

Cultural Heritage Assessment for the Proposed Styldrift Shaft 2 and Associated Infrastructure at Royal Bafokeng Platinum Styldrift Mine Complex, Rustenburg Local Municipality, Bojanala District Municipality, North West Province

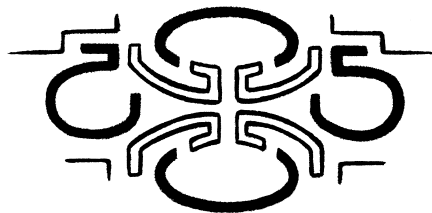


For

<p>Project Applicant Royal Bafokeng Platinum Management Services (Pty) Ltd PO Box 2283 Fourways 2055 South Africa Tel: 011 530 8040 Fax: 011 530 8049</p>	<p>Environmental Consultant SRK Consulting (Pty) Ltd Block A, Menlyn Woods Office Park 291 Sprite Avenue Faerie Glen Pretoria 0081 Tel: 012 361 9821 Fax: 012 361 9912 acaddick@srk.co.za</p>
---	--

By

Francois P Coetzee
Department of Anthropology & Archaeology
University of South Africa
PO Box 392
Pretoria
0003
Tel: (012) 429 6297
Fax: (012) 429 6091
coetzfp@unisa.ac.za



Date:	May 2015
Version:	1 (Final Report)

Executive Summary

This report contains a comprehensive heritage impact assessment investigation in accordance with the provisions of Sections 38(1) and 38(3) of the *National Heritage Resources Act* (Act No. 25 of 1999) and focuses on the survey results from a cultural heritage survey as requested by SRK Consulting (Pty) Ltd. Bafokeng Rasimone Platinum Mine (BRPM) is situated 40 kilometres (km) north-west of Rustenburg in North West Province. The BRPM Styldrift Mine Complex (SMC) is situated on the farm Styldrift 90 JQ, located approximately 7 km from the existing BRPM Concentrator Plant and 6 km south of Sun City along the R565. The establishment of the SMC is an extension and expansion of the existing BRPM Joint Venture (JV) between Rustenburg Platinum Mines Limited (RPM) and Royal Bafokeng Resources (RBR). Royal Bafokeng Platinum Ltd (RBPlat) Management Services (Pty) Ltd, is the management services company for the BRPM JV.

Archaeological remains

No Iron Age structures, features, assemblages or artefacts were recorded during the survey. The extensive Early Stone Age manufacturing assemblage (Site 13) falls outside footprint of the proposed Shaft 2 area and no impact is foreseen.

Historical Structures

A number of cattle outposts and currently occupied settlements were recorded. The removal of these people will entail a social consultation process.

Graveyard and Graves

A total of 12 sites that range from individual and cluster of graves to extensive graveyards were recorded during the survey and falls within the footprint of the proposal development. All these locations should be fenced off to prevent any impact during the construction and production phases of the development. If the graves are to be exhumed and reburied, it will entail a Phase 2 investigation which will require a social consultation process and the application of the required permits.

Conclusion and Recommendations

Based on the assessment, it is proposed that mining activities can only be allowed to continue if any impact on these site are prevented or the recommended mitigation measures are enacted and by also taking cognizance of the following as aspects:

Archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (*cf. NHRA (Act No. 25 of 1999), Section 36 (6)*).

Definitions and abbreviations

Midden:	Refuse that accumulates in a concentrated heap.
Stone Age:	An archaeological term used to define a period of stone tool use and manufacture
Iron Age:	An archaeological term used to define a period associated with domesticated livestock and grains, metal working and ceramic manufacture
NHRA:	National Heritage Resources Act (Act No. 25 of 1999)
SAHRA:	South African Heritage Resources Agency
SAHRIS:	South African Heritage Resources Information System
PHRA-G:	Provincial Heritage Resources Authority - Gauteng
GDARD:	Gauteng Department of Agriculture and Rural Development
HIA:	Heritage Impact Assessment
DMR:	Department of Mineral Resources

I, Francois Coetzee, hereby confirm my independence as a cultural heritage specialist and declare that I do not have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of the listed environmental processes, other than fair remuneration for work performed on this project.



Francois P Coetzee
Cultural Heritage Consultant
Accredited Archaeologist for the SADC Region
Professional Member of ASAPA (CRM Section) Reg no: 28

Contents

1.	<i>Introduction</i>	6
2.	<i>Objectives</i>	6
3.	<i>Study Area</i>	7
4.	<i>Proposed Project Activities</i>	15
5.	<i>Legal Framework</i>	18
6.	<i>Study Approach/Methods</i>	21
6.1	<i>Review of existing information/data</i>	22
6.2	<i>Site visits</i>	24
6.3	<i>Impact assessment</i>	24
6.4	<i>Assumptions, restrictions and gaps in knowledge</i>	24
6.5	<i>Informants/Local Residents</i>	24
7.	<i>Description and Evaluation of Cultural Heritage Sites</i>	25
8.	<i>Summary of Site Locations</i>	29
9.	<i>Recommendations and Conclusions</i>	32
10.	<i>References</i>	33
	<i>Addendum 1: Archaeological and Historical Sequence</i>	35
	<i>Addendum 2: Descriptions of Recorded Sites</i>	43
	<i>Addendum 3: Surveyor General Farm Diagrams</i>	53
	<i>Addendum 4: Rating of Impact</i>	56

Figures

	<i>Figure 1: The survey area falls within the Zeerust Thornveld veld type</i>	8
	<i>Figure 2: Regional context of the survey area (indicated by the red circle south of Pilanesberg)</i>	8
	<i>Figure 3: Local context of the survey area (north of Rustenburg)</i>	9
	<i>Figure 4: Detail location of the survey area south of the Pilanesberg (Google Earth 2015)</i> ...9	
	<i>Figure 5: Detail view of the survey areas as indicated on the 1:50 000 topographic map 2527AC</i>	10
	<i>Figure 6: The detail of the survey area as indicated on Google Earth (2015)</i>	10
	<i>Figure 7: The boundaries of the farm Styldrift 90 JQ</i>	11
	<i>Figure 8: General view of maintenance road along the railway track</i>	11
	<i>Figure 9: General view of the southern region of the survey area</i>	12
	<i>Figure 10: Water retention dam in the southern area of the survey area</i>	12
	<i>Figure 11: General view of the southern region of the survey area</i>	13
	<i>Figure 12: An example of the mining current infrastructure in the south of the survey area</i> .13	
	<i>Figure 13: General view of agricultural fields north east of the railway line</i>	14
	<i>Figure 14: General view of the eastern region of the survey area</i>	14
	<i>Figure 15: Rocky outcrops in the southern region of the survey area</i>	15
	<i>Figure 16: Satellite image with aspects of the proposed mining activities (Shaft 2)</i>	16
	<i>Figure 17: Styldrift Shaft 2 and associated infrastructure</i>	17
	<i>Figure 18: Proposed Styldrift Shaft 2 infrastructure developments indicated on 1:50 000 map 2527AC</i>	18
	<i>Figure 19: Recorded survey tracks for the project</i>	21
	<i>Figure 20: A map of Styldrift 90 JQ in 1896 confirming the existence of clusters of earlier settlements that later consolidated to become what is today Chaneng</i>	23
	<i>Figure 21: Location of the recorded heritage sites recorded during the survey</i>	25

<i>Figure 22: View of the northern region of the survey area where the heritage sites are located.....</i>	<i>26</i>
<i>Figure 23: Detail of the area with heritage sites.....</i>	<i>26</i>
<i>Figure 24: Zoomed-in detail of the sites located in area.....</i>	<i>27</i>
<i>Figure 25: Location of the currently occupied cattle outposts in the survey area.....</i>	<i>27</i>
<i>Figure 26: Areas occupied by the Bafokeng people in the 1930s (red triangles)</i>	<i>39</i>
<i>Figure 27: Location of the Battle of Eland River</i>	<i>41</i>
<i>Figure 28: Location and sequence of events at the Battle of Eland River</i>	<i>42</i>
<i>Figure 29: General view of Site 25.....</i>	<i>44</i>
<i>Figure 30: One of the circular graves indicated by the community members.....</i>	<i>45</i>
<i>Figure 31: One of the circular graves of packed stone (notice that one stone is of a different rock type)</i>	<i>45</i>
<i>Figure 32: General view of the graveyard</i>	<i>47</i>
<i>Figure 33: The two graves are situated next to each other</i>	<i>49</i>
<i>Figure 34: General view of the fenced graveyard.....</i>	<i>51</i>
<i>Figure 35: Stone-walled enclosure.....</i>	<i>52</i>
<i>Figure 36: Surveyor General's map of the farm Boschkoppe 104 JQ first surveyed in 1894</i>	<i>53</i>
<i>Figure 37: Surveyor General's map of the farm Styldrift 90 JQ first surveyed in 1896.....</i>	<i>54</i>

Tables

<i>Table 1: Rating the significance of sites</i>	<i>19</i>
<i>Table 2: Level of protection of buildings/structures.....</i>	<i>20</i>
<i>Table 3: Description and evaluation of the recorded sites.....</i>	<i>29</i>
<i>Table 4: Summary of site coordinates</i>	<i>31</i>

1. Introduction

Bafokeng Rasimone Platinum Mine (BRPM) is situated 40 kilometres (km) north-west of Rustenburg in North West Province. The BRPM Styldrift Mine Complex (SMC) is situated on the farm Styldrift 90 JQ, located approximately 7 km from the existing BRPM Concentrator Plant and 6 km south of Sun City along the R565. The establishment of the SMC is an extension and expansion of the existing BRPM Joint Venture (JV) between Rustenburg Platinum Mines Limited (RPM) and Royal Bafokeng Resources (RBR). Royal Bafokeng Platinum Ltd (RBPlat) Management Services (Pty) Ltd, is the management services company for the BRPM JV.

The farm Styldrift 90 JQ has a common boundary with the farm Boschkoppie 104 JQ to the south and is situated adjacent to the farm Frischgewaagd 96 JQ to the west. The major natural feature on the northern boundary is the Pilanesberg complex. The farm Styldrift 90 JQ is situated on land held in trust by the State on behalf of the Royal Bafokeng Nation (RBN). The closest neighbouring communities and villages are Chaneng, Rasimone, Mafenya and Robega.

The SMC has an existing Environmental Management Programme (EMPR), issued in March 2008, for its Styldrift mining operation (Reference Number: NW30/5/1/2/3/2/1/(312) EM) under the MPRDA and an existing Water Use Licence (WUL), Licence Number: 26031507, issued under the National Water Act (Act No. 36 of 1998) (NWA). RBPlat plans to extend its operations on the Styldrift 90 JQ farm with the construction of the Styldrift No. 2 Shaft. The proposed construction activities associated with the Styldrift No. 2 Shaft Project will take place on the farm Styldrift 90 JQ.

An extensive cultural heritage survey was conducted of the farm Styldrift 90 JQ, which was requested by RBPlat in 2012 (see Coetzee 2012a & 2012b). Additional heritage surveys have been completed as part of various mining developments in the area (also see Coetzee 2015). Field data from these studies are integrated with the current survey.

2. Objectives

The general aim of this cultural heritage survey is to record and document cultural heritage remains consisting of both tangible and intangible archaeological and historical artefacts, structures (including graves), settlements and oral traditions of cultural significance.

As such the terms of reference of this survey are as follows:

- Identify and provide a detailed description of all artefacts, assemblages, settlements and structures of an archaeological or historical nature (cultural heritage sites) located on the study area,
- Estimate the level of significance/importance of the these remains in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value,
- Assess any possible impact on the archaeological and historical remains within the area emanating from the proposed development activities, and
- Propose possible mitigation measures which will limit or prevent any impact provided that such action is necessitated by the development.

3. Study Area

The Styldrift Mine Complex (SMC) is located in the Rustenburg area, which forms part of the North West Province, approximately 120 km North West of Johannesburg. The Styldrift Mine Complex area is situated ± 9 km south of the Pilanesberg National Park on the farm Styldrift 90 JQ, within the Bojanala District Municipality, Rustenburg Local Municipality. Villages in the area include Chaneng, Robega, Mafenya and Rasimone, ± 4 km, 3 km, 2 km and 1 km respectively, situated to the south of the Styldrift Mine Complex. Rasimone and Chaneng are the closest villages to the current project area.

The farm Styldrift 90 JQ has a common boundary with the farm Boschkoppie 104 JQ to the south and is adjacent to the farm Goedgedacht 110 JQ to the south-east. The major natural feature on the northern boundary is the Pilanesberg Complex. The farm Styldrift 90 JQ is situated on land held in trust by the State on behalf of the Royal Bafokeng Nation, in a region characterised by established chrome and platinum mining operations. The Rustenburg - Thabazimbi railway line traverses the Boschkoppie 104 LQ and Styldrift 90 JQ farm with an operational station at Boshhoek. The R556 tarred road runs through the northwest corner of Styldrift 90 JQ (as are several other roads and infrastructure developments). However, also note that the upper north-west corner of the farm falls within the Pilanesberg National Park. The closest neighbouring communities and villages are Chaneng, Rasimone, Mafenya and Robega villages, of which Chaneng is situated on the farm Styldrift.

The survey area is situated in the Bankenveld south of the Pilanesberg Mountains. The region is mostly open and flat with extended grasslands. The Elands River cuts across Styldrift more or less in the middle (in an east-west diagonal). Note that heavy cotton soils (clay turf) abound in the area (mostly associated with the Elands River) mixed with red sandy soils to the north and south of the farm. Development in the area includes small businesses, houses, small agricultural fields, fences, power lines, roads and water pipelines. Most of the outlying areas are being used by subsistence farmers (for both cattle grazing and agricultural fields).

The vegetation type is Zeerust Thornveld (SVcb3) which forms part of the Savanna Biome (Central Bushveld Bioregion). Erosion in this region is usually low with a few alien species. The altitude is mainly between 1000 – 1250 metres above sea level (Mucina & Rutherford 2006).

It should also be noted that the survey area has been severally disturbed and impacted on by mining activities in the last few years. Large-scale surface disturbances included gravel and tarred roads, evaporation and treatment dams, stock piling and surface clearing and general ground levelling for infrastructure development.

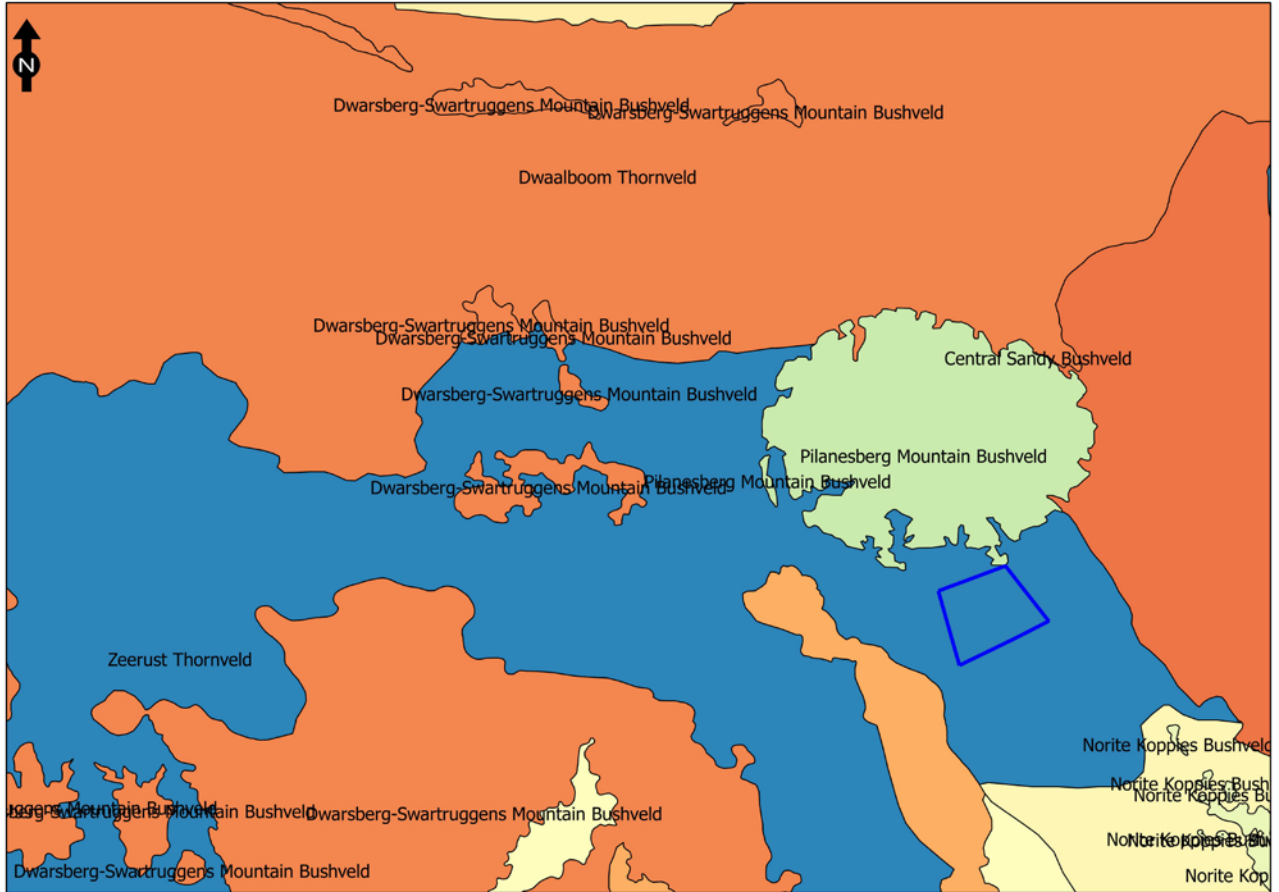


Figure 1: The survey area falls within the Zeerust Thornveld veld type

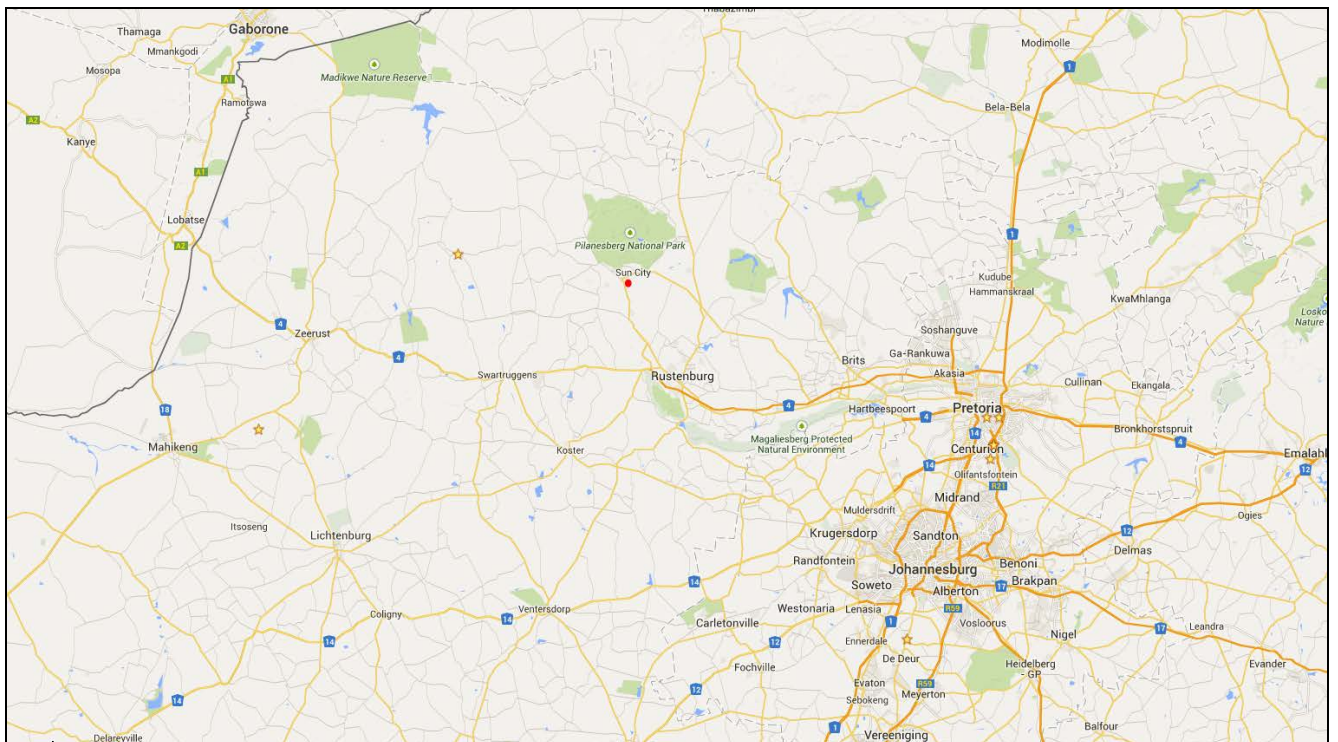


Figure 2: Regional context of the survey area (indicated by the red circle south of Pilanesberg)

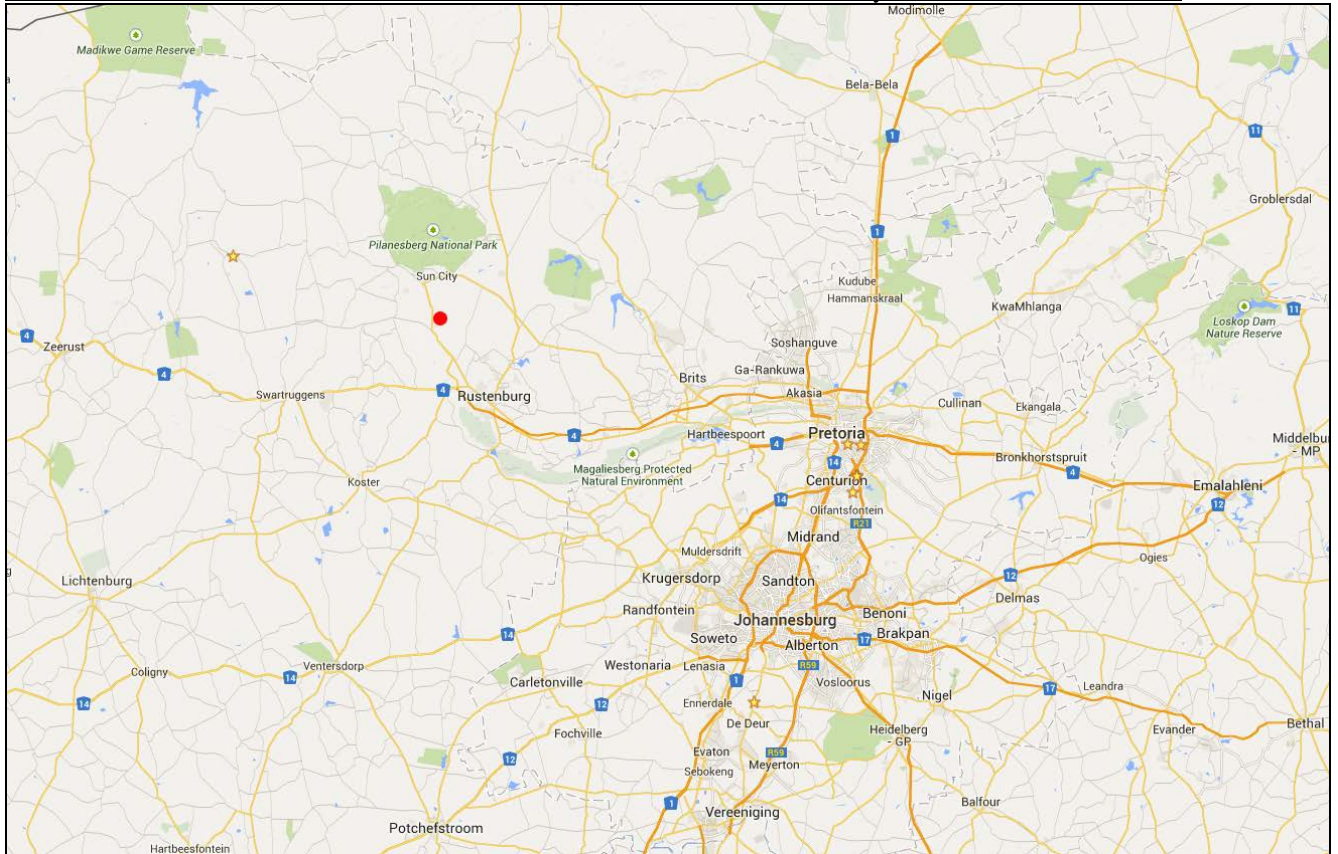


Figure 3: Local context of the survey area (north of Rustenburg)

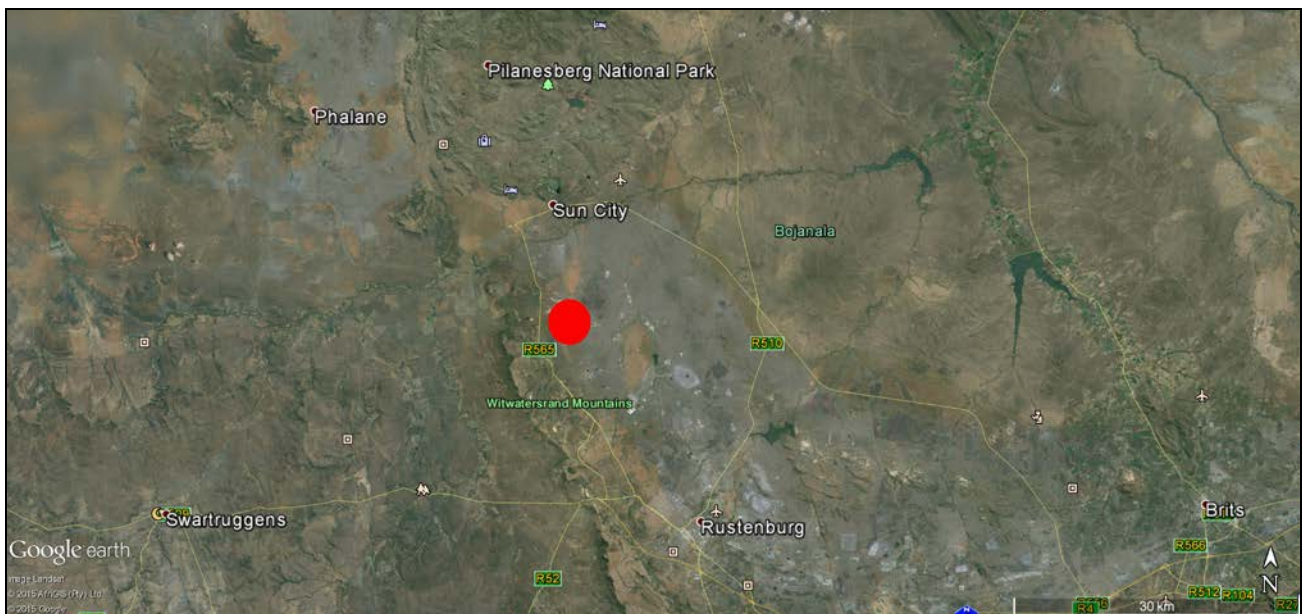


Figure 4: Detail location of the survey area south of the Pilanesberg (Google Earth 2015)

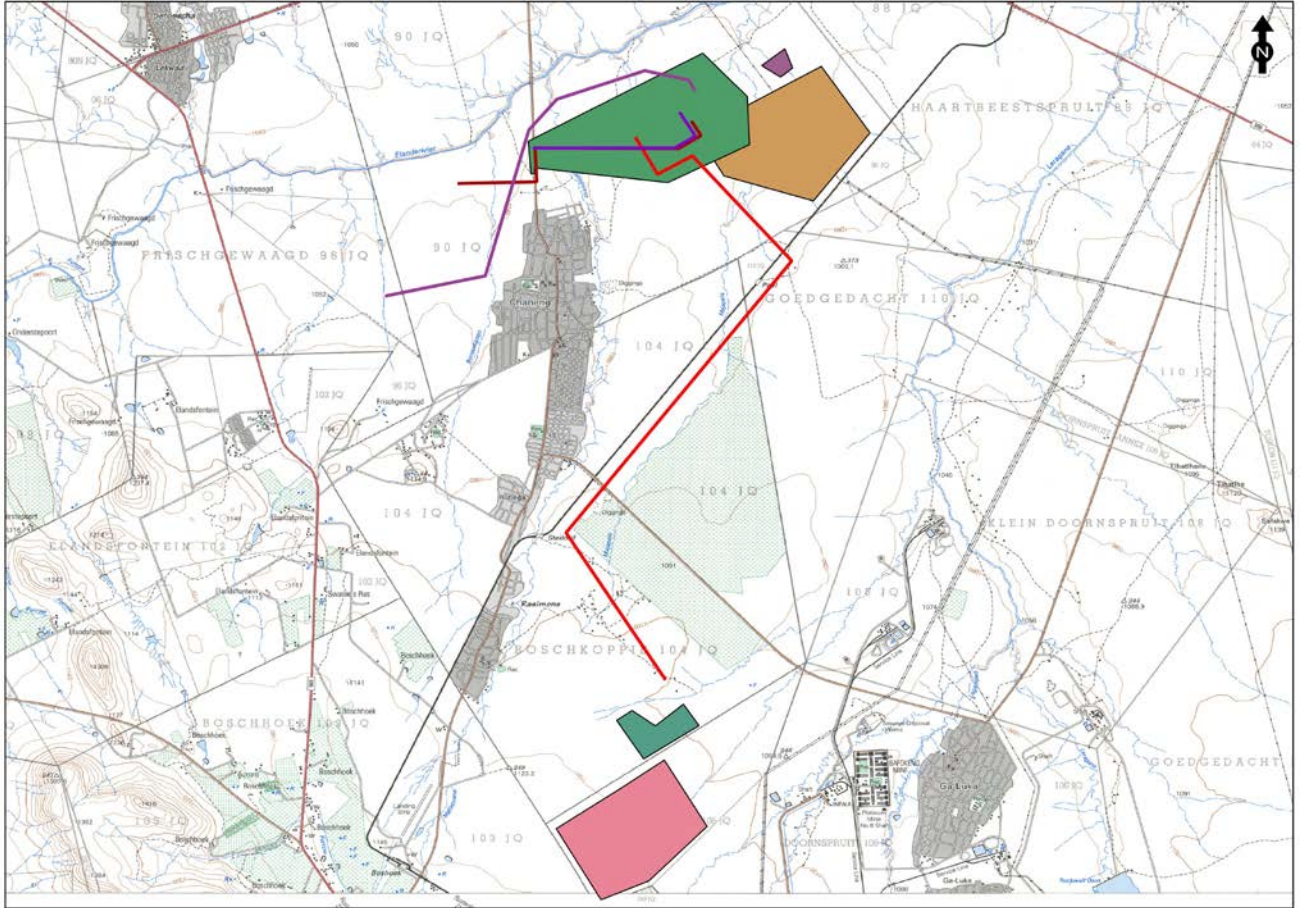


Figure 5: Detail view of the survey areas as indicated on the 1:50 000 topographic map 2527AC

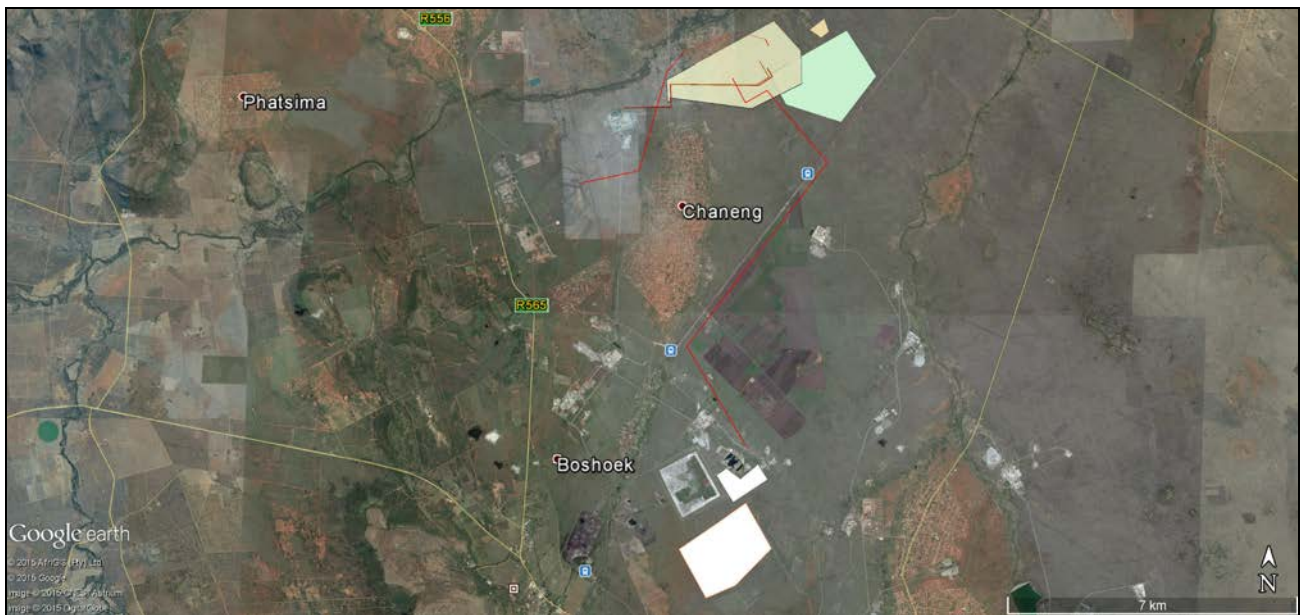


Figure 6: The detail of the survey area as indicated on Google Earth (2015)

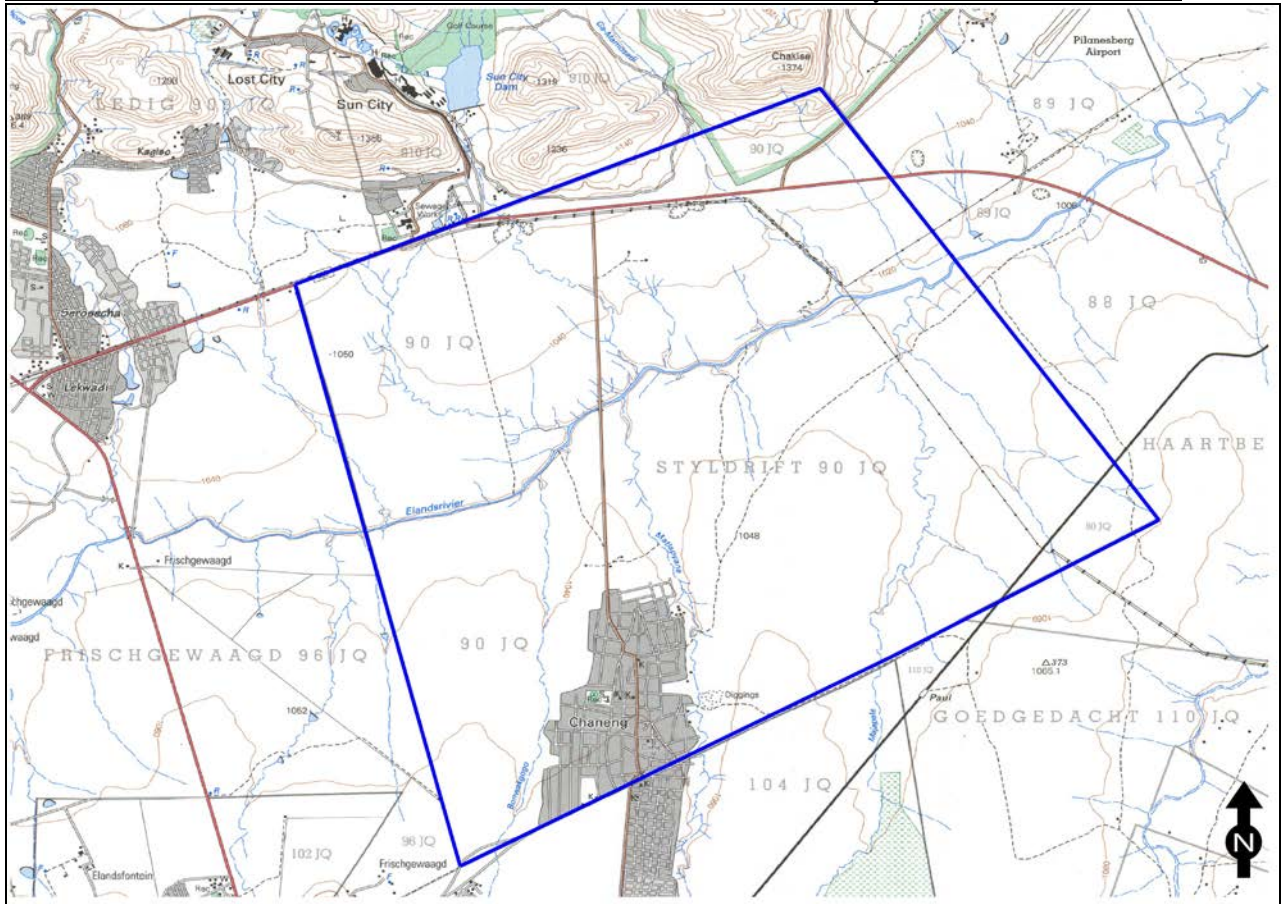


Figure 7: The boundaries of the farm Styldrift 90 JQ



Figure 8: General view of maintenance road along the railway track



Figure 9: General view of the southern region of the survey area



Figure 10: Water retention dam in the southern area of the survey area



Figure 11: General view of the southern region of the survey area



Figure 12: An example of the mining current infrastructure in the south of the survey area



Figure 13: General view of agricultural fields north east of the railway line



Figure 14: General view of the eastern region of the survey area



Figure 15: Rocky outcrops in the southern region of the survey area

4. Proposed Project Activities

RBPlat plans to extend its operations on the Styldrift 90 JQ farm with the construction of the Styldrift No. 2 Shaft. The proposed construction activities associated with the Styldrift No. 2 Shaft Project will take place on the farm Styldrift 90 JQ. It is anticipated that the Styldrift No. 2 Shaft will include the following infrastructure:

- Shaft complex with associated infrastructure with a servitude of approximately 420 hectares (ha);
- Concentrator Plant and concentrator start-up stockpile;
- Construction of a TSF of approximately 330 ha;
- Waste Rock Dump (WRD);
- Construction of a Return Water Dam (RWD) of approximately 12 ha;
- Environmental (topsoil) stockpiles;
- Approximately 7 ventilation shafts associated with the Styldrift No. 2 Shaft. This will include four down cast and three downcast ventilation shafts;
- 13 up cast ventilation shafts to support the Styldrift Shaft 1;
- Potable water supply from the Magalies Water Pipeline to the Styldrift No. 2;
- Access road from the Styldrift No. 2 Shaft intersecting the Chaneng road to the west;
- Internal roads;
- Sewage Treatment Plant with the associated reticulation network;
- Pollution Control Dam (stormwater and shaft excess water);
- Permanent and temporary settling dams (mine return water);
- Dust suppression of the proposed roads, WRD and TSF;
- Construction of a 33kV temporary power line;
- Construction of a 132kV permanent power line connecting to the Ngwedi power station;
- Storage of hazardous materials including bulk fuel storage facilities;
- Explosives magazine; and
- Explosive destruction bay.

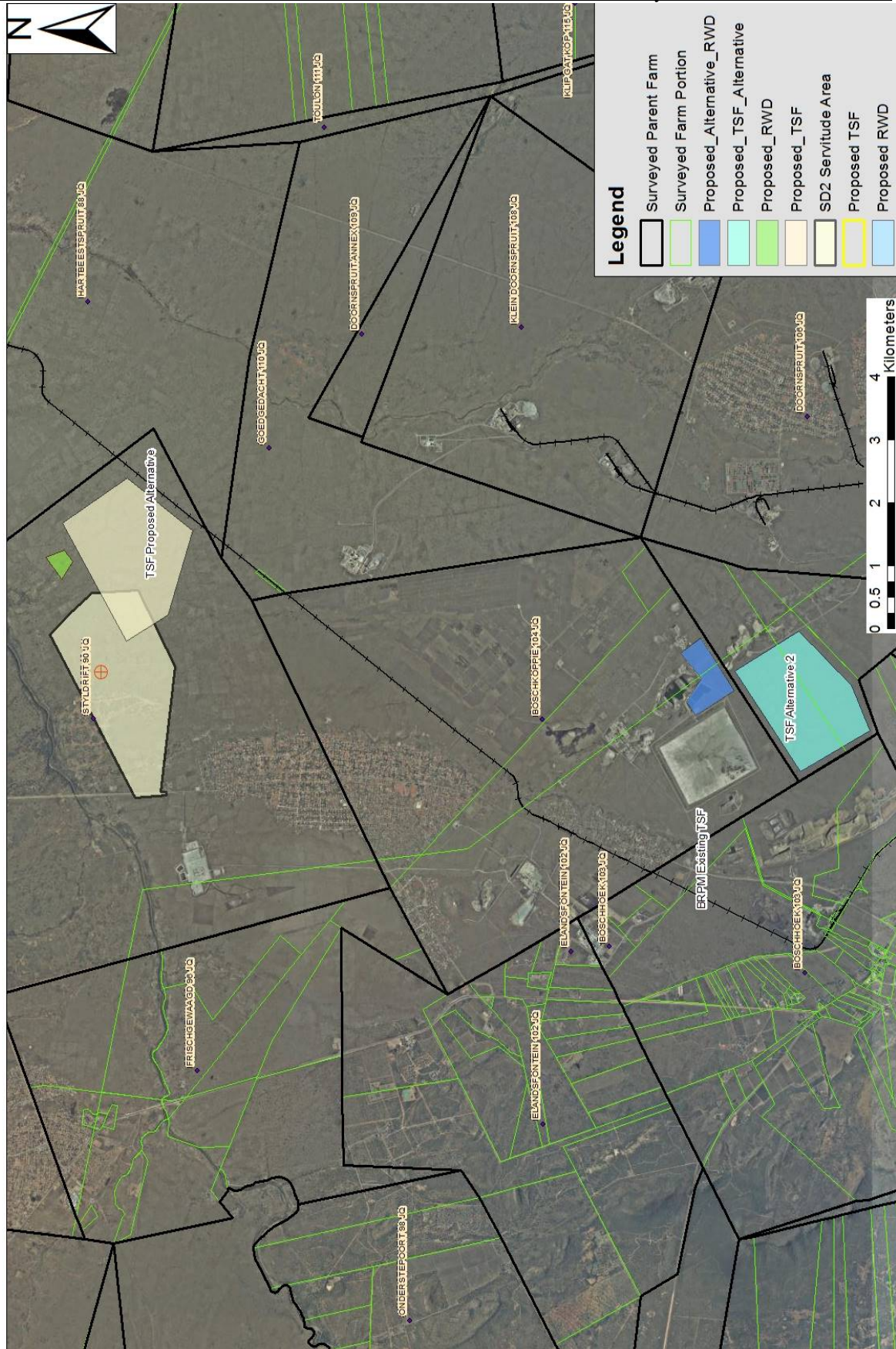


Figure 16: Satellite image with aspects of the proposed mining activities (Shaft 2)

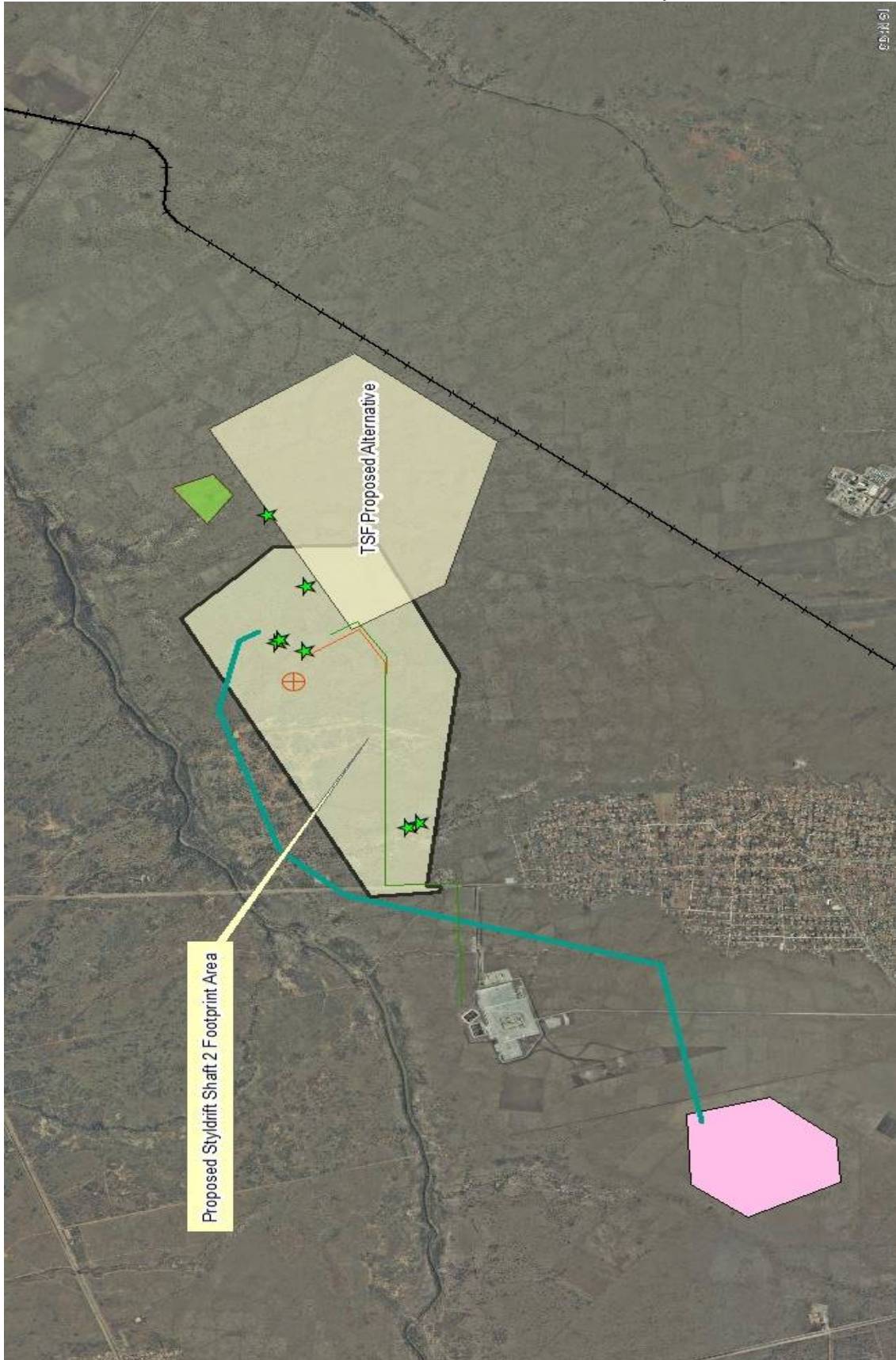


Figure 17: Styldrift Shaft 2 and associated infrastructure

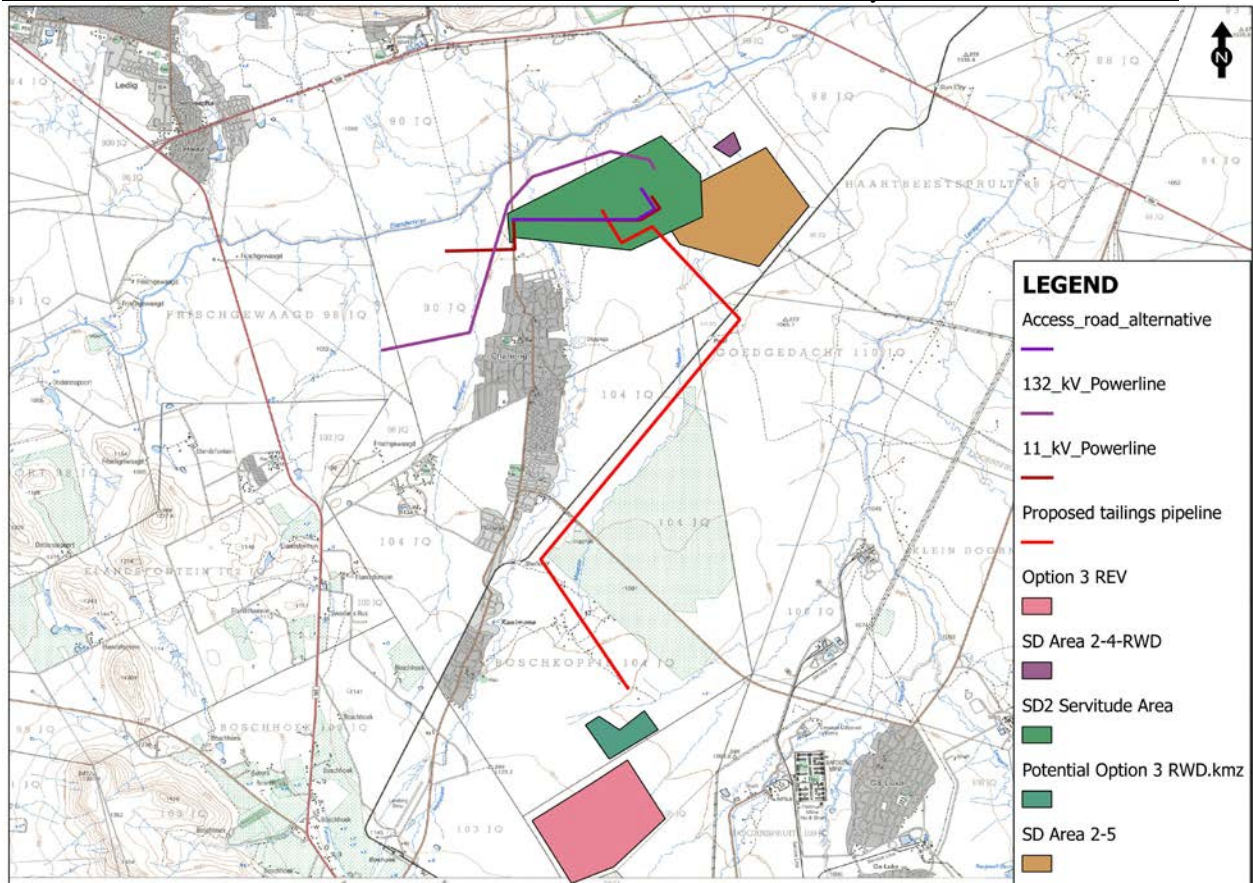


Figure 18: Proposed Styldrift Shaft 2 infrastructure developments indicated on 1:50 000 map 2527AC

5. Legal Framework

- Archaeological remains can be defined as human-made objects, which reflect past ways of life, deposited on or in the ground.
- Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and they are valuable, finite, non-renewable and irreplaceable.
- All archaeological remains, features, structures and artefacts older than 100 years and historic structures older than 60 years are protected by the relevant legislation, in this case the **National Heritage Resources Act (NHRA) (Act No. 25 of 1999, Section 34 & 35)**. The Act makes an archaeological impact assessment as part of an EIA and EMPR mandatory (see **Section 38**). No archaeological artefact, assemblage or settlement (site) may be moved or destroyed without the necessary approval from the **South African Heritage Resources Agency (SAHRA)**. Full cognisance is taken of this Act in making recommendations in this report.
- Cognisance will also be taken of the **Mineral and Petroleum Resources Development Act (Act No 28 of 2002)** and the **National Environmental Management Act (Act No 107 of 1998)** when making any recommendations.

- Human remains older than 60 years are protected by the **NHRA**, with reference to **Section 36**. Human remains that are less than 60 years old are protected by the Regulations Relating to the Management of Human Remains (GNR 363 of 22 May 2013) made in terms of the National Health Act No. 61 of 2003 as well as local Ordinances and regulations.

Mitigation guidelines (The significance of the site):

Rating the significance of the impact on a historical or archaeological site is linked to the significance of the site itself. If the significance of the site is rated high, the significance of the impact will also result in a high rating. The same rule applies if the significance rating of the site is low (also see Table 1).

Significance Rating	Action
Not protected	1. None
Low	2a. Recording and documentation (Phase 1) of site adequate; no further action required
	2b. Controlled sampling (shovel test pits, auguring), mapping and documentation (Phase 2 investigation); permit required for sampling and destruction
Medium	3. Excavation of representative sample, C ¹⁴ dating, mapping and documentation (Phase 2 investigation); permit required for sampling and destruction [including 2a & 2b]
High	4a. Nomination for listing on Heritage Register (National, Provincial or Local) (Phase 2 & 3 investigation); site management plan; permit required if utilised for education or tourism 4b. Graves: Locate demonstrable descendants through social consulting; obtain permits from applicable legislation, ordinances and regional by-laws; exhumation and reinterment [including 2a, 2b & 3]

Table 1: Rating the significance of sites

- With reference to the evaluation of sites, the certainty of prediction is definite, unless stated otherwise.
- The guidelines as provided by the **NHRA (Act No. 25 of 1999)** in Section 3, with special reference to subsection 3, and the Australian ICOMOS (International Council on Monuments and Sites) Charter (also known as the Burra Charter) are used when determining the cultural significance or other special value of archaeological or historical sites.
- It should be kept in mind that archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (*cf.* **NHRA (Act No. 25 of 1999)**, Section 36 (6)).

- **Architectural significance:**
 - Does the site contain any important examples of a building type?
 - Are any of the buildings important examples of a style or period?
 - Do any of the buildings contain fine details and or reflect fine workmanship?
 - Are any of the buildings the work of a major architect or builder?
 - Are the buildings important examples of an industrial, technological or engineering development?
 - What is the integrity of the buildings?
 - Are the buildings still utilised?
 - Has the buildings been altered and are these alterations sympathetic to the original intent of the design?

- **Spatial significance of architecture:**
 - Is the site or any of the buildings a landmark in the city or town?
 - Does the plant contribute to the character of the neighbourhood/region?
 - Do the buildings contribute to the character of the street or square?
 - Is the place or building part of an important group of buildings?

- **Architecture: Levels of significance are:**
 - Protect
 - Highly significant
 - Possible significance
 - Least significance
 - No significance

- **Architecture: Levels of protection are:**

Retain and protect	Considered to be of high significance. The building or structure can be used as part of the development but must be suitably protected. Should not include major structural alterations. If the building is older than 60 years a modification permit is required from SAHRA.
Retain and re-use	Considered to be of moderate significance. The building or structure can be altered to be accommodated within the development plans. Structural alterations can be included. If the building is older than 60 years a modification permit is required from SAHRA.
Alter and re-use	Considered to be of low significance. The building or structure can be structurally altered or destruction can be considered following further documentation. If the building is older than 60 years a modification/destruction permit is required from SAHRA.
Can be demolished	Considered to be of negligible significance and can be demolished. If the building is older than 60 years a destruction permit is required from SAHRA.

Table 2: Level of protection of buildings/structures

- A copy of this report will be lodged with the **SAHRA** as stipulated by the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), Section 38 (especially subsection 4) and the relevant Provincial Heritage Resources Authority (PHRA).
- Note that the final decision for the approval of permits, or the removal or destruction of sites, structures and artefacts identified in this report, rests with the SAHRA (or relevant PHRA).

6. Study Approach/Methods

Regional maps and other geographical information (ESRI shapefiles) were supplied by SRK Consulting. In addition Google images and topographic maps were used to indicate the survey area. The survey area was localised on the 1:50 000 topographic map 2527AC. Please note that all maps are orientated with north facing upwards (unless stated otherwise).

The survey area was preliminary surveyed and selected areas were investigation on foot using both systematic and intuitive pedestrian survey techniques. Local residents were also consulted during ad hoc interviews to determine the location of any known heritage sites, especially graves.

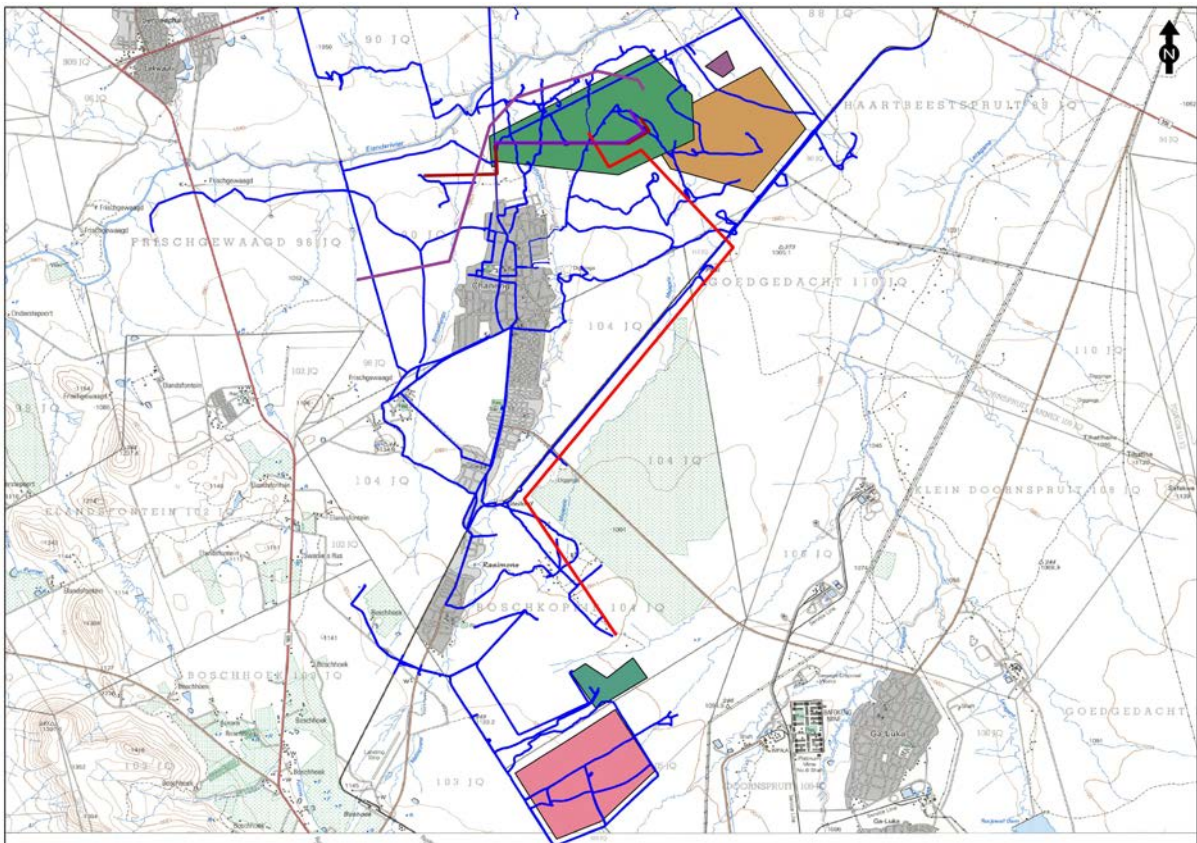


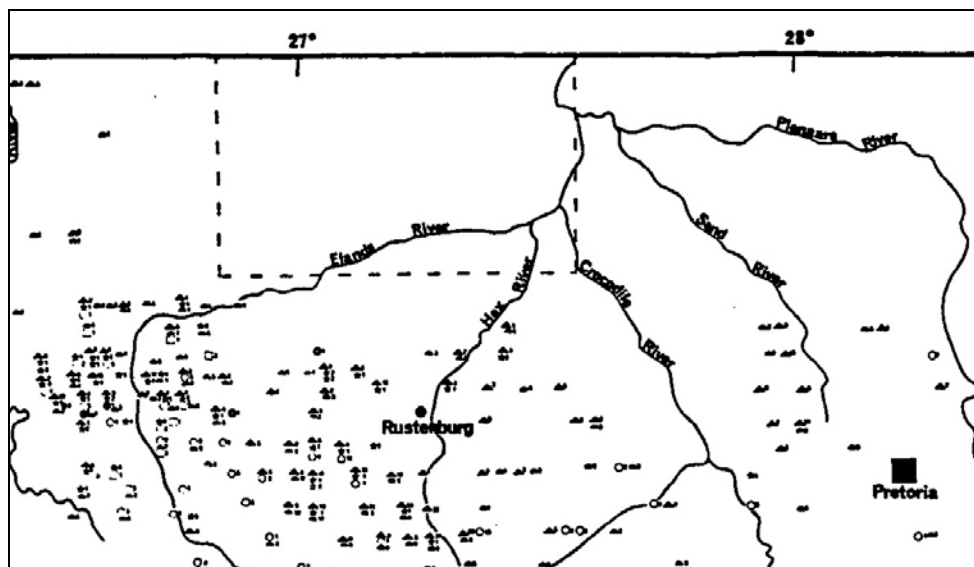
Figure 19: Recorded survey tracks for the project

6.1 Review of existing information/data

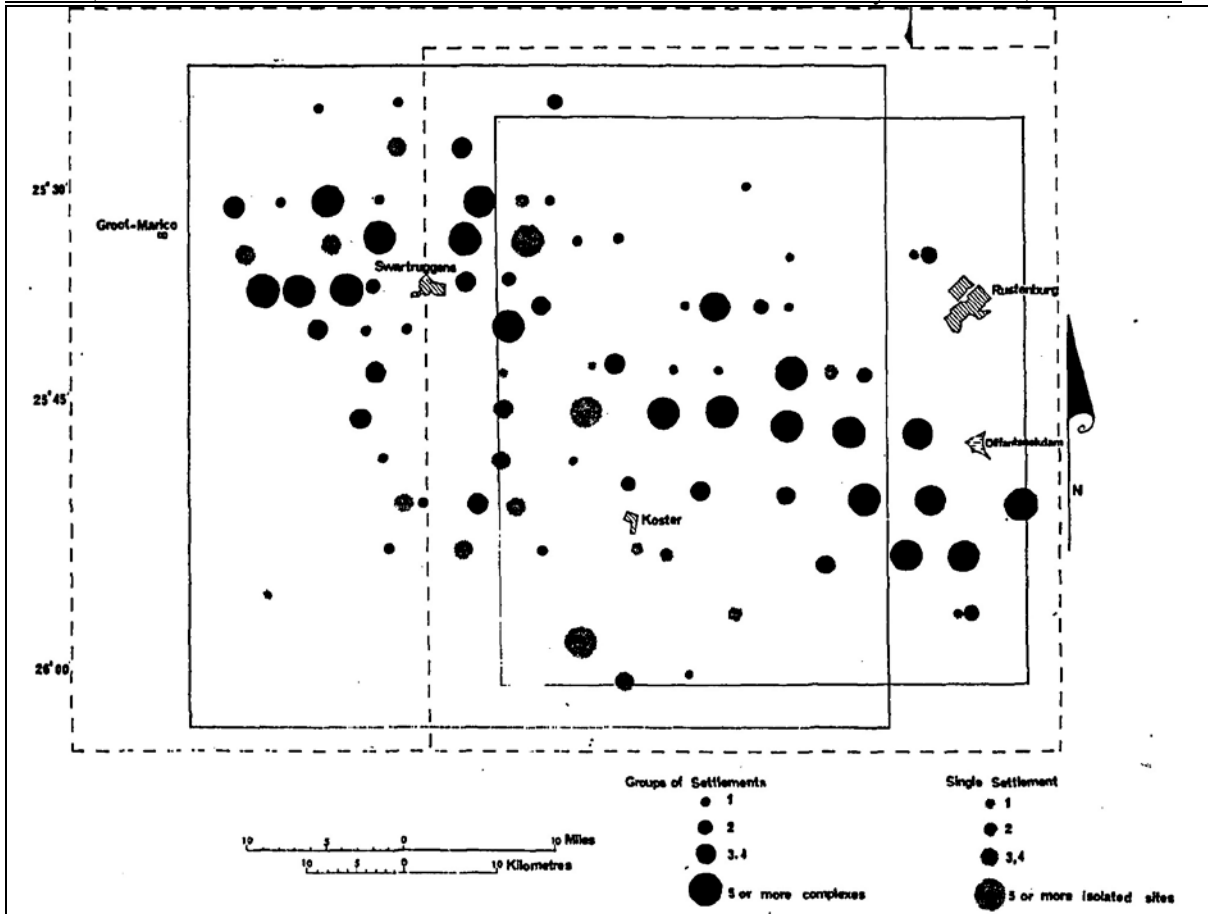
Additional information on the cultural heritage of the area was sourced from the following records:

- National Mapping Project by SAHRA (which lists heritage impact assessment reports submitted for South Africa)
- Online SAHRIS database
- Maps and information documents supplied by the client
- Published material on the area
- Previous heritage survey completed in the area (see Coetzee 2012a & 2012b, 2015; Pistorius 2001 & 2003)

Two major regional aerial archaeological surveys were conducted in the 1960s by archaeologists Revil Mason and JD Seddon both of which were published 1968. Although the focal point of these surveys falls just outside the current survey area they do provide an indication of the type and number of sites that occur in the general region (Mason 1968 & Seddon 1968).



Map 7: The location of sites recorded by Mason's aerial survey (1968)



Map 8: The location of sites recorded by Seddon's aerial survey (1968)

The Surveyor General's database shows that the farm Boschkoppie 104 JQ was first surveyed in 1894 and the farm Styldrift 90 JQ in 1896 (see Addendum 3). The first title deed was granted to W. Grobler, F. Robbertse and Meintjies in February 1896. The map, therefore, confirms several clusters of occupation by 1896 which later became known as Chaneng. It seems that Rasimone also has a late 19th century origin with the original settlement starting in 1894.

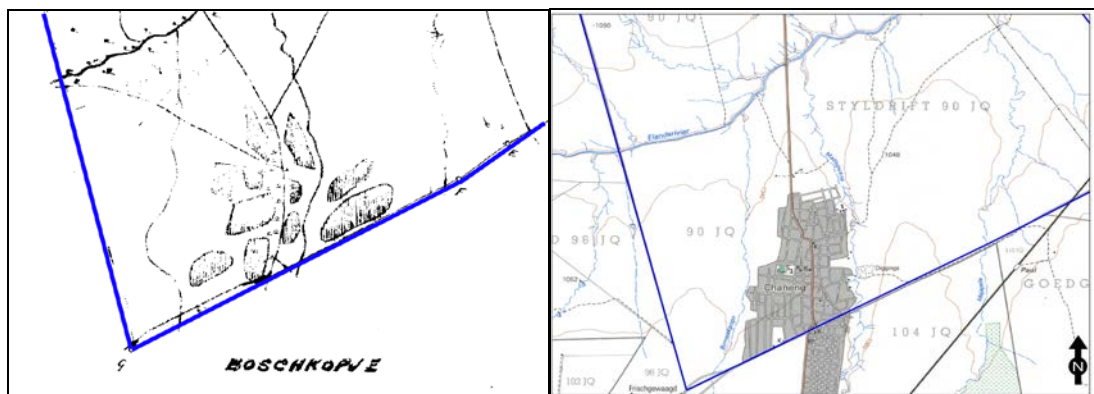


Figure 20: A map of Styldrift 90 JQ in 1896 confirming the existence of clusters of earlier settlements that later consolidated to become what is today Chaneng

Today Chaneng and Rasimone have expanded and are almost completely linked with Robega in the middle. As no early 20th historical structures were recorded in the survey area the farm was probably used for additional farming activities (agricultural fields and pastures) and no farm house complex was built. The 1980s topographic map seems to confirm that the area was mostly used as agricultural fields and was probably extensively farmed for several decades. However, all the records and other studies confirmed that several known historically and archaeologically significant structures or settlements have been recorded in the immediate region.

6.2 Site visits

Information from several existing reports focussing on the area was complemented by site investigations that took place on 29 March 2015 and 16 May 2015.

6.3 Impact assessment

The criteria used to describe heritage resources and to provide a significance rating of recorded sites are listed in the NHRA (Act No. 25 of 1999) specifically Section 7(7) and Section 38. SAHRA also published various regulations including: Minimum standards: Archaeological and palaeontological components of impact assessment reports in 2006 and updated requirements in 2012.

6.4 Assumptions, restrictions and gaps in knowledge

No severe physical restrictions were encountered as access to the mining area was granted by RBPlat. However, please note that due to the subterranean nature of cultural remains this report should not be construed as a record of all archaeological and historic sites in the area. A general assumption that was confirmed during the survey is that Iron Age settlements generally do not occur on clay rich cotton soils.

6.5 Informants/Local Residents

The recording of local oral geographies was primarily facilitated by Robert Kabelo Molote of the Chaneng Tribal Office. Several members of the local community (residents of the farm Styldrift) also assisted with identifying heritage sites and graves in the area. Johannes Ntibane Tau also provided invaluable assistance with the fieldwork process. Special mention is made of the following local residents (also see Coetzee 2012b):

- Noah Ramothibedi Moseki
- John Molefe Katane
- Joshua Raphata
- Stephen Shimaboy Sedikwe
- John Mothosa Kola
- August Rooi Modibedi
- Rooi Thomas Putu

Also several officials from the local community:

- Killer Nakedi Motene

- Sengalale Frederick Magano
- Councillor Reneiloe Masilo
- Chris Senne

7. Description and Evaluation of Cultural Heritage Sites

Please note that although a total of 39 sites were identified during previous surveys, this report will only focus on sites that are located inside the demarcated footprints of the Styldrift Shaft 2 project. As a result a total of 13 sites will be discussed in terms of possible impact and mitigation measures (see Addendum 2 for further details). These sites are the following:

- Sites 1 – 4 [Graves];
- Site 6 [Graveyard];
- Site 11 [Graves];
- Site 22/GY01 [Large Graveyard];
- Sites 25 – 29 [Graves]; and
- Site 30 [Stone-walled Enclosure].

Please note that the survey did not reveal any Iron Age settlements, features, structures or assemblages (artefact scatters).

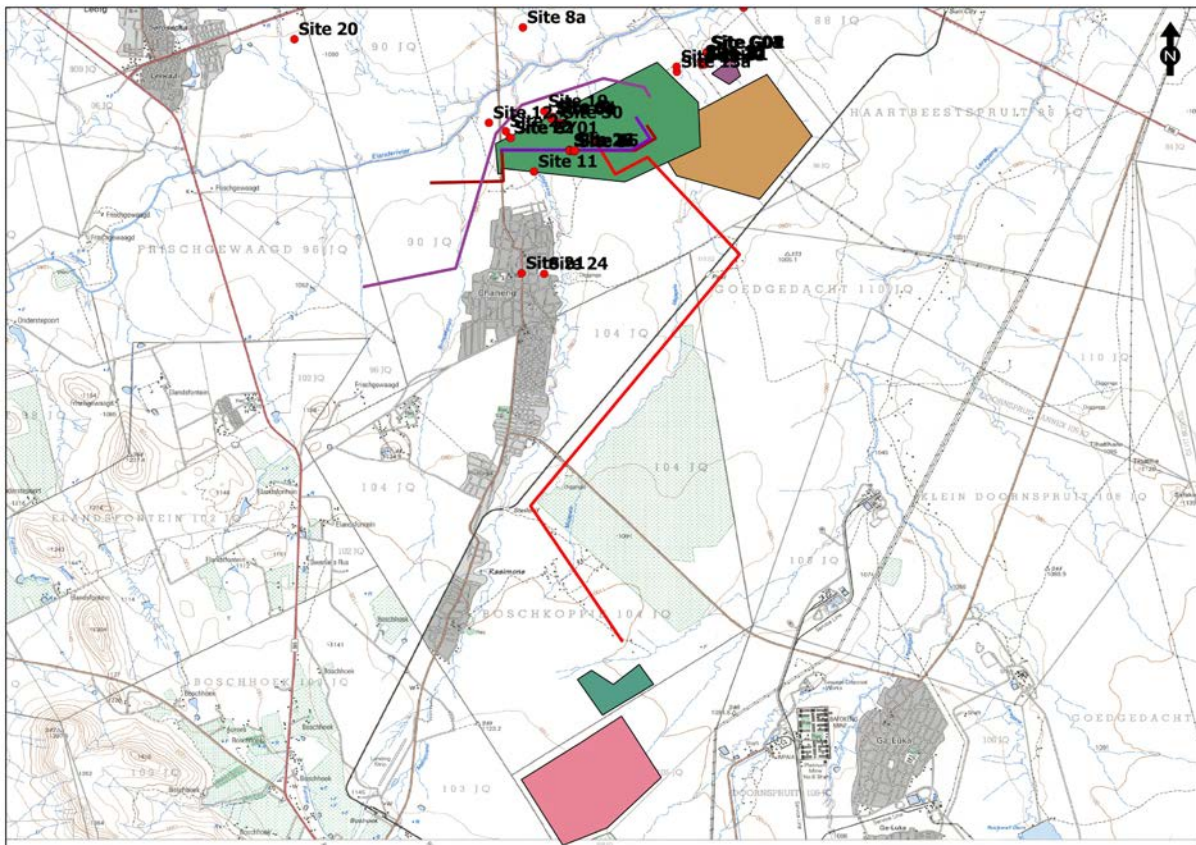


Figure 21: Location of the recorded heritage sites recorded during the survey

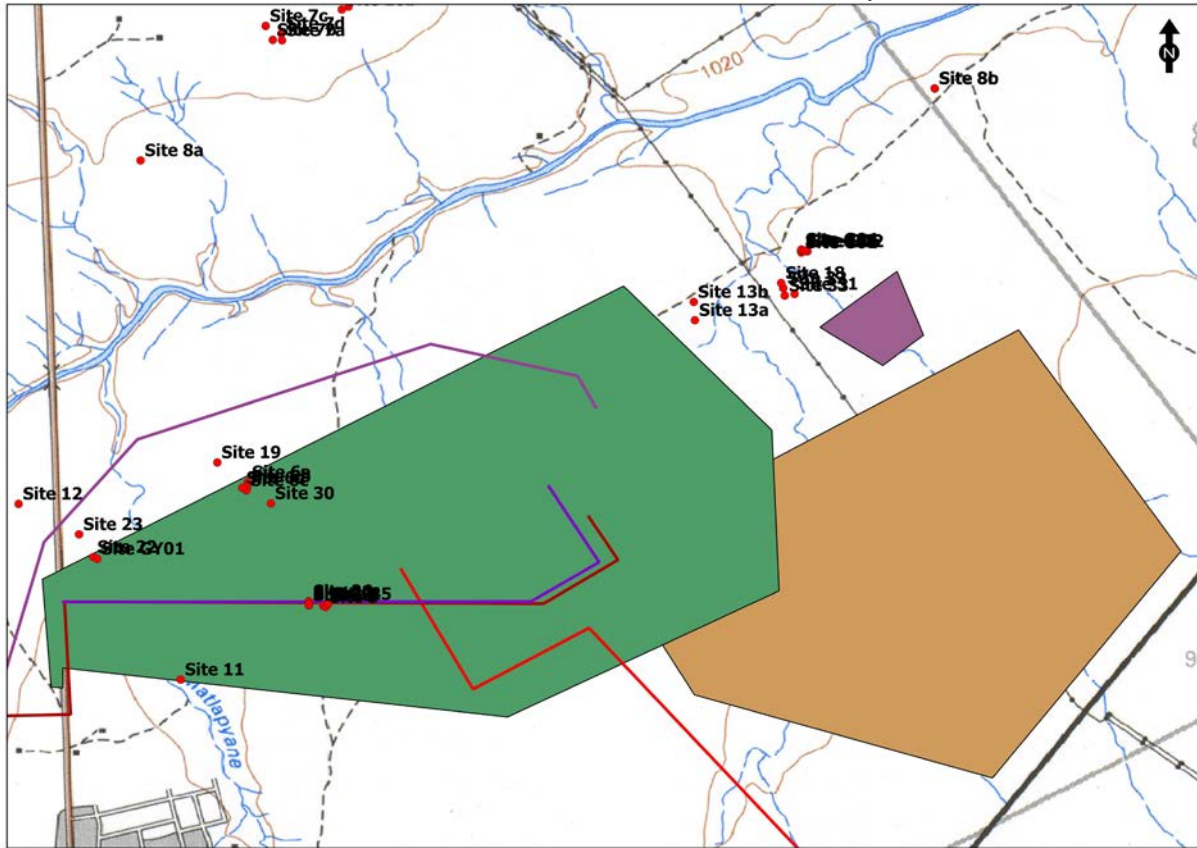


Figure 22: View of the northern region of the survey area where the heritage sites are located

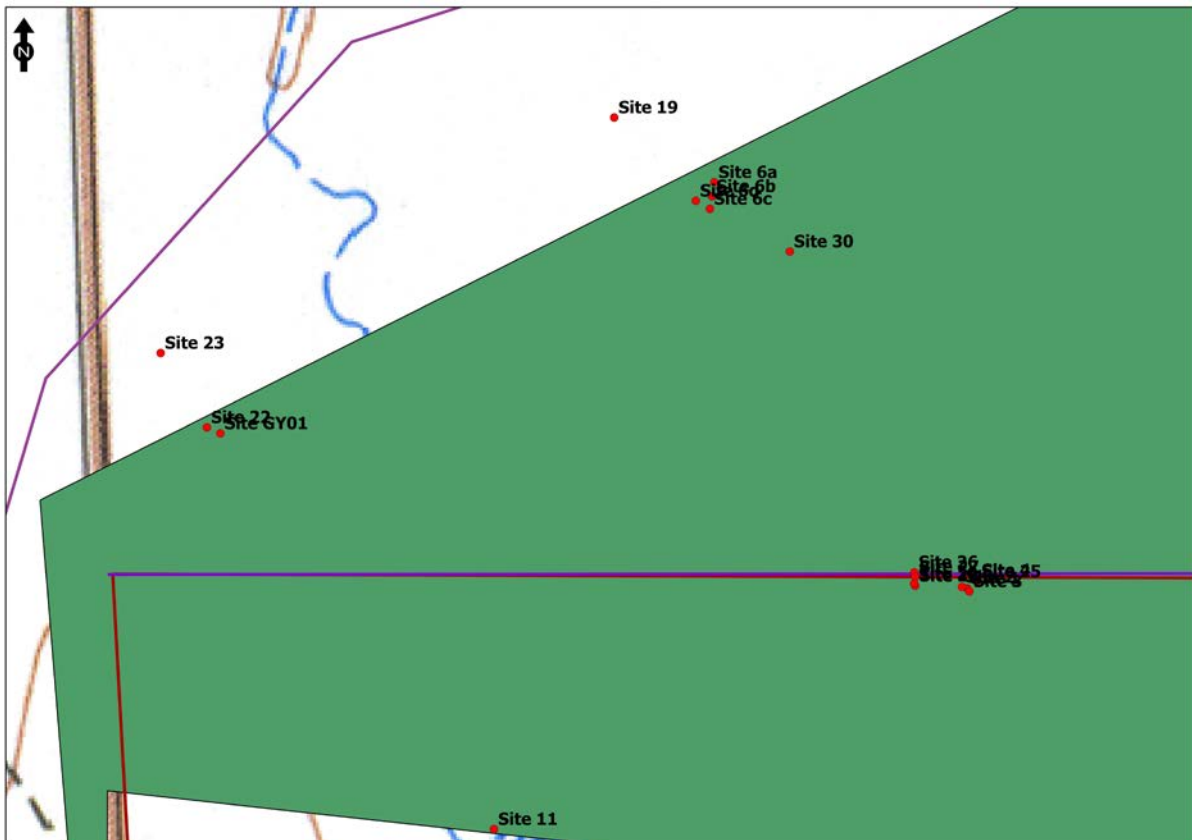


Figure 23: Detail of the area with heritage sites

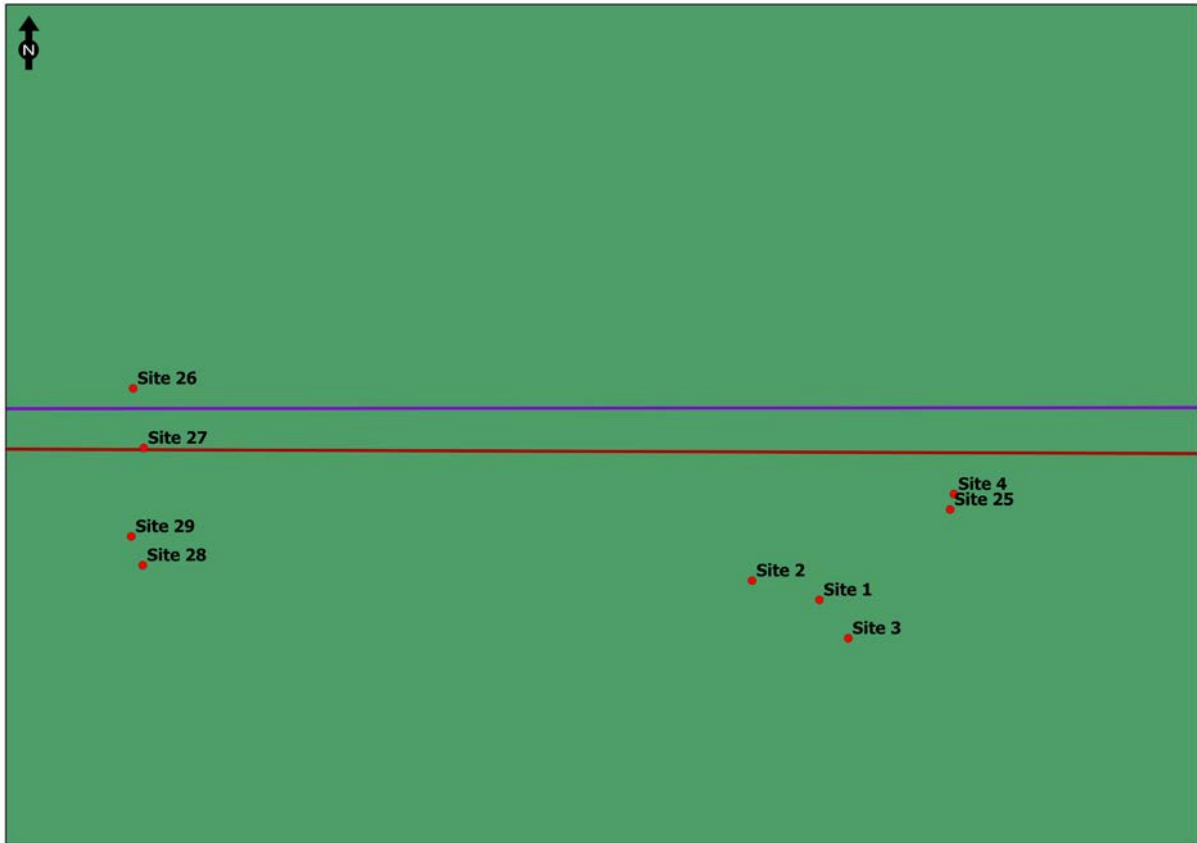


Figure 24: Zoomed-in detail of the sites located in area

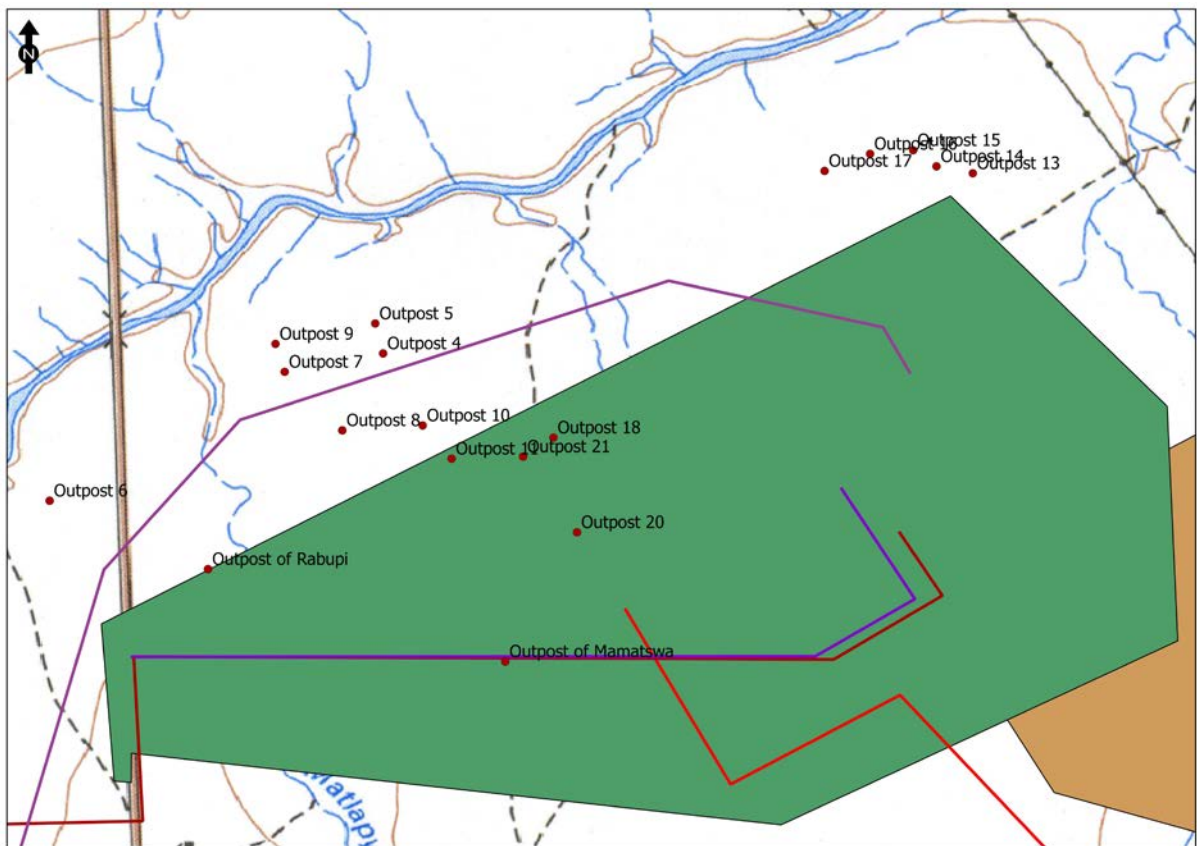


Figure 25: Location of the currently occupied cattle outposts in the survey area

During the survey a number of cattle outposts and currently occupied settlements were recorded.

Site No	Site Type	Significance Rating
Site 1	Grave	High: Specific community Generally Protected A
Site 2	Grave	High: Specific community Generally Protected A
Site 3	Grave	High: Specific community Generally Protected A
Site 4	Grave	High: Specific community Generally Protected A
Site 5	Two Graves	High: Specific community Generally Protected A
Site 6	Graveyard	High: Specific community Generally Protected A
Site 7	House foundations	Low: Specific community Generally Protected C
Site 8	House remains	Low: Specific community Generally Protected C
Site 9	House remains	Low: Specific community Generally Protected C
Site 10	House remains & Grave	High: Specific community Generally Protected A
Site 11	Two Graves	High: Specific community Generally Protected A
Site 12	Foundations of structure Three Graves	High: Specific community Generally Protected A
Site 13	Early Stone Age Site	Medium: Local Generally Protected B
Site 14	Grave	High: Specific community Generally Protected A
Site 15	Grave	High: Specific community Generally Protected A
Site 16	Veranda (house) foundation	Low: Specific community Generally Protected C
Site 17	Historic house remains	Low: Specific community Generally Protected C
Site 18	Two historic houses	Low: Specific community Generally Protected C
Site 19	Two Graves (possible)	High: Specific community Generally Protected A
Site 20	Four Graves (possible)	High: Specific community Generally Protected A
Site 21	Historic Site (Church building)	Medium: Specific community Generally Protected B
Site 22	Large Graveyard	High: Specific community Generally Protected A

Site 23	Large Graveyard	High: Specific community Generally Protected A
Site 24	Large Cemetery	High: Specific community Generally Protected A
Site 25	Grave	High: Specific community Generally Protected A
Site 26	Grave	High: Specific community Generally Protected A
Site 27	Grave	High: Specific community Generally Protected A
Site 28	Grave	High: Specific community Generally Protected A
Site 29	Grave	High: Specific community Generally Protected A
Site 30	Stone-walled kraal	Low: Specific community Generally Protected C
Site 31	House foundation	Low: Specific community Generally Protected C
Site 32	House foundation	Low: Specific community Generally Protected C
Site 33	Stone-walled kraal Possible grave	High: Specific community Generally Protected A
GY01	Graveyard	High: Specific community Generally Protected A
G01	Grave (possible)	High: Specific community Generally Protected A
G02	Grave (possible)	High: Specific community Generally Protected A
G03	Grave (possible)	High: Specific community Generally Protected A
G04	Grave (possible)	High: Specific community Generally Protected A
G05	Grave (possible)	High: Specific community Generally Protected A

Table 3: Description and evaluation of the recorded sites

8. Summary of Site Locations

Site No	Coordinates
Site 1	25.389960°S 27.131870°E
Site 2	25.389940°S 27.131800°E
Site 3	25.390000°S 27.131900°E
Site 4	25.389850°S 27.132010°E
Site 5	25.356880°S 27.137620°E

Site 6a	25.384460°S 27.128450°E
Site 6b	25.384650°S 27.128420°E
Site 6c	25.384820°S 27.128390°E
Site 6d	25.384710°S 27.128200°E
Site 7a	25.364850°S 27.129970°E
Site 7b	25.364830°S 27.129560°E
Site 7c	25.364210°S 27.129240°E
Site 7d	25.364550°S 27.129940°E
Site 8a	25.370180°S 27.123690°E
Site 8b	25.366990°S 27.158940°E
Site 8c	25.366980°S 27.158930°E
Site 9	25.361660°S 27.127940°E
Site 10a	25.363350°S 27.132920°E
Site 10b	25.363480°S 27.132620°E
Site 11	25.393220°S 27.125470°E
Site 12	25.385420°S 27.118280°E
Site 13a	25.377270°S 27.148290°E
Site 13b	25.376460°S 27.148240°E
Site 14	25.359350°S 27.139790°E
Site 15	25.358490°S 27.140340°E
Site 16	25.357780°S 27.140840°E
Site 17	25.359390°S 27.145270°E
Site 18	25.375620°S 27.152120°E
Site 19	25.383583°S 27.127097°E

Site 20	25.372068°S 27.087210°E
Site 21	25.409470°S 27.123480°E
Site 22	25.387779°S 27.121588°E
Site 23	25.386772°S 27.120962°E
Site 24	25.409558°S 27.127103°E
Site 25	25.389866°S 27.132006°E
Site 26	25.389740°S 27.131156°E
Site 27	25.389802°S 27.131167°E
Site 28	25.389924°S 27.131166°E
Site 29	25.389894°S 27.131154°E
Site 30	25.385398°S 27.129471°E
Site 31	25.376105°S 27.152712°E
Site 32	25.375842°S 27.152209°E
Site 33	25.376175°S 27.152279°E
GY01	25.387860°S 27.121770°E
G01	25.374267°S 27.153017°E
G02	25.374217°S 27.153283°E
G03	25.374183°S 27.153000°E
G04	25.374133°S 27.153017°E
G05	25.374183°S 27.153167°E

Table 4: Summary of site coordinates

9. Recommendations and Conclusions

Archaeological remains

No Iron Age structures, features, assemblages or artefacts were recorded during the survey. The extensive Early Stone Age manufacturing assemblage (Site 13) falls outside footprint of the proposed Shaft 2 area and no impact is foreseen.

Historical Structures

A number of cattle outposts and currently occupied settlements were recorded. The removal of these people will entail a social consultation process.

Graveyard and Graves

A total of 12 sites that range from individual and cluster of graves to extensive graveyards were recorded during the survey and falls within the footprint of the proposal development. All these locations should be fenced off to prevent any impact during the construction and production phases of the development. If the graves are to be exhumed and reburied, it will entail a Phase 2 investigation which will require a social consultation process and the application of the required permits.

Conclusion and Recommendations

Based on the assessment, it is proposed that mining activities can only be allowed to continue if any impact on these site are prevented or the recommended mitigation measures are enacted and by also taking cognizance of the following as aspects:

Archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (*cf.* **NHRA (Act No. 25 of 1999)**, Section 36 (6)).

10. References

Breutz, P.-L. 1953. *The Tribes of Rustenburg and Pilanesberg Districts*. Pretoria: Government Printer.

Breutz, P.-L. 1989. *History of the Batswana*. Ramsgate.

Coetzee, F.P. 2010. *Cultural Heritage Survey of the Proposed Mogwase (Ngwedi) Substation and Associated Transmission Turn-Ins, North West Province*. Unpublished Report lodged at the Department of Anthropology & Archaeology, University of South Africa.

Coetzee, F.P. 2012a. *Assessment of Archaeological Sites and Specific Graves on the Farm Styldrift 90 IQ, Royal Bafokeng Platinum Mine (RBPM), North West Province*. Unpublished Report.

Coetzee, F.P. 2012b. *Cultural Heritage Survey of the Farm Styldrift 90 JQ*. Unpublished Report lodged at the Department of Anthropology & Archaeology, University of South Africa.

Coetzee, F.P. 2015. *Cultural Heritage Assessment for the Amendment to the Environmental Management Programme for the Proposed Tailings Storage Facility (TSF) and Associated Infrastructure at Royal Bafokeng Platinum Styldrift Mine Complex, Rustenburg Local Municipality, Bojanala District Municipality, North West Province*. Unpublished Report lodged at the Department of Anthropology & Archaeology, University of South Africa.

Coulthard-Clark, C. 1998. *Where Australians Fought - The Encyclopaedia of Australia's Battles*, Allen and Unwin, Sydney

Ellenberger, D.F. 1912 (facsimile reprint 1992). *History of the Basuto: Ancient and Modern*. Morija: Morija Museums & Archives.

Ellenberger, V. 1939. History of the Batlôkwa of Gaberones (Bechuanaland Protectorate). *Bantu Studies*. Vol. 13 (3). pp. 165-198.

Legassick, M. 1978. The Sotho-Tswana Peoples before 1800. In Thompson, L. (ed) *African Societies in Southern Africa*. London: Heinemann.

Mathoho, N. E. 2012. Investigation for the Proposed Establishment of 132kV Power Line Turn Off to Styldrift Substation within the Jurisdiction of Moses Kotane Local Municipality, Bojanala Platinum District, North West Province. Unpublished report by Vhufa Hashu Heritage Consultants.

Mucina, L. & Rutherford, M.C. 2010. *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*. Pretoria: South African National Biodiversity Institute.

National Heritage Resources Act. Act no 25 of 1999. Government Printer: Pretoria.

Pistorius, J.C.C. 2001. An Archaeological Impact Assessments Study for the Rasomore Platinum Mine on the Farms Boschkoppie 104 JQ and Styldrift 90 JQ in the North-West Province of South Africa: Amendment to the Current Environmental Management Programme. Unpublished Report.

Pistorius, J.C.C. 2003. A Heritage Impact Assessment (HIA) for the SA Ferrochrome's New Proposed Expansion Operations in Boschhoek, North of Rustenburg in the North-West Province of South Africa. Unpublished Report.

Pistorius, J.C.C. 2008. Report of Monitoring a Seismic Survey for Heritage Sites on Styldrift 90 near the Pilanesberg in the North-West Province of South Africa. Unpublished report prepared for Angloplats (RBPlat).

SAHRIS Website: www.sahra.org.za (accessed January 2015)

Schapera, I. 1952. *The Ethnic Composition of Tswana Tribes*. Monographs on Social Anthropology No. 11. The London School of Economics and Political Science.

South African Heritage Resources Agency (SAHRA). Report Mapping Project. Version 1.0, 2009

Transvaal Native Affairs Department (TNAD). 1968. *Short History of the Native Tribes of the Transvaal*. Pretoria: The State Library.

Van der Walt, J. 2007. Wesizwe Heritage Impact Assessment: Proposed Platinum Mining on the Portions of the Farms Ledig 909 JQ, Frischgewaagd 96 JQ and Mimosa 81 JQ, North West Province. Unpublished report Wits Commercial Enterprises (Pty) Ltd, Matakoma-ARM.

Addendum 1: Archaeological and Historical Sequence

The table provides a general overview of the chronological sequence of the archaeological periods in South Africa.

PERIOD	APPROXIMATE DATE
Early Stone Age	More than c. 2 million years ago - c. 250 000 years ago
Middle Stone Age	c. 250 000 years ago – c. 25 000 years ago
Later Stone Age (Includes San Rock Art)	c. 25 000 years ago - c. AD 200 (up to historic times in certain areas)
Early Iron Age	c. AD 400 - c. AD 1025
Late Iron Age (Stonewalled sites)	c. AD 1025 - c. AD 1830 (c. AD 1640 - c. AD 1830)

Archaeological Context

Stone Age Sequence

Concentrations of Early Stone Age (ESA) sites are usually present on the flood-plains of perennial rivers and may date to over 2 million years ago. These ESA open sites may contain scatters of stone tools and manufacturing debris and secondly, large concentrated deposits ranging from pebble tool choppers to core tools such as handaxes and cleavers. The earliest hominins who made these stone tools, probably not always actively hunted, instead relying on the opportunistic scavenging of meat from carnivore kill sites.

Middle Stone Age (MSA) sites also occur on flood plains, but are also associated with caves and rock shelters (overhangs). Sites usually consist of large concentrations of knapped stone flakes such as scrapers, points and blades and associated manufacturing debris. Tools may have been hafted but organic materials, such as those used in hafting, seldom preserve. Limited drive-hunting activities are also associated with this period.

Sites dating to the Later Stone Age (LSA) are better preserved in rock shelters, although open sites with scatters of mainly stone tools can occur. Well-protected deposits in shelters allow for stable conditions that result in the preservation of organic materials such as wood, bone, hearths, ostrich eggshell beads and even bedding material. By using San (Bushman) ethnographic data a better understanding of this period is possible. South African rock art is also associated with the LSA.

Iron Age Sequence

In the northern regions of South Africa at least three settlement phases have been distinguished for early prehistoric agropastoralist settlements during the **Early Iron Age** (EIA). Diagnostic pottery assemblages can be used to infer group identities and to trace movements across the landscape. The first phase of the Early Iron Age, known as **Happy**

Rest (named after the site where the ceramics were first identified), is representative of the Western Stream of migrations, and dates to AD 400 - AD 600. The second phase of **Diamant** is dated to AD 600 - AD 900 and was first recognized at the eponymous site of Diamant in the western Waterberg. The third phase, characterised by herringbone-decorated pottery of the **Eiland** tradition, is regarded as the final expression of the Early Iron Age (EIA) and occurs over large parts of the North West Province, Northern Province, Gauteng and Mpumalanga. This phase has been dated to about AD 900 - AD 1200. These sites are usually located on low-lying spurs close to water.

The **Late Iron Age** (LIA) settlements are characterised by stone-walled enclosures situated on defensive hilltops c. AD 1640 - AD 1830). This occupation phase has been linked to the arrival of ancestral Northern Sotho, Tswana and Ndebele (Nguni-speakers) in the northern regions of South Africa with associated sites dating between the sixteenth and seventeenth centuries AD. The terminal LIA is represented by late 18th/early 19th century settlements with multichrome Moloko pottery commonly attributed to the Sotho-Tswana. These settlements can in many instances be correlated with oral traditions on population movements during which African farming communities sought refuge in mountainous regions during the processes of disruption in the northern interior of South Africa, resulting from the so-called *difaqane* (or *mfecane*).

Ethno-historical Context

Pilanesberg is an eroded circular volcanic intrusion into the low-lying Bushveld Complex. The result is a mountainous region which stands in stark contrast to the surrounding open plains, creating a unique enclave for occupation and utilisation. Rivers flowing from the centre to the periphery of Pilanesberg exacerbated by extensive surface movement caused by dykes and faults have resulted in valleys which provide accessible pathways into the centre of the structure. Access to Pilanesberg was controlled by positioning extensive settlements at the periphery of Pilanesberg near the entrance to these pathway-like valleys.

According to oral tradition the Bakgatla бага Kgafela separated from the Moseitlha at Momusweng near the Hammanskraal district (north-east of Pretoria) around AD 1700. As one of five Bakgatla groups, this separation heralded in a period of independence and extensive sojourn for the Kgafela people. The Kgafela settled at various locales on their north-western journey towards the Crocodile (Odi) River and eventually arrived in the Pilanesberg area between AD 1700 and AD 1750. Chief Pilane, ruler of the Kgafela people (after whom the Pilanesberg Mountains was named) reigned between AD 1825 and 1859.

However, on their arrival in the region the Batlhako were already settled in the area and ruled the territory between the Crocodile River and Pilanesberg. Oral history links several stone-walled settlements, at Pilwe mountain south-east of Pilanesberg, with earlier Batlhako occupation. Further to the south the Bafokeng ruled over the region north of Rustenburg with the northern border demarcated by the Elands River (south of the Pilanesberg).

Another group that settled in the area is the Batlokwa, who lived more towards the south west of Pilanesberg Mountains. The Batlokwa are, according to their own tradition, yet another offshoot of the Bakgatla (Legassick 1978:104; Schapera 1952:10). As discussed above Tabane and Mathulare had five sons, namely: Diale (or Liale), Khetsi (Kgetsi), Matsibolo, Khoali (Khoadi or Kgwadi) and Mosia. Of relevance to this discussion is Kgwadi (the fourth

son) who separated from the main group, then ruled by Matlaisane (who became the Bakgatla baga Motšha) with his followers (in *circa* AD 1570) who eventually constituted the Batlokwa (See 2.1.1). Moreover, David-Frederic Ellenberger relates that the Batlokwa also eventually split into two separate sections. Kgwadi remained in the north but Molatodi (Molatudi), the son of Molefe (reigned five generations after Kgwadi), seceded in *circa* AD 1690 and moved to the south (Wakkerstroom). Molatodi's southern Batlokwa split again during his grandson, Tsotetsi's reign as a group under Motonosi (great grandson of Molefe) seceded in *circa* AD 1735. *Kgosi* Tsotetsi's *morafe* became known as the Batlokwa Bamokgalong (senior in status) and *kgosi* Motonosi's *morafe* as the Batlokwa Bamokotleng (Bamokgotlong; junior in status, they became the Mantatise of Sekonyela). A third independent division was known as the Malakeng (Makalakeng) (Breutz 1989:380; Ellenberger 1912:40). Although D.F. Ellenberger dealt exclusively with the southern Batlokwa, an account of the northern section under Kgwadi was later recorded by his son Vivien Ellenberger (1939) and subsequently also by Paul-Lenert Breutz (1989). This account is of direct relevance to the settlement sequence of the Pilanesberg District.

As stated, Molefe reigned five generations after Kgwadi in *circa* AD 1670. Although not supported by Ellenberger (1939:199 (Genealogical Table)), Breutz (1989:377-380) lists Morare as Molefe's father who settled at Ramoriana (Nkgagolwe, on the farm Waterval 267) near the Dwarsberg Mountains. This is significant as the area will remain under Batlokwa influence until today. The Batlokwa then moved to the Matlapeng (Matlapynsberg) Mountains where Morare was buried at Moreteletse (on the farm Syferfontein) west of Pilanesberg. Molefe succeeded and moved first to Mabodi Masweu (White) Mountains and then to Tlôkwe (Thete, Ditsopotla, also Potchefstroom) on the Mooi River, where he died. Initiated by the secession of various sections, as discussed above, the Batlokwa started to disperse first in a northern and southern division and secondly, into various smaller groups. Ultimately it seems that Tswana (Tswana, son of Sebedi (Sebili) son of Molefe) emerged as leader (*circa* AD 1720) of the northern Batlokwa who remained in North West Province (Ellenberger 1939:166, 170; Breutz 1989:383).

According to Ellenberger (1939:170) Tswana was succeeded by Marakadu (ruled from *circa* AD 1730), although Breutz (1989:383) inserts another two rulers between Tswana and Marakadu, namely Kgwadi and Molefe (who probably settled at Nkwe). It is during Marakadu's reign that the antbear (*thakadu*) was accepted as the new totem of the northern Batlokwa. After Marakadu's death, his son Mosima Tsele (ruled from *circa* AD 1740) trekked north of the Magaliesberg Mountains, probably along the Crocodile River and settled at Bôte (near Houwater, Pilanesberg District) near Phokeng (Rustenburg District) where he died.

Interestingly, Breutz (1989:383) presents Mosima Tsele as two individuals, namely Mosima (who settled at Dite) and Tsele (Tsela) who ruled at Mankwe (cited as being situated on the farm Zwaarverdiend 234JP adjoining Selons Location to the east which is on the farm Grootwagendrift 233JP, south of Pilwe Mountain). An alternative version has it that *kgosi* Mosima Tsele settled on the farm Houwater (in Pilanesberg) and later at Bopitiko on the farm Doornhoek 910JQ, near the Elands (Kgetleng) River. Monageng (ruled from *circa* AD 1750) and Matlhabane (Matlabane) (ruled from *circa* AD 1760) reigned successively at Mankwe. During Matlhabane's reign a dispute arose with the Bafokeng (of Patsa) which prompted Matlhabane to cross the Elands River and settle on its western bank at Itlholanôga (possibly located on the western bank of the Leitholenoga River on the farm Doornhoek 910JQ) in

circa AD 1770, in the southern periphery of Pilanesberg, where he died. He was succeeded by Mokgwa a Matlhabane (ruled from *circa* AD 1770), who also died there. His son Taukobong (Taukubong) started his rule at Mankwe River (a tributary of the Elands River where the Bakgatla бага Kgafêla presently reside) sometime during AD 1780, and later moved his capital further south-west to Maruping at Pilwe Mountain (on the farms Zwartkoppies 212JP and Zwaarverdiend 234JP, eleven kilometres from Mankwe River), south-west of Pilanesberg. Taukubong also fought and defeated the Batlhako ba Leêma near Pilwe Mountain (Breutz 1953:198,201; Ellenberger 1939:166,170).

Taukubong had four sons, namely Makaba, Molefe, Thekiso and Mokgatle. Makaba was betrothed to Nkae, a Bahurutshe royal, but died before the marriage could be effected. Molefe fathered heirs in the name of Makaba, called Bogatsu, Phiri and Semêla. After Taukubong's death a succession dispute arose, sometime after AD 1800, between Thekiso and Mokgatle, which prompted Molefe to break away and act as regent until Bogatsu came of age. This section later became known as the Batlokwa ba Bogatsu. Bogatsu ruled from *circa* AD 1810 and settled west of Pilwe ('Piloe') mountain at Marothodi (on the farm Vlakfontein 207JP), where he died in *circa* AD 1815 (alternatively between *circa* AD 1815 to AD 1820). During his reign the Batlokwa, with the aid of the Kgafêla, fought and defeated the Bafokeng under Moseletsane (Moseletsana). The Batlokwa ba Bogatsu later split into the Batlokwa ba Gaborone, Batlokwa ba Sedumedi and Batlokwa ba Kgosi. Bogatsu's brother Phiri settled south of Pilwe Mountain after a dispute with Molefe. His other brother Semêla later took his people to live among the Bakgatla at Odi I. Kgosi settled at Tshwene-Tshwene and later at Ga-Molatedi. Note that when Bogatsu succeeded Molefe he retained his own *morafe* and after his bout with Phiri moved to Kolontwane (further east along the Elands River, on the farm Grootfontein) (Breutz 1953:199,202,363; 1989:384,385; Ellenberger 1939:166,172,173; Schapera 1952:20; TNAD 1968:40).

During the reign of Bogatsu's son Kgosi (ruled from *circa* AD 1820) the Batlokwa, while still living at Marothodi, were attacked and defeated by the Bakwena Modimosana Bammatau. Kgosi was killed during the battle in *circa* AD 1823, which resulted in a succession dispute between his four sons. Leshage (Kgosi's son from a junior house) seceded in *circa* AD 1823 with a following, but as a result of fights with Sebestwane of the Bafokeng, were chased as far north as Serowe in Botswana where they stole cattle from the Bamangwato, who retaliated by defeating them and recapturing their cattle. The remaining division under Bashe (Bashwe; another of Kgosi's son from a junior house) (acting ruler from *circa* AD 1825) first re-occupied Marothodi but later relocated to Letlhakeng (on the farm Putsfontein, west of Mabieskraal and north of Matlapeng (Matlapynsberg) Mountains) where he was killed by Mzilikazi in AD 1835. Matlapeng (the rightful successor of Kgosi) came of age and moved from Letlhakeng to rule at Motlhatseng (on the farm Rietfontein on the western periphery of the Matlapeng Mountains), where his sons Gaborone and Sedumendi (from the first house), were born (Breutz 1989:385; Ellenberger 1939:166,174,176,178,179). It is significant that the Matlapeng Mountains feature prominently in Batlokwa oral traditions as *kgosi* Morare (an earlier ruler) was buried at Moreteletse, an erstwhile Batlokwa capital, south of the Matlapeng Mountains.

The above discussion clearly highlights the movement and role of various Batlokwa *merafe* in the southern, south-western and western reaches of the Pilanesberg. However, their close association through kinship and social interconnectedness with the Bakgatla бага Kgafêla seems only to surface during periods of conflict. This thread of association continued

throughout the 19th century as the Batlokwa, during the reign of Matlapeng, assisted the Kgafêla during their war with the Bakwena in *circa* AD 1875 (Schapera 1942:12).

The areas to the southwest of Pilanesberg, such as Pilwe and the Matlapeng Mountains, were not only extensively occupied by the Batlokwa, but were also inhabited by two Batlhako *merafe* (as stated above) who settled and controlled the area before the arrival of both the Bakgatla and Batlokwa.

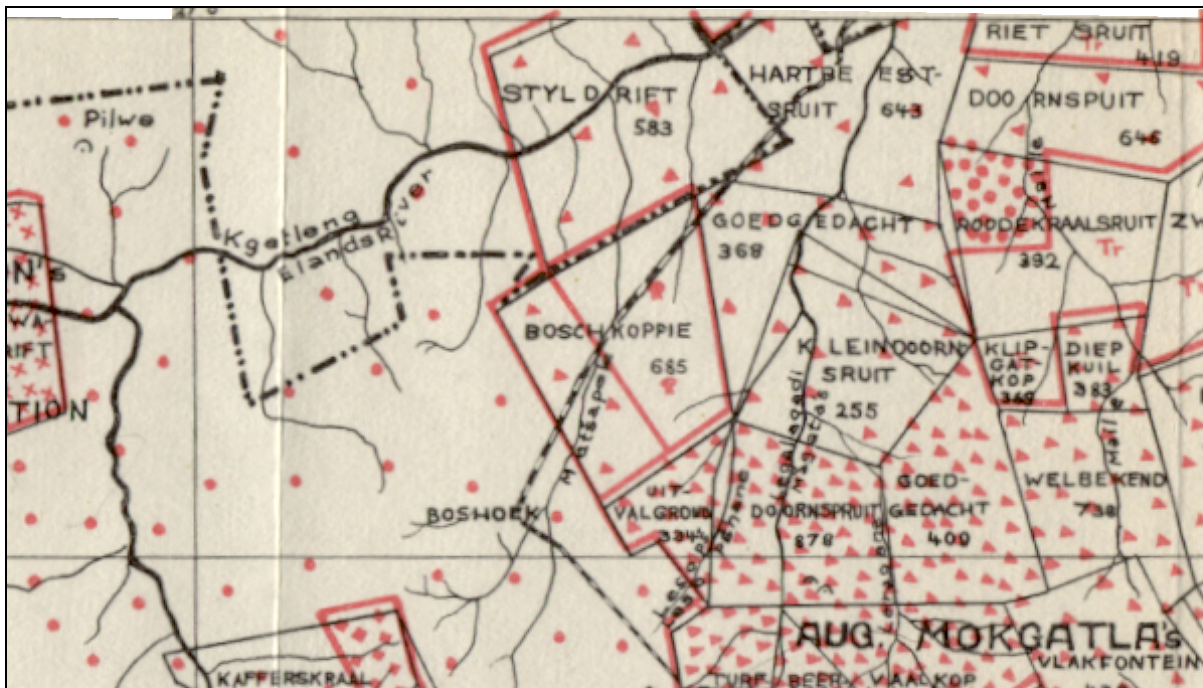


Figure 26: Areas occupied by the Bafokeng people in the 1930s (red triangles)

[The following is an excerpt from Pistorius 2008]:

The Thaba-ea-Nape (also known as the Thaba-ea-Maralla) range of mountains in which the Ga-Nape Heritage Park and Wilderness Area is located was home to numerous ancestral rulers of the Fokeng people. According to oral tradition different branches (clans) of the Fokeng settled from the north to the south along this range of mountains from as early as the 17th century. The places of settlement were: Serutube, Marekana, Tsitsing (Kanana), Thekoane (Thekwana) and Photsaneng (Bleskop).

It is not necessary to describe the origins and the history of the Fokeng here in great detail. Only a broad outline of the genealogy of Fokeng rulers, from Nape (AD1700) to Mòkgatle (AD1835) is outlined. Settlements that were associated with 20 some of these rulers, although only a few are mentioned in oral tradition, are also indicated.

The oldest legends state that the Fokeng entered the Transvaal through Tweedepoort, under the leadership of Nape, the earliest known Fokeng chief. This was before AD1700 AD. The group moved south-eastwards and settled on the banks of the Elands River (Kgetleng). Three Fokeng groups detached themselves from the main branch and moved southwards on different occasions. The Fokeng are therefore spread over the Orange Free State, Lesotho and even the former homeland of Transkei. The Fokeng are, next to the San people, the oldest inhabitants of the Orange Free State. The domain under Fokeng control during the last two centuries was the following: the northern border was the Kgetleng (Elands) River (and the

Tlôkwa and Kgatla Kgafêla chiefdoms); the western boundary was the Kwena Modimosana chiefdoms and the southern boundary the Magaliesberg. The eastern boundary was determined by the presence of the Kwena Môngôpa and the Kwena Mogale chiefdoms. The history of the Fokeng begins with Sekete III (Maleriba) who probably ruled in AD1700. He had three sons Kgantsi, Pitswe and Diale. (The last two had the same mother). Kgantsi was born from a Hurutshe father after the Hurutshe had abducted his mother. (Controversy surrounded Sekete's III position until his death, although he was the oldest son). Diale succeeded Sekete III and his reign probably began in AD1720. His sons were Mokuru, Mogotsi, Ramarwa, Ramogase, Tlase and Ntê. (The first two died young). Diale's sons freed the Fokeng from the Hurutshe's custom to castrate the Fokeng's bulls, an act that was considered offensive by the Fokeng as it indicated the Huruthse's seniority above the Fokeng. This particular incident put an end to the Huruthse's domination of the Fokeng.

With the exception of Ramorwa all the known sons of Diale became leaders of *dikgoro*, Ntê, the progenitor of the *kgoro* Seloko, Tlase, of Mathebetswaane and Ramogware of Metlapeng. Ramorwa succeeded Diale as chief and had four sons: Mmutle, Sekete, Katane and Mpie. Sekete succeeded Ramorwa in about AD1790. He was a formidable warrior and is remembered as one of the greatest Fokeng chiefs. The following individuals were sons of Sekete: Thete, Nameng, Nôge, Mogotsi, Molefe, Pitswe, Ramarue, Mohue, Manaana, Rantsogwana and Marahtsane (more can be added). Important individuals were Thete, Nameng and Nôge. Katane, or Raikane acted as regent for Thethe (also known as Mmakgongwana) who became the next chief. He had the following sons: Diale, Mokgatle, Molotlegi, Molefe, Liphatse and Pogwe. (The first, third and fifth died young). Môngkatle, Molefe and Pogwe played important parts in the next phase of Fokeng history. Thethe was very fond of his two younger brothers, Nameng and Nôge. The two brothers, however, turned against him. (The main concentration point in Thethe's time was at Makotshaneng [Makojaneng], east of Rustenburg near the Hex River). Thethe fled with his followers and took refuge with the Modimosana Mmatau. The Fokeng accepted Nameng as chief. Nameng reigned for only eight months after the enforced departure of Thethe as he was killed by the doings of Nôge, who now became chief. Nôge's rule commenced in about 1820 and ended when he was ousted in 1829 to 1830. Nôge's reign represents a stormy period in Fokeng history. Thethe invited the Pedi to attack the Fokeng whereupon Malekutu destroyed the Fokeng in 1823 to 1824. The devastation caused by the Pedi accounts for the fact that Mzilikazi amassed very little from the Fokeng's territory in 1826 to 1829. Nôge killed Ndebele visitors to his village. He occupied the summit of Ntlhane, a 'hillock near Malejane', with his followers and bolstered the foot and slopes with wooden stockades. The Fokeng pounded the Ndebele with stones forcing them to retreat.

Nôge became unpopular and fled to Moshoeshe in the Orange Free State. Môngkatle's accession was somewhere between 1834 and 1836. His reign had hardly begun when the Voortrekkers drove the Ndebele out of the Transvaal. He remained in office until his death in 1891 when he was about eighty years old. His principal village was named Mmakgongwana (after Thethe), today located in Rustenburg and partly on Paardekraal. Dirêpotsana Hill, where Phokeng now stands, was also re-occupied as residential area in Mokgatle's time.

South African War (1899 – 1902)

A battle, which turned into a siege, was fought on the farm Brakfontein during the South African War. The battlefield is located just north of the Eland River, but probably situated further east of the survey area.

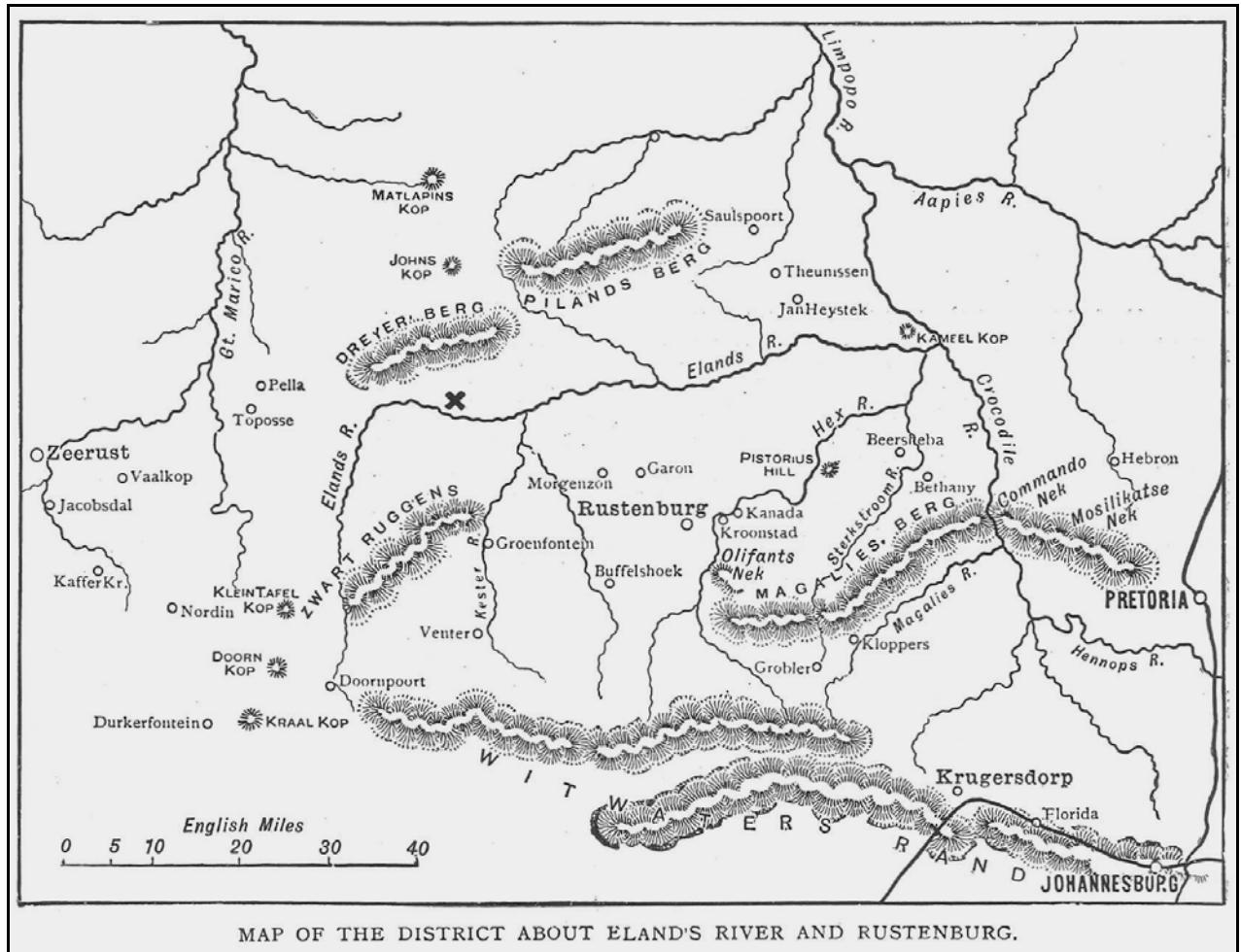


Figure 27: Location of the Battle of Eland River

Roughly 550 Australian and Rhodesian colonials fought courageously for 10 days in August 1900 against a superior Boer force under General JH de la Rey and General HL Lemmer on the Elands River. The Boer commando's had them pinned down and they were eventually saved by Lord Kitchener (Coulthard-Clark 1998:83-84).

The battle indicates the possibility of other such skirmish sites associated with the Second Anglo-Boer (South African) War in the survey area.

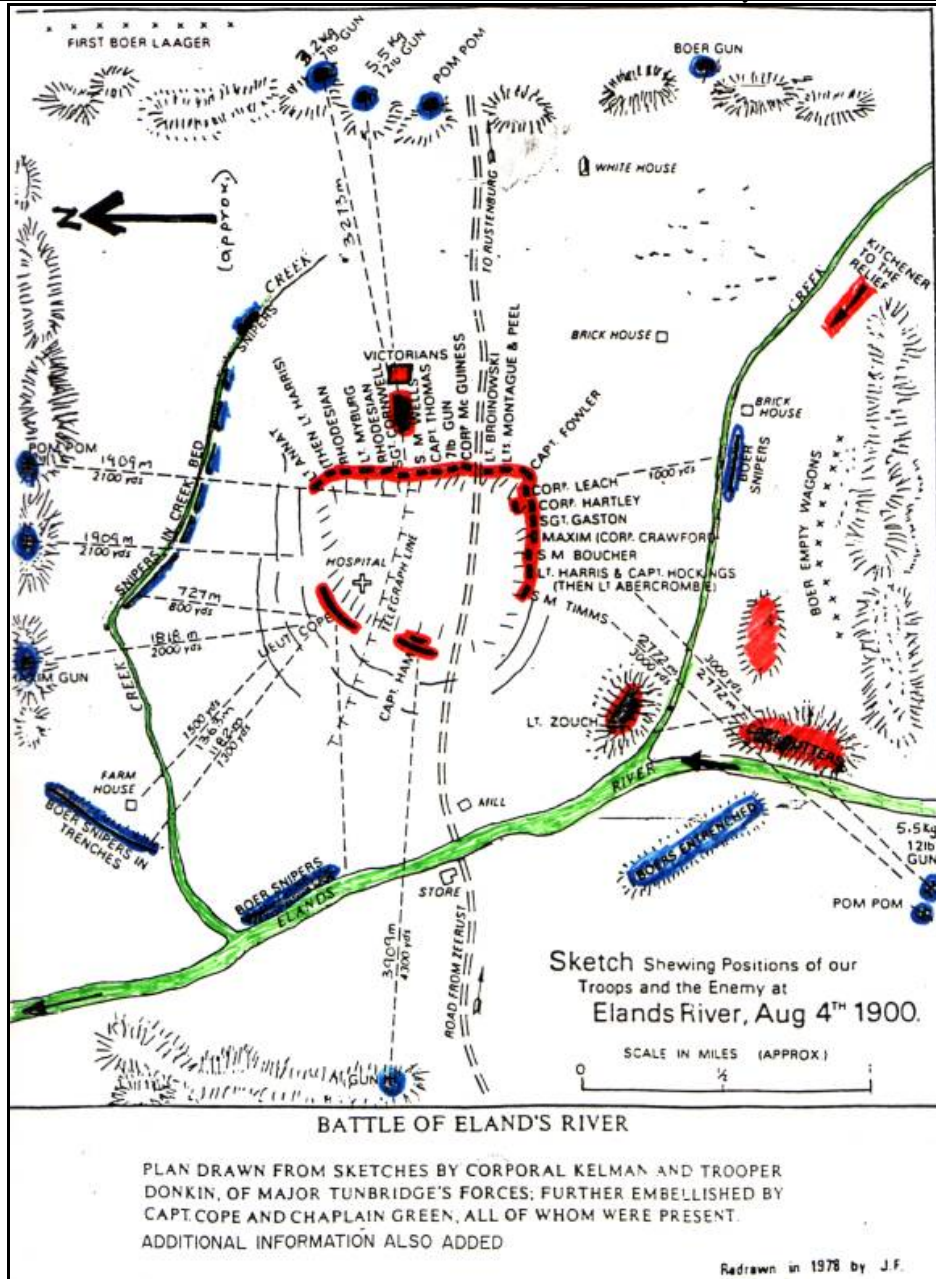


Figure 28: Location and sequence of events at the Battle of Eland River

Addendum 2: Descriptions of Recorded Sites

[As mentioned only sites that are located inside the demarcated areas are listed and discussed in this report.]

Sites 1 – 4 & Sites 25 - 29

A. GENERAL SITE DESCRIPTION				
The site comprises at least nine graves that were identified during two separate field work visits. Site 25 was discovered while drillhole SD 212 was operational and is situated approximately 15 metres away from the drillhole. In addition to four graves that were recorded, community members identified another five graves, bring the total to nine. Grave Site 25 has an east-west orientation and is demarcated with packed stones. All the other graves are circular in shape and demarcated with packed stones. However, none of the graves have an inscription which means they are, by default, regarded as older than 60 years and therefore fall under the protection of the NHRA (Act no 25 of 1999).				
B. SITE EVALUATION				
B1. HERITAGE VALUE			Yes	No
Historic Value				
It has importance to the community or pattern of South Africa's history or precolonial history.				√
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.				√
It has significance relating to the history of slavery in South Africa.				√
Aesthetic Value				
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.				√
Scientific Value				
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.				√
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.				√
It has importance to the wider understanding of the temporal change of cultural landscapes, settlement patterns and human occupation.			√	
Social Value				
It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).			√	
Tourism Value				
It has significance through its contribution towards the promotion of a local sociocultural identity and can be developed as tourist destination.				√
Rarity Value				
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.				√
Representative Value				
It is importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.				√
B2. REGIONAL CONTEXT				
Other similar sites in the regional landscape.			√	
B3. CONDITION OF SITE				
Integrity of deposits/structures.		Stable		
C. SPHERE OF SIGNIFICANCE				
	High	Medium	Low	
International			√	
National			√	
Provincial			√	
Local	√			
Specific community	√			
D. FIELD REGISTER RATING				
National/Grade 1 [should be registered, retained]				


Provincial/Grade 2 [should be registered, retained]	
Local/Grade 3A [should be registered, mitigation not advised]	
Local/Grade 3B [High significance; mitigation, partly retained]	
Generally Protected A [High/Medium significance, mitigation]	√
Generally protected B [Medium significance, to be recorded]	
Generally Protected C [Low significance, no further action]	
E. GENERAL STATEMENT OF SITE SIGNIFICANCE	
Low	
Medium	
High	√
F. RATING OF POTENTIAL IMPACT OF DEVELOPMENT	
None	
Peripheral	
Destruction	
Uncertain	√
G. RECOMMENDED MITIGATION	
<ul style="list-style-type: none"> • The grave should be fenced off with an access gate installed • If the graves are to be exhumed and reburied it will entail a Phase 2 investigation with a social consultation process and the application of the required permits. 	
H. APPLICABLE LEGISLATION AND LEGAL REQUIREMENTS	
<ul style="list-style-type: none"> • National Heritage Resources Act (Act no. 25 of 1999, Section 36) • Human Tissue Act (Act 65 of 1983 as amended). • Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925) • Ordinance on Excavations (Ordinance no. 12 of 1980) • Local and regional provisions, laws and by-laws • Permit from SAHRA 	
I. PHOTOGRAPHS	
	
<p>Figure 29: General view of Site 25</p>	



Figure 30: One of the circular graves indicated by the community members



Figure 31: One of the circular graves of packed stone (notice that one stone is of a different rock type)

Site 6

A. GENERAL SITE DESCRIPTION

The site comprises a large graveyard which was rediscovered by Mr Raphata in 1969. According to him they are Tlokwa mine workers (Mokgalong) that work on a mine in the area in 1880s and that Mr Kola knew some of the people still living in the area by 1926. Most of the graves have an east-west orientation with the headstone on the western side.

However, no inscriptions were recorded, which means they are, by default, regarded as older than 60 years and therefore fall under the protection of the NHRA (Act no 25 of 1999).

B. SITE EVALUATION

B1. HERITAGE VALUE

Historic Value

	Yes	No
It has importance to the community or pattern of South Africa's history or precolonial history.		√
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.		√
It has significance relating to the history of slavery in South Africa.		√

Aesthetic Value			
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.			√
Scientific Value			
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.			√
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.			√
It has importance to the wider understanding of the temporal change of cultural landscapes, settlement patterns and human occupation.	√		
Social Value			
It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).	√		
Tourism Value			
It has significance through its contribution towards the promotion of a local sociocultural identity and can be developed as tourist destination.			√
Rarity Value			
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.			√
Representative Value			
It is importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.			√
B2. REGIONAL CONTEXT			
Other similar sites in the regional landscape.		√	
B3. CONDITION OF SITE			
Integrity of deposits/structures.		Stable	
C. SPHERE OF SIGNIFICANCE	High	Medium	Low
International			√
National			√
Provincial			√
Local	√		
Specific community	√		
D. FIELD REGISTER RATING			
National/Grade 1 [should be registered, retained]			
Provincial/Grade 2 [should be registered, retained]			
Local/Grade 3A [should be registered, mitigation not advised]			
Local/Grade 3B [High significance; mitigation, partly retained]			
Generally Protected A [High/Medium significance, mitigation]			√
Generally protected B [Medium significance, to be recorded]			
Generally Protected C [Low significance, no further action]			
E. GENERAL STATEMENT OF SITE SIGNIFICANCE			
Low			
Medium			
High			√
F. RATING OF POTENTIAL IMPACT OF DEVELOPMENT			
None			
Peripheral			
Destruction			
Uncertain			√
G. RECOMMENDED MITIGATION			
<ul style="list-style-type: none"> The grave should be fenced off with an access gate installed If the graves are to be exhumed and reburied it will entail a Phase 2 investigation with a social consultation process and the application of the required permits. 			
H. APPLICABLE LEGISLATION AND LEGAL REQUIREMENTS			
<ul style="list-style-type: none"> National Heritage Resources Act (Act no. 25 of 1999, Section 36) Human Tissue Act (Act 65 of 1983 as amended). 			

- Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925)
- Ordinance on Excavations (Ordinance no. 12 of 1980)
- Local and regional provisions, laws and by-laws
- Permit from SAHRA

I. PHOTOGRAPHS



Figure 32: General view of the graveyard

Site 11

A. GENERAL SITE DESCRIPTION

The site comprises two graves which are demarcated with packed stones. The site is associated with a hospital that stood in the area in 1918 (however no traces of the building could be found as it has apparently been completely demolished). The graves have an east-west orientation with the headstones on the western side. However, the graves have no inscriptions which mean they are, by default, regarded as older than 60 years and therefore fall under the protection of the NHRA (Act no 25 of 1999).

B. SITE EVALUATION

B1. HERITAGE VALUE	Yes	No
Historic Value		
It has importance to the community or pattern of South Africa's history or precolonial history.		√
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.		√
It has significance relating to the history of slavery in South Africa.		√
Aesthetic Value		
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.		√
Scientific Value		
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.		√
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.		√
It has importance to the wider understanding of the temporal change of cultural landscapes, settlement patterns and human occupation.	√	
Social Value		
It has strong or special association with a particular community or cultural group for social,	√	

cultural or spiritual reasons (sense of place).			
Tourism Value			
It has significance through its contribution towards the promotion of a local sociocultural identity and can be developed as tourist destination.			√
Rarity Value			
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.			√
Representative Value			
It is importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.			√
B2. REGIONAL CONTEXT			
Other similar sites in the regional landscape.		√	
B3. CONDITION OF SITE			
Integrity of deposits/structures.		Stable	
C. SPHERE OF SIGNIFICANCE		High	Medium
International			√
National			√
Provincial			√
Local	√		
Specific community	√		
D. FIELD REGISTER RATING			
National/Grade 1 [should be registered, retained]			
Provincial/Grade 2 [should be registered, retained]			
Local/Grade 3A [should be registered, mitigation not advised]			
Local/Grade 3B [High significance; mitigation, partly retained]			
Generally Protected A [High/Medium significance, mitigation]			√
Generally protected B [Medium significance, to be recorded]			
Generally Protected C [Low significance, no further action]			
E. GENERAL STATEMENT OF SITE SIGNIFICANCE			
Low			
Medium			
High			√
F. RATING OF POTENTIAL IMPACT OF DEVELOPMENT			
None			
Peripheral			
Destruction			
Uncertain			√
G. RECOMMENDED MITIGATION			
<ul style="list-style-type: none"> The grave should be fenced off with an access gate installed If the graves are to be exhumed and reburied it will entail a Phase 2 investigation with a social consultation process and the application of the required permits. 			
H. APPLICABLE LEGISLATION AND LEGAL REQUIREMENTS			
<ul style="list-style-type: none"> National Heritage Resources Act (Act no. 25 of 1999, Section 36) Human Tissue Act (Act 65 of 1983 as amended). Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925) Ordinance on Excavations (Ordinance no. 12 of 1980) Local and regional provisions, laws and by-laws Permit from SAHRA 			
I. PHOTOGRAPHS			



Figure 33: The two graves are situated next to each other

Site 22 & GY01

A. GENERAL SITE DESCRIPTION

The site comprises a fenced graveyard containing at least 40 graves and is roughly 50 x 50 metres in extent. All the graves have an east-west orientation with the headstones on the western side. The bases and headstones of the graves are demarcated with either cement or packed stones. No recent grave offerings were noted.

However, most of the graves are without inscriptions which mean they are, by default, regarded as older than 60 years and therefore fall under the protection of the NHRA (Act no 25 of 1999).

B. SITE EVALUATION

B1. HERITAGE VALUE	Yes	No
Historic Value		
It has importance to the community or pattern of South Africa's history or precolonial history.		√
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.		√
It has significance relating to the history of slavery in South Africa.		√
Aesthetic Value		
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.		√
Scientific Value		
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.		√
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.		√
It has importance to the wider understanding of temporal changes within cultural landscapes, settlement patterns and human occupation.	√	
Social Value		
It has marked or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).	√	
Tourism Value		
It has significance through contributing towards the promotion of a local sociocultural identity and can be developed as a tourist destination.		√
Rarity Value		
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.		√
Representative Value		


It is of importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects.			√
B2. REGIONAL CONTEXT			
Other similar sites in the regional landscape.		√	
B3. CONDITION OF SITE			
Integrity of deposits/structures.		Stable	
C. SPHERE OF SIGNIFICANCE		High	Medium
International			√
National			√
Provincial			√
Local	√		
Specific community	√		
D. FIELD REGISTER RATING			
National/Grade 1 [should be registered, retained]			
Provincial/Grade 2 [should be registered, retained]			
Local/Grade 3A [should be registered, mitigation not advised]			
Local/Grade 3B [High significance; mitigation, partly retained]			
Generally Protected A [High/Medium significance, mitigation]			√
Generally protected B [Medium significance, to be recorded]			
Generally Protected C [Low significance, no further action]			
E. GENERAL STATEMENT OF SITE SIGNIFICANCE			
Low			
Medium			
High			√
F. RATING OF POTENTIAL IMPACT OF DEVELOPMENT			
None			√
Peripheral			
Destruction			
Uncertain			
G. RECOMMENDED MITIGATION			
<ul style="list-style-type: none"> The graveyard is already fenced off If the graves are to be exhumed and reburied it will entail a Phase 2 investigation with a social consultation process and the application of the required permits. 			
H. APPLICABLE LEGISLATION AND LEGAL REQUIREMENTS			
<ul style="list-style-type: none"> National Heritage Resources Act (Act no. 25 of 1999) Permit from SAHRA for exhumation and reburial Human Tissue Act (Act 65 of 1983 as amended). Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925) Ordinance on Excavations (Ordinance no. 12 of 1980) Local and provincial provisions, laws and by-laws 			
I. PHOTOGRAPHS			



Figure 34: General view of the fenced graveyard

Site 30

A. GENERAL SITE DESCRIPTION		
This site consists of a circular stone wall attached to a rocky outcrop. The enclosure is about 2 metres in diameter. No other structures or deposits were found in association.		
B. SITE EVALUATION		
B1. HERITAGE VALUE	Yes	No
Historic Value		
It has importance to the community or pattern of South Africa's history or precolonial history.		√
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.		√
It has significance relating to the history of slavery in South Africa.		√
Aesthetic Value		
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.		√
Scientific Value		
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.	√	
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.		√
It has importance to the wider understanding of the temporal change of cultural landscapes, settlement patterns and human occupation.	√	
Social Value		
It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).	√	
Tourism Value		
It has significance through its contribution towards the promotion of a local sociocultural identity and can be developed as tourist destination.		√
Rarity Value		
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.		√
Representative Value		

It is importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.		√	
B2. REGIONAL CONTEXT			
Other similar sites in the regional landscape.		√	
B3. CONDITION OF SITE			
Integrity of deposits/structures.		Stable	
C. SPHERE OF SIGNIFICANCE			
	High	Medium	Low
International			√
National			√
Provincial			√
Local			√
Specific community			√
D. FIELD REGISTER RATING			
National/Grade 1 [should be registered, retained]			
Provincial/Grade 2 [should be registered, retained]			
Local/Grade 3A [should be registered, mitigation not advised]			
Local/Grade 3B [High significance; mitigation, partly retained]			
Generally Protected A [High/Medium significance, mitigation]			
Generally protected B [Medium significance, to be recorded]			
Generally Protected C [Low significance, no further action]		√	
E. GENERAL STATEMENT OF SITE SIGNIFICANCE			
Low		√	
Medium			
High			
F. RATING OF POTENTIAL IMPACT OF DEVELOPMENT			
None			
Peripheral			
Destruction			
Uncertain		√	
G. RECOMMENDED MITIGATION			
<ul style="list-style-type: none"> The site should be surveyed and recorded 			
H. APPLICABLE LEGISLATION AND LEGAL REQUIREMENTS			
<ul style="list-style-type: none"> National Heritage Resources Act (Act no. 25 of 1999) 			
I. PHOTOGRAPH			
			
<p>Figure 35: Stone-walled enclosure</p>			

Addendum 3: Surveyor General Farm Diagrams

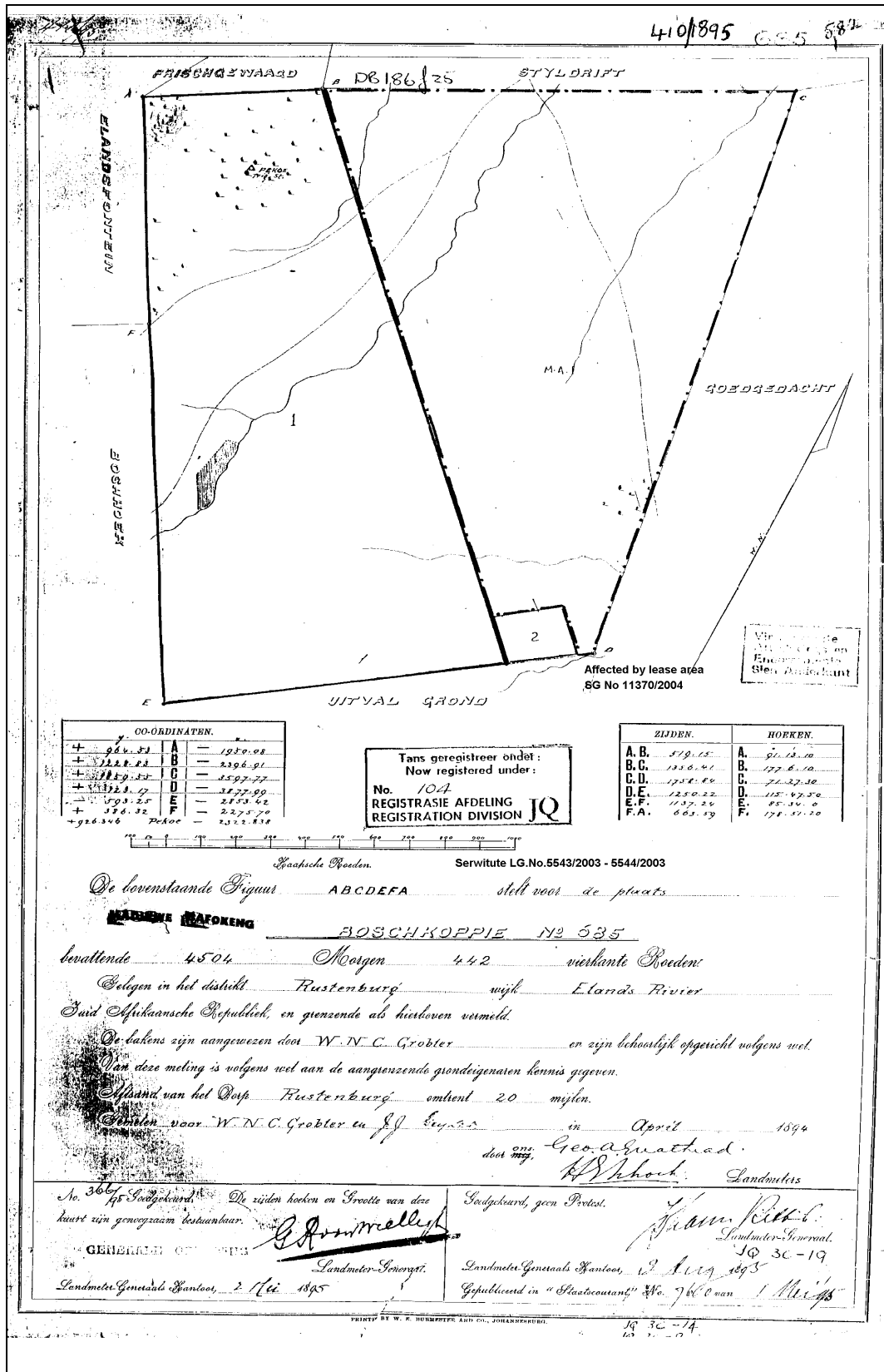


Figure 36: Surveyor General's map of the farm Boschkoppie 104 JQ first surveyed in 1894

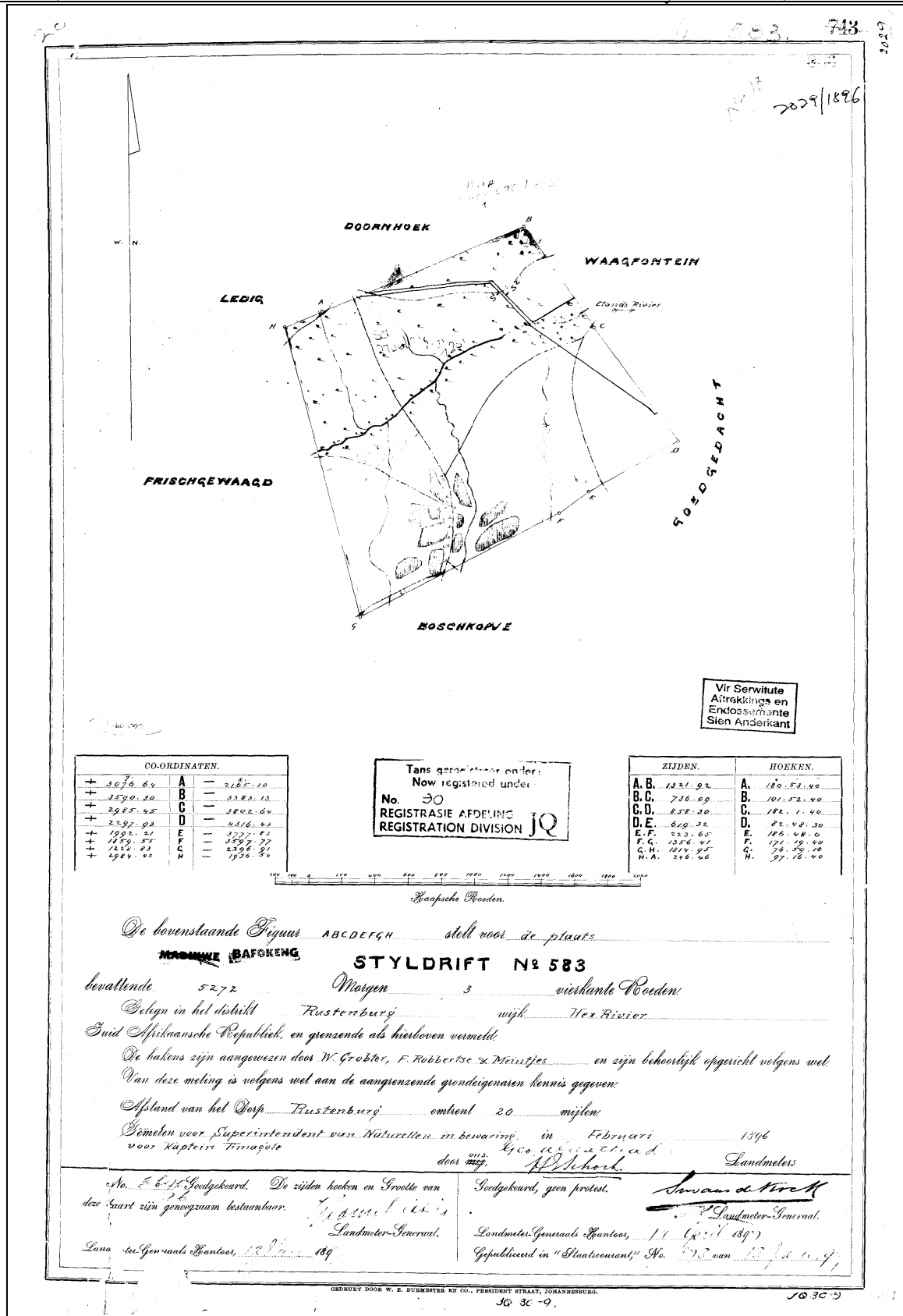


Figure 37: Surveyor General's map of the farm Styldrift 90 JQ first surveyed in 1896

Addendum 4: Rating of Impact

Preconstruction Phase

TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							Impact Management Objective	IMPACT MANAGEMENT ACTIONS (PROPOSED MITIGATION MEASURES)		IMPACT MANAGEMENT OUTCOME (ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION)						
		Consequence			Likelihood (Probability)		Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating		Management and Mitigation Measures	Timeframe	Consequence			Likelihood (Probability)		Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact						Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact		
Direct	Graveyard, Graves and Stone-walled Enclosure	5	2	4	5	3	88	H Improve Current Management	Prevent impact	Fence off all graves. Phase 2 and relocation.		2	2	4	5	3	64	MH Maintain Current Management
							0	#NA								0	#NA	
							0	#NA								0	#NA	

Construction Phase

TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						Impact Management Objective	IMPACT MANAGEMENT ACTIONS (PROPOSED MITIGATION MEASURES)		IMPACT MANAGEMENT OUTCOME (ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION)							
		Consequence			Likelihood (Probability)		Significance (Degree to which impact may cause irreplaceable loss of resources)		Significance Rating	Management and Mitigation Measures	Timeframe	Consequence			Likelihood (Probability)		Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact						Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact		
Direct	Graveyard, Graves and Stone-walled Enclosure	5	2	4	5	3	88	H Improve Current Management	Prevent Impact	Fence off all graves. Phase 2, survey and relocation.		2	2	4	5	3	64	MH Maintain Current Management
							0	#NA									0	#NA
							0	#NA									0	#NA

Operational Phase

TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							Impact Management Objective	IMPACT MANAGEMENT ACTIONS (PROPOSED MITIGATION MEASURES)		IMPACT MANAGEMENT OUTCOME (ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION)						
		Consequence			Likelihood (Probability)		Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating		Management and Mitigation Measures	Timeframe	Consequence			Likelihood (Probability)		Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact						Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact		
Direct	Graveyard, Graves and Stone-walled Enclosure	5	2	4	5	3	88	H Improve Current Management	Prevent impact	Fence off all graves. Phase 2 survey and relocation.		2	2	4	5	3	64	MH Maintain Current Management
							0	#NA									0	#NA
							0	#NA									0	#NA

