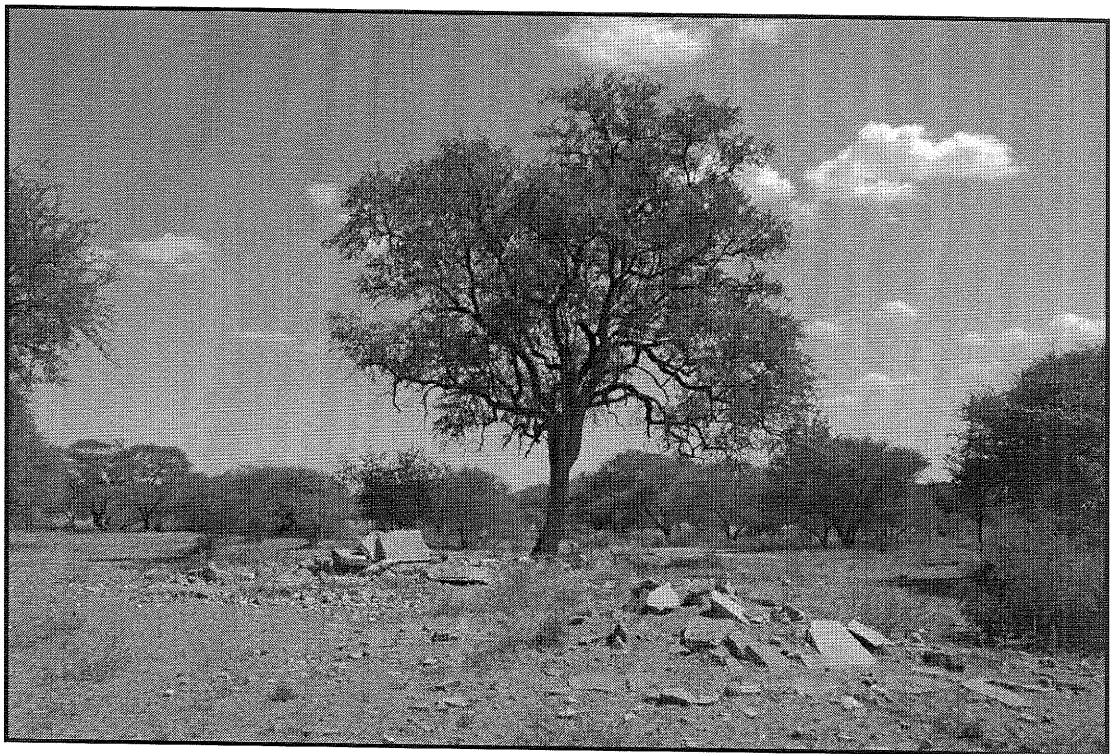


Fig. 11. The remains of the farmstead on Smitspan.