

**APPENDIX C: ARCHAEOLOGICAL IMPACT
ASSESSMENT
(as submitted before, no revision)**



Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

**A REPORT ON A CULTURAL HERITAGE IMPACT ASSESSMENT DONE FOR
THE PLATINUM GROUP METALS WATERBERG PROJECT AREA, LIMPOPO
PROVINCE**

For:

Platinum Group Metals (RSA) (Pty) Ltd
gertenes@lantic.net



REPORT NO.: AE01829V

By:

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21 June 2018
(Revised on 28 March 2019)

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SUBMISSION OF REPORT

Please note that the South African Heritage Resources Agency (SAHRA) or one of its subsidiary bodies needs to comment on this report.

It is the client's responsibility to do the submission via the SAHRIS System on the SAHRA website.

Clients are advised not to proceed with any action before receiving the necessary comments from SAHRA.

DISCLAIMER

Although all possible care is taken to identify all sites of cultural importance during the survey of study areas, the nature of archaeological and historical sites is as such that it always is possible that hidden or subterranean sites could be overlooked during the study. Archaetnos and its personnel will not be held liable for such oversights or for costs incurred as a result thereof.

Should it be necessary to visit a site again as a result of the above mentioned, an additional appointment is required.

Reasonable editing of the report will be done upon request by the client if received within 60 days of the report date. However, editing will only be done once, and clients are therefore requested to send all possible changes in one request. Any format changes or changes requested due to insufficient or faulty information provided to Archaetnos on appointment, will only be done by additional appointment.

Any changes to the scope of a project will require an additional appointment.

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EXECUTIVE SUMMARY

Archaetnos cc was requested by the Platinum Group Metals (RSA) Pty) Ltd to conduct a cultural heritage impact assessment (HIA) for the proposed Waterberg Mining development (“the Project”). The Project lies to the west of the town of Bochum in the Limpopo Province.

The HIA includes seven farms as these are the ones to be impacted by the Project for which two alternatives were investigated (Figure 4a-4b). These farms are Old Langsine 360 LR, Early Dawn 361 LR, Goedetrouw 366 LR, Ketting 368 LR, Disseldorp 369 LR, Norma 365 LR and Harriets Wish 393 LR (the study area). Surface infrastructure will be mainly limited to Ketting, with underground mining activities to be in operation at Goedetrouw, Old Langsine and Early Dawn. A small section of the proposed infrastructure will encroach on Disseldorp. A second possible position for the Tailings Storage Facility was determined on Norma. It is however unlikely that this will be utilized and therefore this farm was only studied by means of a desktop study. As no new infrastructure is planned on the farm Harriet’s Wish, it was also only studied by means of a desktop study.

The field survey for the project was conducted according to generally accepted HIA practices and was aimed at locating possible objects, sites and features of cultural significance in the area of proposed development. One regularly looks a bit wider than the demarcated area, as the surrounding context needs to be taken into consideration. However, since the area is extremely large the study is merely an indication of what cultural resources can be expected in the area.

Twenty-seven sites of cultural importance were identified in the study area. Some of these sites will be impacted on and therefore mitigation measures are proposed.

Regarding impact on the sites the following should be indicated:

- No impact is foreseen at Harriet’s Wish. No sites were identified, but it needs to be indicated that only a desktop study was done here. No new infrastructure is however proposed here.
- No impact is foreseen at Disseldorp. No sites were identified. It needs to be mentioned that only a small section of the (eastern side) was surveyed since the mining infrastructure is limited to this area.
- No impact is foreseen at Old Langsine. The two sites on this farm are no. 12 and 13 (graves), both identified during the 2018 survey.
- No impact is foreseen at Goedetrouw. There are two sites on this farm, namely no. 25 and 26 (graves).
- No impact is foreseen at Norma. There is one known site, namely no. 27 (graves). However, should it be decided that the Tailings Storage Facility be

moved here, a site assessment will be needed as this farm was only investigated via a desktop study. It is therefore possible that more sites may become known.

- For development Alternative 1, no impact is foreseen at Early Dawn. The sites on this farm are sites no. 14-22 (graves), site 23 (historical residential remains) and site no. 24 (Iron Age pottery). However for Alternative 2 direct impact is foreseen for site 16 (graves).
- Impact is mainly foreseen on the farm Ketting, but not on all the sites.
 - For development Alternative 1, no direct impact is expected at the following sites - no. 4 (graves) and 10 (historical remains). Definite indirect impact is expected on the following sites – 1-2, 6-9 and 11 (graves), as well as no. 3 (Iron Age) and no. 5 (historical remains).
 - For development Alternative 2, no direct impact is expected at the following sites: no. 4 (graves) and 10 (historical remains). Definite indirect impact is expected on the following sites – 1-2, 6-8 and 11 (graves), as well as no. 3 (Iron Age) and no. 5 (historical remains). Definite direct impact is foreseen at sites 9 (graves).

The following is recommended:

- The project may continue, but only after receiving the necessary comments from SAHRA as well as the implementation of the mitigation measures indicated below.
- It is specifically recommended that development Alternative 1 be chosen , since its impact on heritage sites is less direct and easier to mitigate.
- Although twenty-seven sites of heritage significance were found in the Study Area, it is foreseen that many more may be located there, especially graves. In fact, residents of the area whom were spoken to during the survey (not a formal social consultation process) indicated that single graves are located throughout the bush. These however mostly seem to be outside of the area of direct impact, but it should at least be noted.
- Buffer zones around any of these sites can only be determined during a Phase II study as it needs to deal with each of these sites individually. Such a study would inter alia be looking at the specific impact on such a site, which will then be used to determine specific buffers as these will vary in accordance with the type of work to be done nearby. However, a buffer of at least 20 m should be implemented as a rule.
- It should always be noted that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these

are discovered, a qualified archaeologist be called in to investigate the occurrence.

- All the graves are regarded as being of a high cultural significance. There are two possibilities of handling these. It should be handled as follows:
 - Option 1 would be to fence the graves in and have a management plan drafted for the sustainable preservation thereof (“Option 1”). This should be written by a heritage expert. Option 1 is implemented when indirect or secondary impact is foreseen.
 - Option 2 is implemented when a direct impact is foreseen. Should any danger be posed to the graves, Option 2 will have to be taken. This option is to exhume the mortal remains and then to have it relocated (“Option 2”). For this a detailed motivation will have to be written and applied for to SAHRA. If approved, the specific procedure should be followed which includes social consultation. For graves younger than 60 years, only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA. This procedure is quite lengthy and involves social consultation.

Should Alternative 1 be chosen:

- For the graves on the farms Old Langsine (sites 12 and 13), Early Dawn (sites 14-22), Goedetrouw (sites 25-26) and Norma (site 27) no action is needed. The graves are mostly fenced in and well looked after. The mine should however ensure that this situation remains unchanged. Therefore Option 1 should be implemented which would provide at least a monitoring plan for as long as the mine is operational in the area. Such a plan should be drafted by a heritage expert.
- Option 1 should also be implemented for the following grave sites on the farm Ketting – 1, 2, 4, 6, 8, 9 and 11. These will be impacted on indirectly. This means that dust from mining activities or other impacts (e.g. blasting) may impact on the sites and therefore a management plan is required. The plan should be drafted by a heritage expert.
- All the historical residential remains (Early Dawn site 23; Ketting sites 4*, 5, 10 and 11*) are regarded as having low significance. This report is seen as ample mitigation and it may be demolished. However only secondary impact is expected, and it may therefore just be left as it is.

*Note that sites 4 and 11 are repeated as it contains both graves and historical remains.

- Site no. 7 on Ketting (historical stone walling) is regarded as having medium cultural significance. It should be documented after which it may be demolished. However, since only secondary impact is expected, it may be left as it is.

- The two Iron Age Sites (Site 24 on Early Dawn and site 3 on Ketting) have been sufficiently recorded. It may be demolished, but only secondary impact is foreseen, and it may therefore also just be left as it is.
- The impact of the Project on any new historical and grave sites identified during the course of the mines activities, should be assessed by a heritage specialist to determine impact and propose the needed mitigatory measures.
- Should the TSF be moved to Norma, the area will need to be physically surveyed, since it was only dealt with as a desktop study for this report.

Should Alternative 2 be chosen:

- For the graves on the farms Old Langsine (sites 12 and 13), Early Dawn (sites 14-15, 17-22), Goedetrouw (sites 25-26) and Norma (site 27) no action is needed. The graves are mostly fenced in and well looked after. The mine should however ensure that this situation remains unchanged. Therefore Option 1 should be implemented which would provide at least a monitoring plan for as long as the mine is operational in the area. Such a plan should be drafted by a heritage expert.
- Option 1 should also be implemented for the following grave sites on the farm Ketting – 1, 2, 4, 6, 8 and 11. These will be impacted on indirectly. This means that dust from mining activities or other impacts (e.g. blasting) may impact on the sites and therefore a management plan is required. The plan should be drafted by a heritage expert.
- Option 2 should be implemented for grave sites 9 and 16 on Ketting and Early Dawn respectively.
- All the historical residential remains (Early Dawn site 23; Ketting sites 4*, 5, 10 and 11*) are regarded as having low significance. This report is seen as ample mitigation and it may be demolished. However only secondary impact is expected, and it may therefore just be left as it is.

*Note that sites 4 and 11 are repeated as it contains both graves and historical remains.

- Site no. 7 on Ketting (historical stone walling) is regarded as having medium cultural significance. It should be documented after which it may be demolished. However, since only secondary impact is expected, it may be left as it is.
- The two Iron Age Sites (Site 24 on Early Dawn and site 3 on Ketting) have been sufficiently recorded. It may be demolished, but only secondary impact is foreseen, and it may therefore also just be left as it is.

- The impact of the Project on any new historical and grave sites identified during the course of the mines activities, should be assessed by a heritage specialist to determine impact and propose the needed mitigatory measures.
- Should the TSF be moved to Norma, the area will need to be physically surveyed, since it was only dealt with as a desktop study for this report.

It is also important to take cognizance that it is the client's responsibility to do the submission of this report via the SAHRIS System on the SAHRA website. No work on site may commence before receiving the necessary comments from SAHRA.

CURRICULUM VITAE
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PERSONAL INFORMATION

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- BA (HONS) Archaeology 1988 (cum laude), University of Pretoria
- MA Archaeology 1992, University of Pretoria
- Post-Graduate Diploma in Museology 1993 (cum laude), University of Pretoria
- Diploma Tertiary Education 1993, University of Pretoria
- DPhil Archaeology 2001, University of Pretoria.
- MA Cultural History 1998 (cum laude), University of Stellenbosch
- Management Diploma 2007 (cum laude), Tshwane University of Technology
- DPhil History 2010, University of Stellenbosch

EMPLOYMENT HISTORY

- *1988-1991*: Fort Klapperkop Military Museum - Researcher
- *1991-1999*: National Cultural History Museum. Work as Archaeologist, as well as Curator/Manager of Pioneer Museum (1994-1997)
- *1999-2002*: City Council of Pretoria. Work as Curator: Fort Klapperkop Heritage Site and Acting Deputy Manager Museums and Heritage.
- *2002-2007*: City of Tshwane Metropolitan Municipality. Work as Deputy Manager Museums and Heritage.
- *August 2007* – present – Managing Director for Archaetnos Archaeologists.
- *1988-2003*: Part-time lecturer in Archaeology at the University of Pretoria and a part-time lecturer on Cultural Resources Management in the Department of History at the University of Pretoria.
- *2014-2015*: Part-time lecturer for the Honours degree in Museum Sciences in the Department of History and Heritage Studies at the University of Pretoria
- *Since 2015*: Extraordinary Professor of History at the Mahikeng campus of the Northwest University

OTHER

- Has published 34 peer-reviewed and 42 popular articles.
- Has written 11 books/book contributions/conference proceedings .
- Has been the author and co-author of over 911 unpublished reports on cultural resources surveys and archaeological work.
- Has delivered more than 72 papers and lectures at national and international conferences.
- Member of SAHRA Council for 2003 – 2006.
- Member of the South African Academy for Science and Art.
- Member of Association for South African Professional Archaeologists.

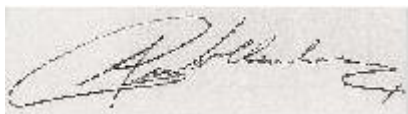
- Member of the South African Society for Cultural History (Chairperson 2006-2008; 2012-2014; 2018-2020).
- Has been editor for the SA Journal of Cultural History 2002-2004.
- Editorial member of various scientific journals.
- Member of the Provincial Heritage Resources Agency, Gauteng's Council.
- Member of Provincial Heritage Resources Agency, Gauteng's HIA adjudication committee (Chairperson 2012-2019).

A list of reports can be viewed on www.archaetnos.co.za.

DECLARATION OF INDEPENDENCE

I, Anton Carl van Vollenhoven from Archaetnos, hereby declare that I am an independent specialist within the field of heritage management.

Signed:



Date: 27 March 2019

LIST OF ACRONYMS:

AIA – Archaeological Impact Assessment
CMP – Cultural Management Plan
EAP – Environmental Assessment Practitioner
EIA – Environmental Impact Assessment
HIA – Heritage Impact Assessment
PIA – Palaeontological Impact Assessment
SAHRA –South African Heritage Resources Agency

CONTENTS

| | Page |
|--|------|
| EXECUTIVE SUMMARY..... | 3 |
| CIRRUCUL VITAE OF SPECIALIST..... | 8 |
| DECLARATION OF INDEPENDENCE | 9 |
| LIST OF ACRONYMS..... | 9 |
| CONTENTS | 10 |
| 1. INTRODUCTION..... | 11 |
| 2. TERMS OF REFERENCE..... | 14 |
| 3. *CONDITIONS AND ASSUMPTIONS..... | 15 |
| 4. LEGISLATIVE REQUIREMENTS | 16 |
| 5. METHODOLOGY..... | 19 |
| 6. DESCRIPTION OF THE AREA..... | 23 |
| 7. HISTORICAL CONTEXT..... | 28 |
| 8. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY.. | 42 |
| 9. CONCLUSIONS AND RECOMMENDATIONS | 80 |
| 10. REFERENCES..... | 84 |
| APPENDIX A – DEFENITION OF TERMS..... | 87 |
| APPENDIX B – DEFINITION/ STATEMENT OF SIGNIFICANCE | 88 |
| APPENDIX C – SIGNIFICANCE AND FIELD RATING | 89 |
| APPENDIX D – PROTECTION OF HERITAGE RESOURCES | 91 |
| APPENDIX E – HERITAGE MANAGEMENT IMPACT ASSESSMENT PHASES | 93 |

1. INTRODUCTION

Archaetnos cc was requested by the Platinum Group Metals (RSA) Pty) Ltd to conduct a cultural heritage impact assessment (HIA) for the proposed Waterberg Mining development (“the Project”). The Project lies to the west of the town of Bochum in the Limpopo Province (Figure 1-3).

The HIA includes seven farms as these are the ones to be impacted by the Project for which two alternatives were investigated (Figure 4a-4b). These farms are Old Langsine 360 LR, Early Dawn 361 LR, Goedetrouw 366 LR, Ketting 368 LR, Disseldorp 369 LR, Norma 365 LR and Harriets Wish 393 LR (the study area). Surface infrastructure will be mainly limited to Ketting, with underground mining activities to be in operation at Goedetrouw, Old Langsine and Early Dawn. A small section of the proposed infrastructure will encroach on Disseldorp. A second possible position for the Tailings Storage Facility was determined on Norma. It is however unlikely that this will be utilized and therefore this farm was only studied by means of a desktop study. As no new infrastructure is planned on the farm Harriet’s Wish, it was also only studied by means of a desktop study.



Figure 1: Location of the town of Bochum and the surveyed site in the Limpopo Province. North reference is to the top.



Figure 2: Location of the surveyed site in relation to Bochum. North reference is to the top.

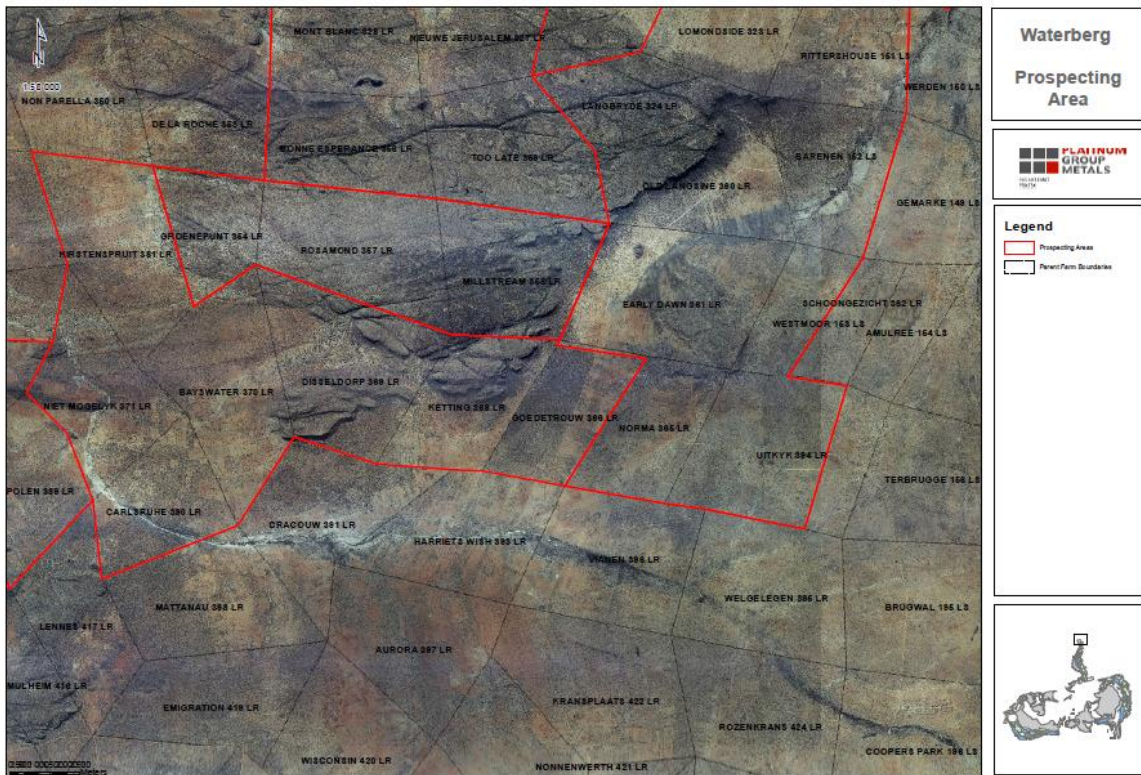


Figure 3: Map of the project area. The seven applicable farms to this study lies towards the south-east.

The following infrastructure is proposed:

- Tailings dam
- Access portals
- Roads
- Overland conveyor
- Plant
- Waste rock dump
- Waste handling facility
- Pollution control dams
- Water dam
- Balancing dam
- Main MV sub-station
- Vent shafts
- Sewage treatment plant
- Water pipelines
- Service corridors
- Offices
- Other buildings
- Helipad
- Associated infrastructure

The client indicated the area to be surveyed. The field survey was confined to this area and was done via off-road vehicle and on foot.

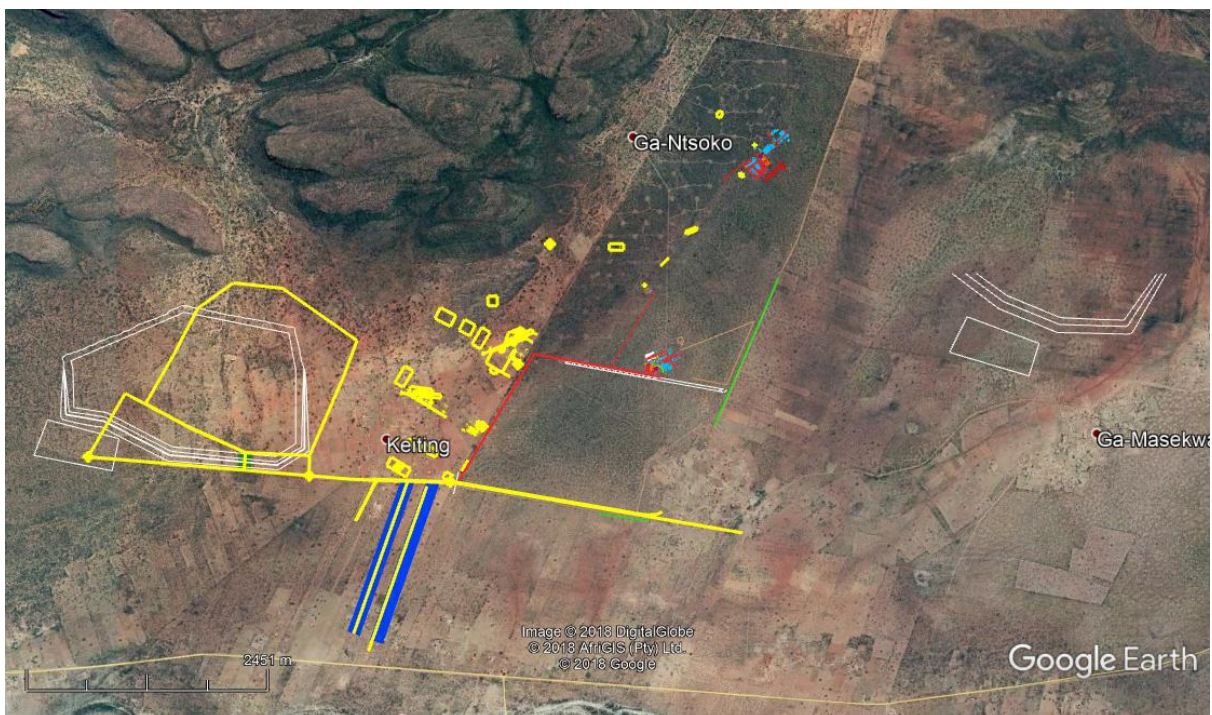


Figure 4a: Google image showing the project area and proposed infrastructure alternative 1. North referenc is to the top.

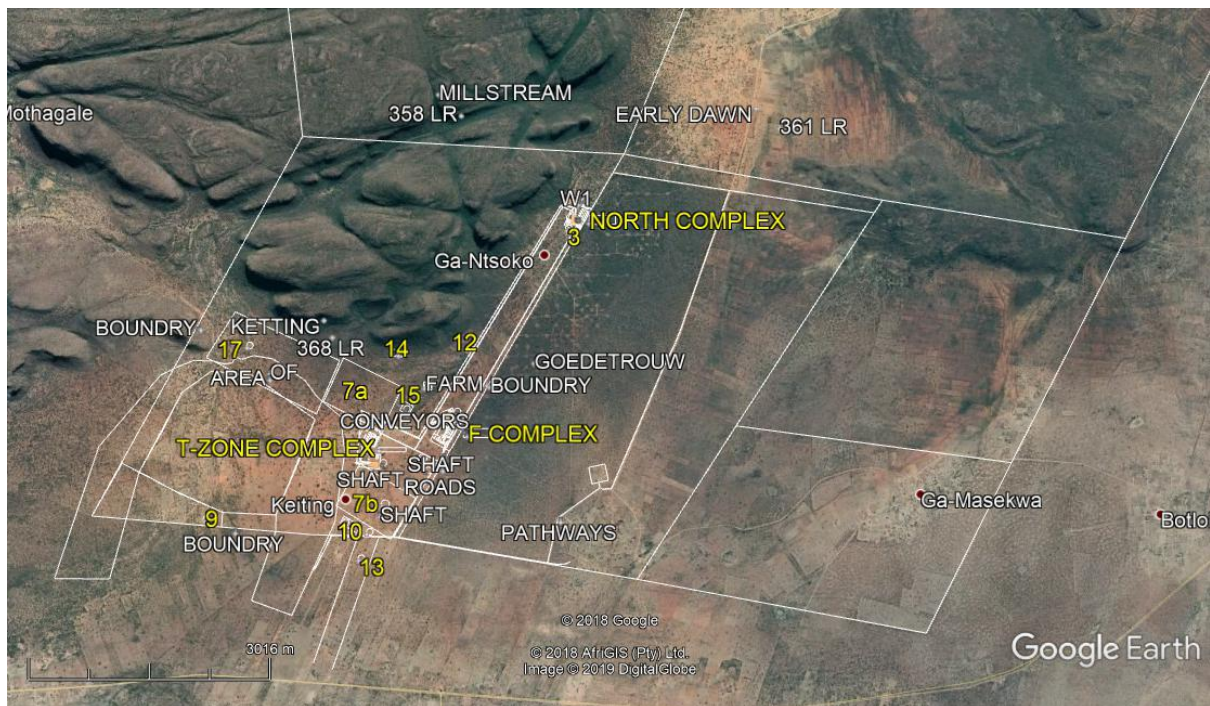


Figure 4b: Google image showing the project area and proposed infrastructure alternative 2. North referenc is to the top.

2. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property (see Appendix A).
2. Document the found cultural heritage sites according to best practice standards for heritage related studies.
3. Study background information on the area to be developed.
4. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).
5. Describe the possible impact of the Project on these cultural remains, according to a standard set of conventions.
6. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.

3. CONDITIONS & ASSUMPTIONS

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

1. Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity (Appendix A). These include all sites, structure and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.
2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.
3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see Appendix C).
4. The **latitude and longitude** of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public. This does not mean that other information about these sites may not be shared with the public.
5. All recommendations are made with full cognizance of the relevant legislation.
6. No social consultation process was undertaken as this is usually been dealt with by the environmental practitioner. Information relevant to heritage, if any, is then provided to the heritage specialist. No such issues were brought to the fore.
7. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might occur.
8. In this case there were certain areas where the vegetation cover were very dense in certain areas which had a negative effect on both the horizontal and the vertical archaeological visibility.
9. All of these farms were surveyed before and therefore the aim was to identify sites not yet known as well as to determine impact.

4. LEGISLATIVE REQUIREMENTS

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

4.1 The National Heritage Resources Act

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

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

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

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and paleontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment only looks at archaeological resources. The different phases during the HIA process are described in Appendix E.

An HIA must be done under the following circumstances:

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

- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the NHRA states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial):

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- c. trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or paleontological material or object, or any meteorite; or
- d. Bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological material or objects, or use such equipment for the recovery of meteorites.
- e. Alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

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

All graves older than 60 years are called heritage graves and should be handled by an archaeologist. This includes archaeological graves, which are older than 100 years. Unidentified/unknown graves (which refers to date of death) are also handled as older than 60 until proven otherwise.

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

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

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place. Human remains can only be handled by a registered undertaker or an institution declared under the **National Health Act (Act 61 of 2003)**.

4.2 The National Environmental Management Act

NEMA states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. In terms of section 23 of the NEMA the impact of the development on these resources should be determined and proposals for the mitigation thereof be made.

Environmental management should also take the cultural and social needs of people into account. Section 2(4)(a)(iii) of NEMA requires that any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

5. METHODOLOGY

5.1 Survey of literature

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

The SAHRA database, SAHRIS, was also utilised. Information obtained here is utilised further on and referenced as such.

5.2 Field survey

A basic assessment of the area was done in 2014 and the site was visited twice during this survey. These visits were respectively for 3 days in September and 1 day in December. This was followed by an HIA in 2016 when the site was visited for a third time. This visit was done in May and the duration thereof was two days. During 2018 it was visited again, as the infrastructure layout plan had changed. This visit was done in May and took 2 days.

The survey was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development. One regularly looks a bit wider than the demarcated area, as the surrounding context needs to be taken into consideration. These practices are described in SAHRA's minimum standards (2007) but is based on the basic methodology for doing archaeological surveys as described in various academic text books, such as Joukowsky (1980), Renfrew & Bahn (1991) and Van Vollenhoven (2000).

If required, the location/position of any site was determined by means of a Global Positioning System (GPS)¹, while photographs were also taken where needed. The survey was undertaken by doing a physical survey via off-road vehicle and on foot and covered as much as possible of the area to be studied (Figure 5-8).

Certain factors, such as accessibility, density of vegetation, etc. may however influence the coverage. The Study Area surveyed is larger than 4000 Ha. The basic assessment survey took 24 hours to complete and the first HIA another 16. The current survey took another 16 hours.

¹ A Garmin Oregon 550 with an accuracy factor of a few meters.

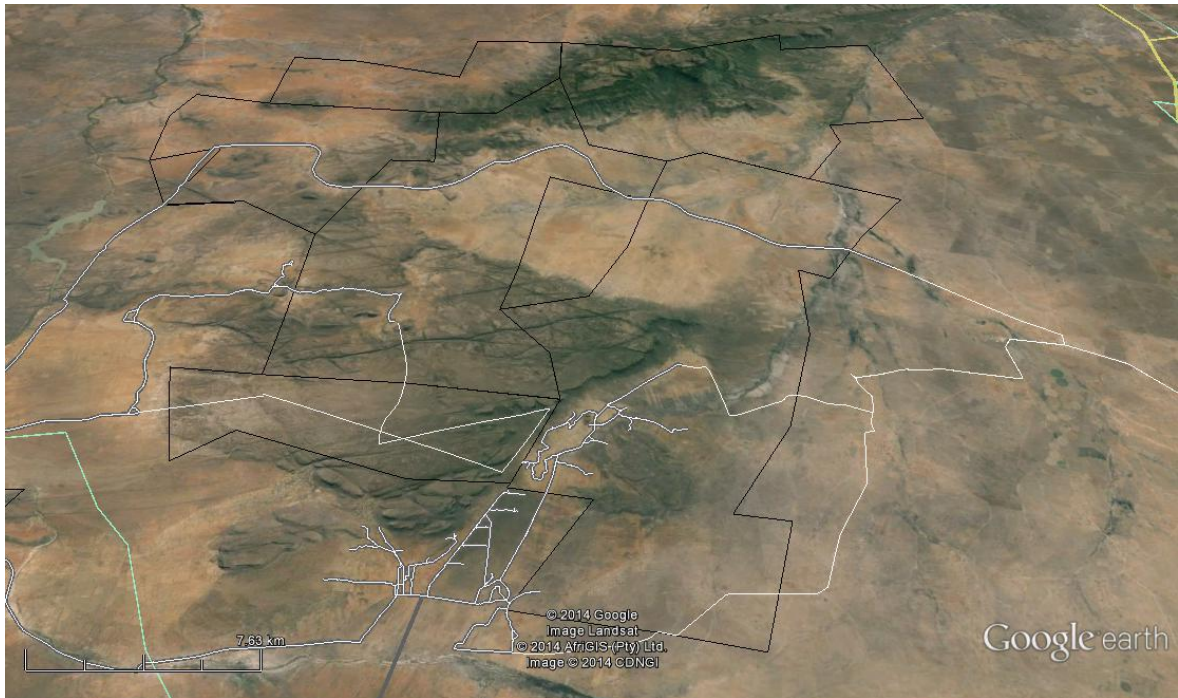


Figure 5: GPS track of the surveyed area² (first site visit). North reference is to the top.

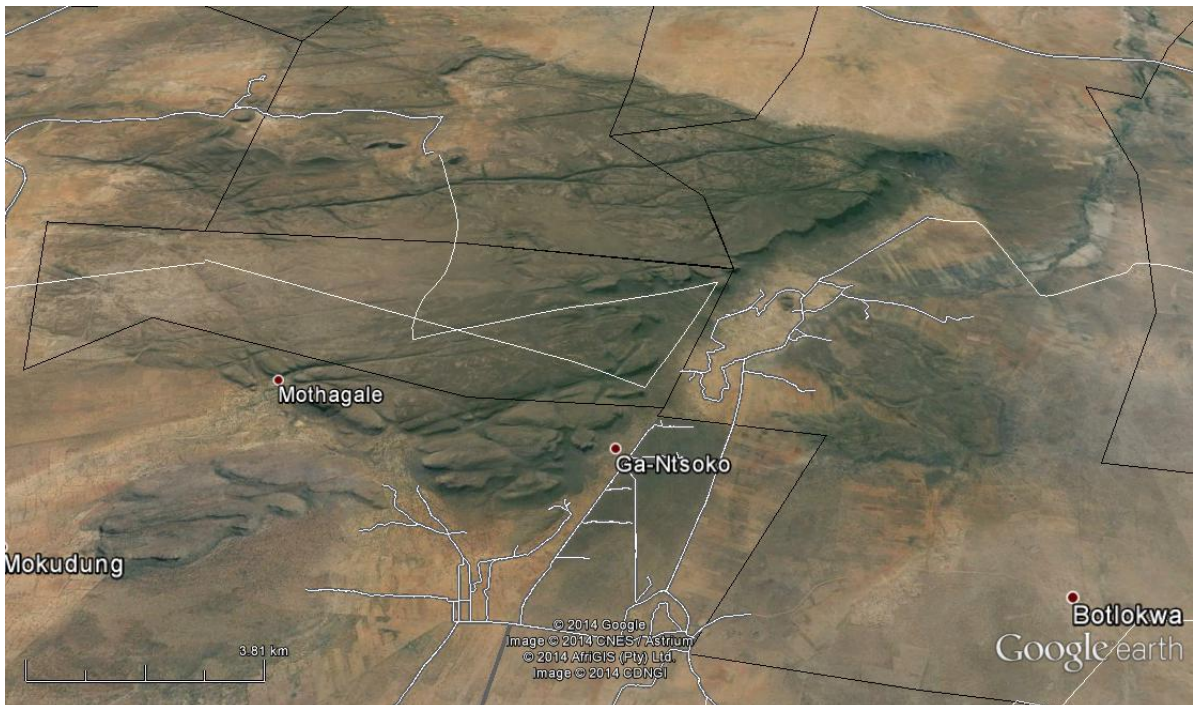


Figure 6: GPS track of the surveyed area³ (second site visit). North reference is to the top.

² Two archaeologists, in radio contact, did the survey, but only one GPS unit was used.

³ Two archaeologists, in radio contact, did the survey, but only one GPS unit was used.

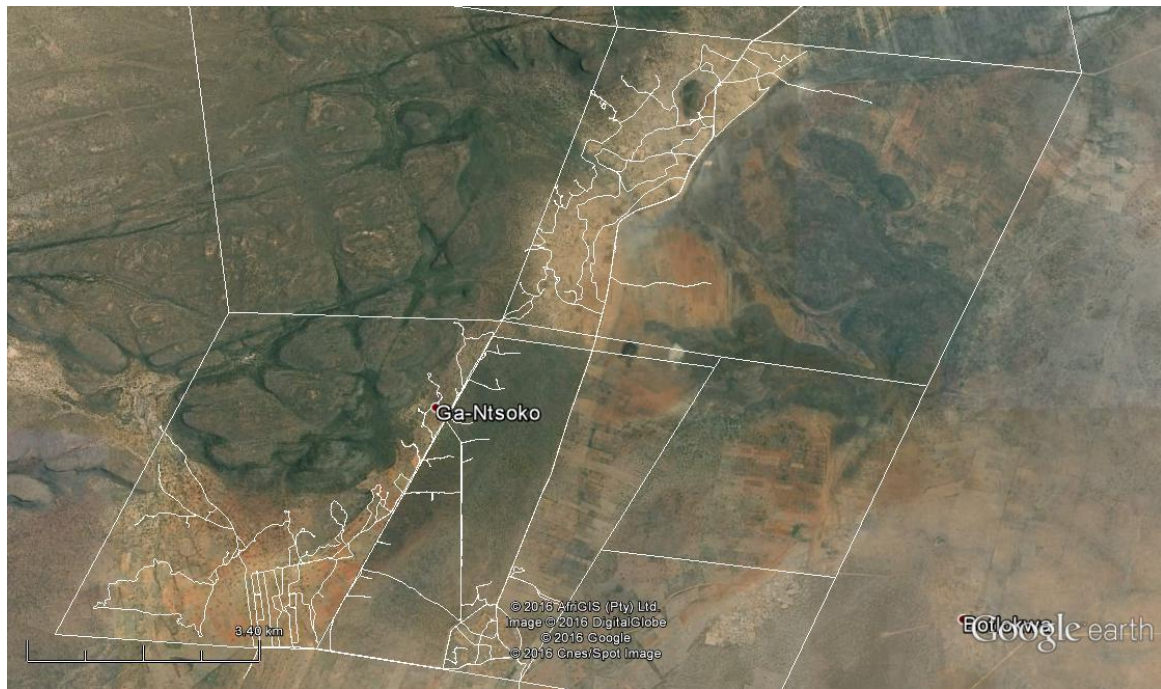


Figure 7: GPS track of the surveyed area⁴ (2016 site visit). North reference is to the top.

⁴ Two archaeologists, in radio contact, did the survey, but only one GPS unit was used.

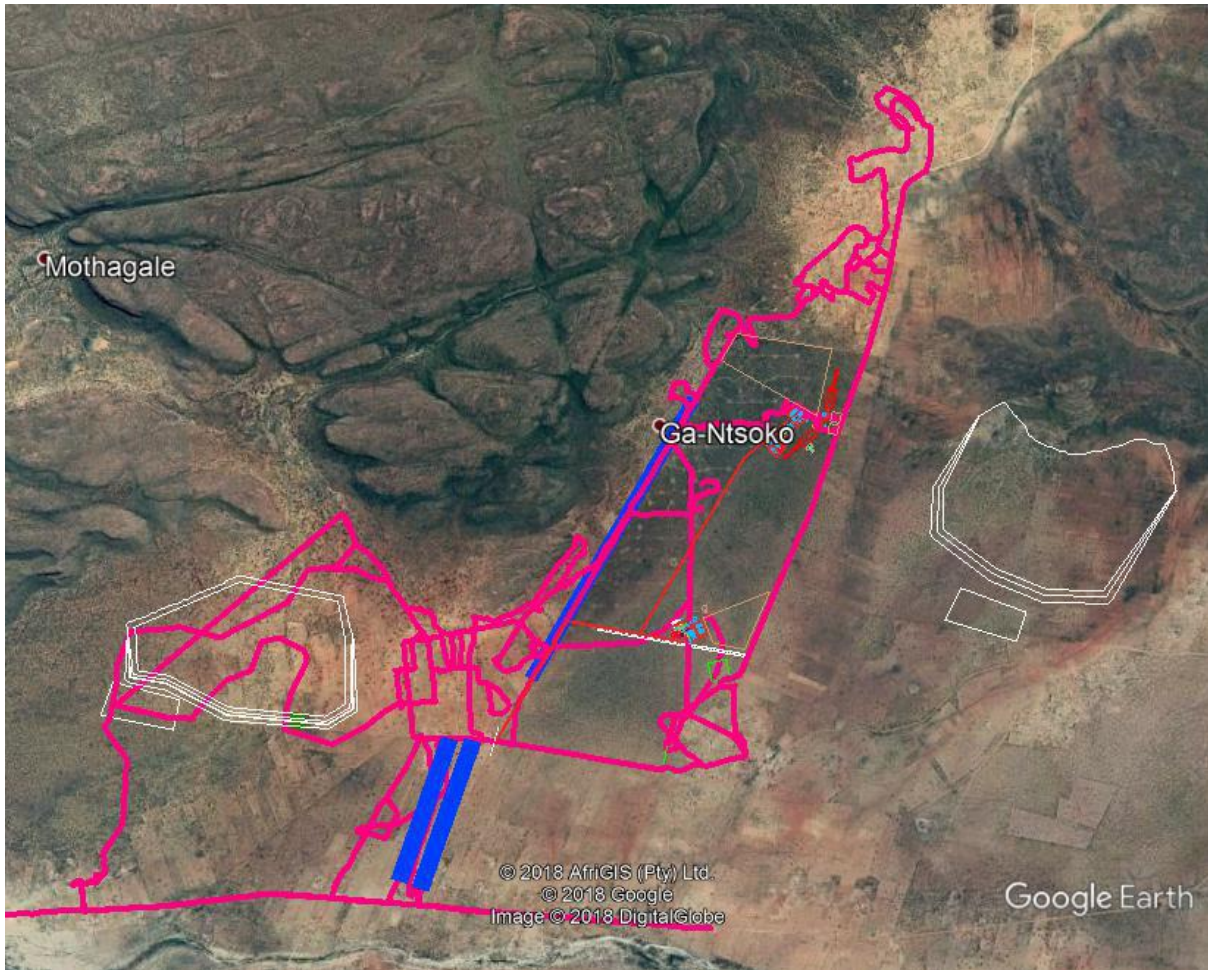


Figure 8: GPS track of the surveyed area⁵ (2018 site visit). North reference is to the top.

5.3 Oral histories

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

5.4 Documentation

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

⁵ Two archaeologists, in radio contact, did the survey, but only one GPS unit was used.

5.5 Evaluation of Heritage sites

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

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

6. DESCRIPTION OF THE AREA

Although the survey was done on seven farms, the general environmental characteristics of these are more or less the same. On these farms there are small villages, consisting of houses, other buildings (e.g. schools) and dirt roads (Figure 9).

The farms consist of communal land, mostly disturbed by recent human activities. This includes agriculture and grazing, with the latter usually further away from the village. Apart from agricultural fields, some old fields were also noted (Figure 10-11). Most of the land used for livestock has been overgrazed. This results in areas with little plant growth, showing trees but little grass cover and areas with pioneer species such as acacias, sickle bush and candelabra trees (Figure 12-13).

Although the under footing of the surveyed area therefore is mostly open, there are areas with dense vegetation with the accordingly negative effect on horizontal and vertical archaeological visibility (Figure 14). Other signs of disturbance found are possible earlier prospecting or even mining as well as erosion (Figure 15-16).

It needs to be indicated that the vegetation cover was much denser than during any other previous survey, due to the time of year it was conducted (May 2018, after a good rain season). However, although it may have had a negative effect on archaeological visibility, it needs to be realized that it is the fourth time the site was surveyed and therefore the surroundings were reasonably well-known.

The topography of the seven farms are reasonably even. However, both Early Dawn and Ketting have a very steep rise to the plateau on its western side and Disseldorp to its north-western side. The general view here is rocky (Figure 17). At Early Dawn there also is a few smaller hills towards the northwestern and southeastern sides of the farm.

No large rivers are found close to the project area. A few non-perennial streams do however drain the entire area.



Figure 9: Houses at one of the villages in the surveyed area.



Figure 10: Agricultural field in the surveyed area.



Figure 11: Old fields in the project area.



Figure 12: General view of an overgrazed area.



Figure 13: View of overgrazed area including pioneer plant species, such as candelabra trees.



Figure 14: View of one of the areas showing dense vegetation.



Figure 15: View of an area showing signs of earlier prospecting or mining activities.



Figure 16: Large excavation from earlier mining activities in the surveyed area.



Figure 17: Mountainous section in the surveyed area.

7. HISTORICAL CONTEXT

As indicated, twenty-seven sites of cultural heritage significance were located on the seven farms surveyed. Two of these are new sites. Other sites are known from previous surveys on the surrounding farms. A few heritage reports of the surrounding area were found on the SAHRA database as well as the database of Archaetnos (see reference list – Nel, Pelsler and Van Vollenhoven). Some of these were desktop studies, which did not provide specific information on the study area, but rather about the broader geographical environment.

A few scholars (see reference list) also did archaeological research in the area. Unfortunately, some of these reports are not accessible, although indicated on the SAHRIS system of SAHRA (SAHRIS database). Much of the information was however captured by Nel and Van Vollenhoven.

Many sites are known from the surrounding environment of the surveyed area (Archaetnos database). In order to place this within context and to understand possible finds that could be unearthed during construction activities, it is necessary to give a background regarding the different phases of human history in the area.

It also needs to be noted that the Makgabeng Plateau is seen as being a very sensitive heritage area. However, the mining impact is limited to the plains east of the plateau. Therefore, only mention will be made of sites on the plateau.

7.1 Stone Age

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

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

Many Stone Age sites have been identified previously in the Limpopo Province. Sites dated to the Early Stone Age were identified at Blaauwbank close to Rooiberg, at the Cave of hearths and Schoonheid close to Mokopane, at Olieboompoort to the north of Thabazimbi and at Kalkbank to the south of Schoemansdal (Bergh 1999: 4).

Middle Stone Age sites are known at Tuinplaats to the east of Bela-Bela, at Olieboompoort to the north of Thabazimbi, at the Cave of Hearths and Rufus Cave close to Mokopane, at Grace Dieu and Mwulu Cave close to Polokwane, at Kalkbank to the south of Schoemansdal and at Noord-Brabant and Goergap to the east of Lephalale (Bergh 1999: 4). One Middle Stone Age site is known from the farm Mont Blanc, close to the surveyed area (Sadr 2005).

Late Stone Age sites have been identified at Wellington Estates to the east of Settlers, at Modimolle, at Olieboompoort to the north of Thabazimbi, at the Cave of Hearths close to Mokopane, at Noord-Brabant close to Lephalale, at Kalkbank to the south of Schoemansdal and in the Greefswald area. Closer to the surveyed area only one Late Stone Age site is known. It is called the Makgabeng site close to Blouberg (Bergh 1999: 4).

Rock art is also associated with the Late Stone Age. Such sites were found in abundance in the Limpopo Province. Rock paintings are located along the Limpopo River, the Soutpansberg, Waterberg, Strydpoortberg and the areas in between these. Rock engravings were found along the Mogalakwena and Limpopo Rivers, and between the Olifants and Steelpoort Rivers (Bergh 1999: 4). This includes the study area.

It is clear that the mentioned sites were identified in rural areas and therefore there is a good chance of finding Stone Age sites in this environment, especially close to rivers and mountains. These natural features create an environment suitable for human habitation.

At least one Middle Stone Age site was identified in close proximity to the project area (Nel et.al 2013: 43-44). Nel et.al. (2013: 20-27) also indicates the Late Stone Age existence in the more immediate vicinity of the project area. They mention that more than 460 rock art sites have been documented in this region. However, Eastwood and Tlouamma (2006:9) indicates that they documented more than 670 sites in the region. This includes San rock art as well as finger paintings associated with the Khoi. Rock

paintings were noted on the plateau by Van Essen (2018), one of the specialists who did a bio-diversity study on the plateau (Figure 18-19).



Figure 18: Rock painting found on the Makgabeng plateau. These are likely associated with San people (courtesy of LD van Essen).



Figure 19: Rock paintings in a rock shelter on the plateau. These are probably related to Iron Age people (courtesy of LD van Essen).

Late Stone Age sites on the Makgabeng Plateau was also researched and described by Bradfield et.al. (2009: 176-183). They indicate that research has been done in the past here by Roberts (1916), Mason (1962) and Sampson (1974). Bradfield excavated a specific shelter called Mphekwane.

Although no such sites were identified during the survey, it is clear from the above mentioned that Stone Age people did utilize and settled in the broader geographical area. There however are some hiatuses due to certain farms not having been researched before. One will therefore have to be careful during mining that sites are not disturbed. These are however to expected against and on top of the Makgabeng Plateau which is adjacent to the area of impact.

Things to be on the lookout for would be caves, rock shelters, rock outcrops and areas with scattered stone tools in the open, especially close to rivers. This environment is found on the western sections of the farms Early Dawn and Ketting.

Stone tools can be recognized by it showing definite sharp edges as well as cut and hammering marks, which would distinguish it from ordinary stones (Figure 20-22). Rock paintings may also be found in caves and rock shelters whereas large stones in the open may contain rock engravings (Figure 23-25).



Figure 20: Example of an Early Stone Age tool found in Gauteng (Archaetnos' database).



Figure 21: An example of Early Stone Age (top) and a Middle Stone Age tool (bottom) from Archaetnos' collection (Archaetnos' database).



Figure 22: Examples of Late Stone Age tools from Archaetnos' collection (Archaetnos' database).



Figure 23: Rock paintings from the Limpopo Province (Archaetnos' database).



Figure 24: Rock engraving (pecking) from Beeshoek in the Northern Cape (Archaetnos' database).



Figure 25: Rock engravings from Putsonderwater, Northern Cape (Archaetnos database).

7.2 Iron Age

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

Early Iron Age (EIA) 200 – 1000 A.D.

Late Iron Age (LIA) 1000 – 1850 A.D.

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

Early Iron Age (EIA) 250 – 900 A.D.

Middle Iron Age (MIA) 900 – 1300 A.D.

Late Iron Age (LIA) 1300 – 1840 A.D.

Very few Early Iron Age sites have been identified. In Limpopo Province these include sites at Kommando Kop, Pont Drift, Mapungubwe and Schroda in the Limpopo Valley. Other sites are Happy Rest/ Matakoma close to Schoemansdal, Klein Afrika to the north of Louis Trichardt, the Eiland site along the upper Letaba River, Silver Leaves close to Tzaneen, at Harmonie to the south of Leydsdorp and at Diamant to the north of Thabazimbi (Bergh 1999: 6). Sites were also identified close to Burgersfort and Hoedspruit (Archaetnos database). No Early Iron Age sites are indicated in a historical atlas (Bergh 1999) close to the surveyed area.

Middle Iron Age sites include the World Heritage site at Mapungubwe as well as K2, Kommandokop and Schroda in the Limpopo Valley (Bergh 1999: 7). No Middle Iron Age sites are indicated in a historical atlas (Bergh 1999) close to the surveyed area.

Late Iron Age sites are found in abundance throughout the Limpopo Province. Pelsler (2011: 11) indicate that many such sites exist close to Alldays but does not provide any details. Known sites include those along the Sand and Levuvhu Rivers, various sites in the Kruger National Park (including Thulamela, Makahane and others), at least 58 sites near the town of Phalaborwa, 200 sites along the Lephalala River, 35 sites to the south of Polokwane, 42 sites to the east of Mokopane, 13 smelting sites in the Strydpoort Mountains and 63 sites between Thabazimbi and Rooiberg (Bergh 1999: 7). None of these are in the surveyed area.

Specific sites relating to archaeo-metallurgy were also identified. Sites where copper smelting were identified include some to the west and south of Musina, to the north and west of Phalaborwa (including Lolwe), sites to the south of Leydsdorp, between Tzaneen and Polokwane, along the Hout River and close to Modimolle. Sites where iron were worked include those at Tshimbupfe to the east of Louis Trichardt, sites around Phalaborwa, sites between Polokwane and Tzaneen, to the north and east of Modimolle and to the east of Thabazimbi. Signs of gold working were only found at four sites namely Mapungubwe, Machedema, Makahane and Thulamela. Tin workings were identified at Blaauwbank and Rooiberg in the south-west of the province (Bergh 1999: 8). More sites known are sites on the farm Icon, Matoks, Manavela, Tavhatshena and the farm Stayt (Archaeos database). Van Schalkwyk also indicated that iron was worked at a site on the farm Millbank (Bradfield et.al. 2009: 180).

The lack of known sites in the Study Area is merely an indication that these have not been surveyed in the recent past. Therefore, chances are good that Iron Age material and sites will be identified on some of these farms. Early Iron Age sites are usually found close to rivers. During a very recent survey such sites were indeed identified on the southern side of Blouberg and the northern side of the Makgabeng Plateau. Mention is made of a number of Early Iron Age sites on farms in and close to the project area (Nel et.al. 2013: 20-23).

During the mentioned recent survey, in close proximity to the project area, Nel et.al. (2013: 20-29, 35-40, 44-46) did identify Late Iron Age sites. They also mention rock art sites, known as finger paintings, associated with Northern Sotho speaking farming communities of the Late Iron Age. These were studied by Smith & Van Schalkwyk (2002: 235-254) who indicated that a specific painting of a camel can be dated to the early 20th century.

Van Schalkwyk indicated that Iron Age farmers moved into the area during the 13th century. He also did some excavations on the farm Millbank on a 16th and 17th century LIA village (Bradfield et.al. 2009: 176).

Late Iron Age sites are normally found on the foot or against slopes of hills. These sites can be identified by extensive stone walled complexes that served as

homesteads and cattle kraals (Figure 26). Sometimes these sites can be identified by only a few potsherds (Figure 27). The lack of known sites closer to the project area may only indicate that no research has been done in this area. During the mentioned recent survey in close proximity to the project area, Nel et.al. (2013: 20-29, 35-40, 44-46) did identify Late Iron Age sites. They also mention rock art sites, known as finger paintings, associated with Sotho speaking farming communities of the Late Iron Age.

One such site was identified during the current survey, but since the environment is definitely suitable therefore one should be cautious. Caution should especially be taken when working in the areas close to mountains (against slopes, in saddles or on top) and rivers. On Goedetrouw some Iron Age remains were also noted (Van Vollenhoven 2015b).

On the farm Ketting a few sites have been identified by one of the project geologists. It includes seven Late Iron Age sites and one cave with pottery and other remains (Figure 28-31). The biodiversity specialist made mention of similar sites (Figure 32-33). These sites are important, and one will have to conduct further studies, especially on the cave site. These sites are however far away from the proposed infrastructure development on site.

The strategic position of some of these sites indicates that the sites were utilized during times of turmoil, e.g. the Difaquane or the wars against the former Boer republic of the ZAR. This would place it within the historical era (see below), but the characteristics of the sites are similar to that of Late Iron Age sites.



Figure 26: Typical Late Iron Age stone walling (Archaetnos' database).



Figure 27: Typical Iron Age pottery (Archaetnos' database).



Figure 28: Late Iron Age walling on the farm Ketting (courtesy of Geoactive Dynamic Geological Services).



Figure 29: Late Iron Age terraces on Ketting (courtesy of Geoactive Dynamic Geological Services).



Figure 30: Low stone wall in front of a cave with Iron Age remains inside (courtesy of Geoactive Dynamic Geological Services).



Figure 31: Ceramic pots found inside of the cave (courtesy of Geoactive Dynamic Geological Services).



Figure 32: Iron Age feature at cave entrance (courtesy of LD van Essen).



Figure 33: Iron Age pottery at a rock shelter on the Makgabeng Plateau.

8.3 Historical Age

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. This era is sometimes called the Colonial era or the recent past. Due to factors such as population growth and a decrease in mortality rates, more people inhabited the area during the recent historical past. Therefore, much more cultural heritage resources have been left on the landscape. It is important to note that all cultural resources older than 60 years are potentially regarded as part of the heritage and that detailed studies are needed in order to determine whether these indeed have cultural significance.

It is known that some of the early trade routes went past the Study Area, to the east thereof (Bergh 1999: 9). At the beginning of the 19th century different indigenous groups resided here. To the north it was the Hananwa who entered circa 1820/30 and to the south the Koni of Matlala, the Moletse/Kwena and the Langa Ndebele (Bergh 1999: 10). The Hananwa are the present occupiers of the area (Bradfield et.al.2009: 179).

The only early white traveller who visited this area was Coenraad de Buys in 1821 and 1825. In fact, he settled here (Bergh 1999: 12-13). The Voortrekkers under leadership of Louis Tregard also moved through this area in 1836 (Bergh 199: 14).

White farmers settled in the Soutpansberg area during the 1840's and established the town of Schoemansdal (Bergh 1999: 14). They never settled further to the west in the project area. The white farmers were followed by the Berlin Missionaries and later other missionaries (Nel et.al. 2013: 21; Bergh 1999: 57).

In 1894 a war broke out between the Boers and the Hananwa in the Blouberg area. This was known as the Maleboch War. During the War several fortifications were erected of which some are still to be seen today (Van Schalkwyk & Moifatswane 1991: 1-17; Smith & Van Schalkwyk 2002: 237; Nel et.al. 2013: 21-22; Bergh 1999: 36). This lies just to the north of the surveyed area. Late Iron Age/ Historical stone walled sites, linked to this period, have also been identified close to the project area (Nel et.al. 2013:31-34, 41-43). The Historical/ Late Iron Age sites identified on Ketting (see above) may also date from this period in time.

It seems as if many of the farms surveyed were only used for grazing by white farmers. By 1904 the area was however allocated to different indigenous groups (Bergh 1999: 41). It later on became part of the so-called Lebowa State (Bergh 1999: 43).

It therefore is clear that one would rather expect recent historical structures in the area than older or even prehistoric features. According to legislation everything older than 60 years can potentially be deemed as of heritage value, although one has to also consider other factors, such as uniqueness and state of the site. It would be impossible to list every heritage site older than 60 years. Sites, features and structures that are known from nearby the surveyed area are nevertheless listed below:

- Schoemansdal Voortrekker town and graveyard (Stoffberg 1988);
- ZAR fortifications at Blouberg;
- Mission stations, including Phatametsane, Khalatlolu, Bethesda, Malokong, Blaumberg, Medingen, Mp'hôme, Kranspoort, Georgholtz, Ha Schewasse, Tshakoma and Valdezia;
- Battlefields from the Anglo-Boer War (1899-1902) including Fort Edward close to Louis Trichardt, Fort Klipdam and Pietersburg to the north of Polokwane and Houtboschberg to the east of Polokwane;
- The place where Louis Tregardt met Portuguese Askari's and site of the State Artillery in Louis Trichardt (Oberholster 1972; Bergh 1999).

Declared national heritage sites include the following:

- Fort Hendrina in Louis Trichardt;
- The first ore stamper for gold on the farm Eersteling close to Polokwane;
- The Louis Tregardt monument north of Polokwane;
- Schoemansdal, mentioned earlier;
- Stonehenge, a residential farm house on the farm Bergvliet close to the Soutpansberg;
- The trek route of Louis Tregardt (Oberholster 1972; Bergh 1999);
- Fort Klipdam north of Polokwane, mentioned above (Oberholster 1972; SAHRA database; Bergh 1999).

One may therefore expect to find buildings and structures of a similar age (i.e. mid-19th century) on the farms within the Study Area. This is likely to coincide with the missionaries or structures built by farmers. It however seems as if these farms were scarcely inhabited by white farmers and rather used as grazing land.

Sites found will undoubtedly include graves. In fact, grave sites have been identified on adjacent farms during previous survey (Net et.al. 2013: 26, 29-30, 34-35, 41; Van Vollenhoven & Collins 2014; Van Vollenhoven 2015a; Van Vollenhoven 2016). Other historical sites were also identified during the latter surveys (Van Vollenhoven 2015a; Van Vollenhoven 2016).

8. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY

As indicated, twenty-seven sites of cultural importance were identified in the Study Area (Figure 34-35). Of these 11 were on Ketting, 2 on Goedetrouw, 2 on Old Langsine and 11 on Early Dawn. None were identified at Disseldorp.

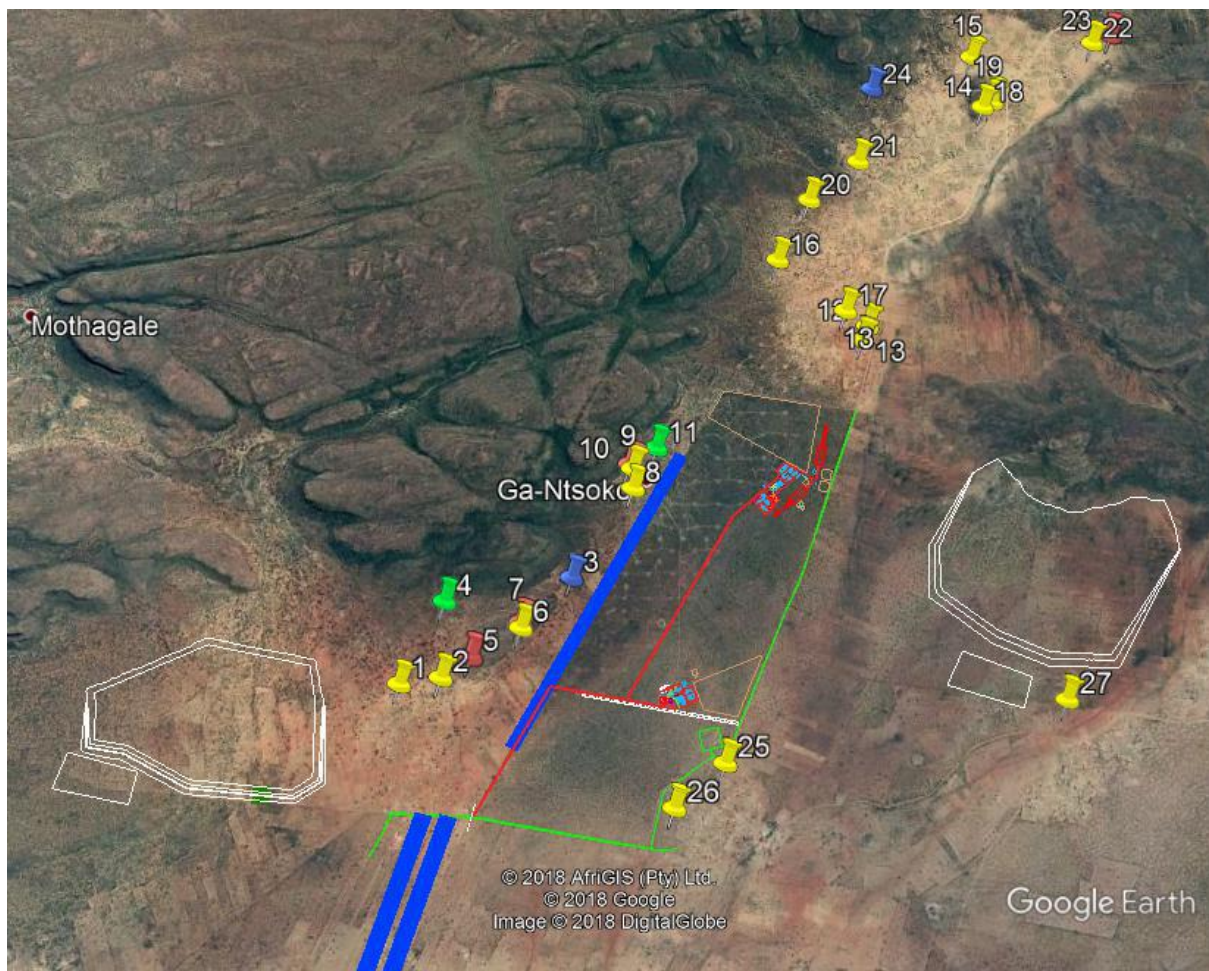


Figure 34a: Sites identified during various surveys in the project area related to Alternative 1.
Yellow – graves
Blue – Iron Age
Red- historical/residential
Green – historical/residential with associated graves

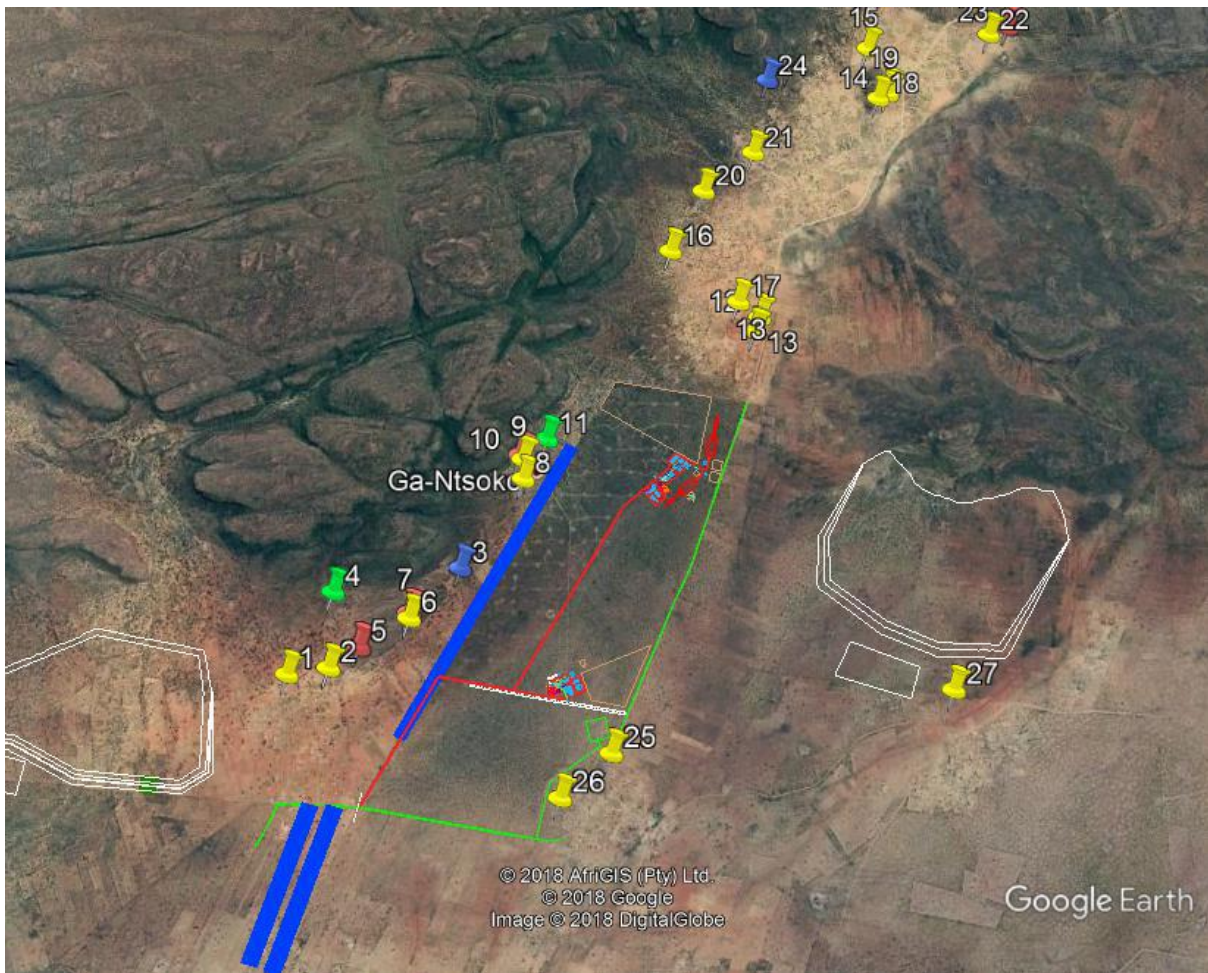


Figure 34b: Sites identified close to the development areas related to Alternative 1.
Yellow – graves
Blue – Iron Age
Red- historical/residential
Green – historical/residential with associated graves

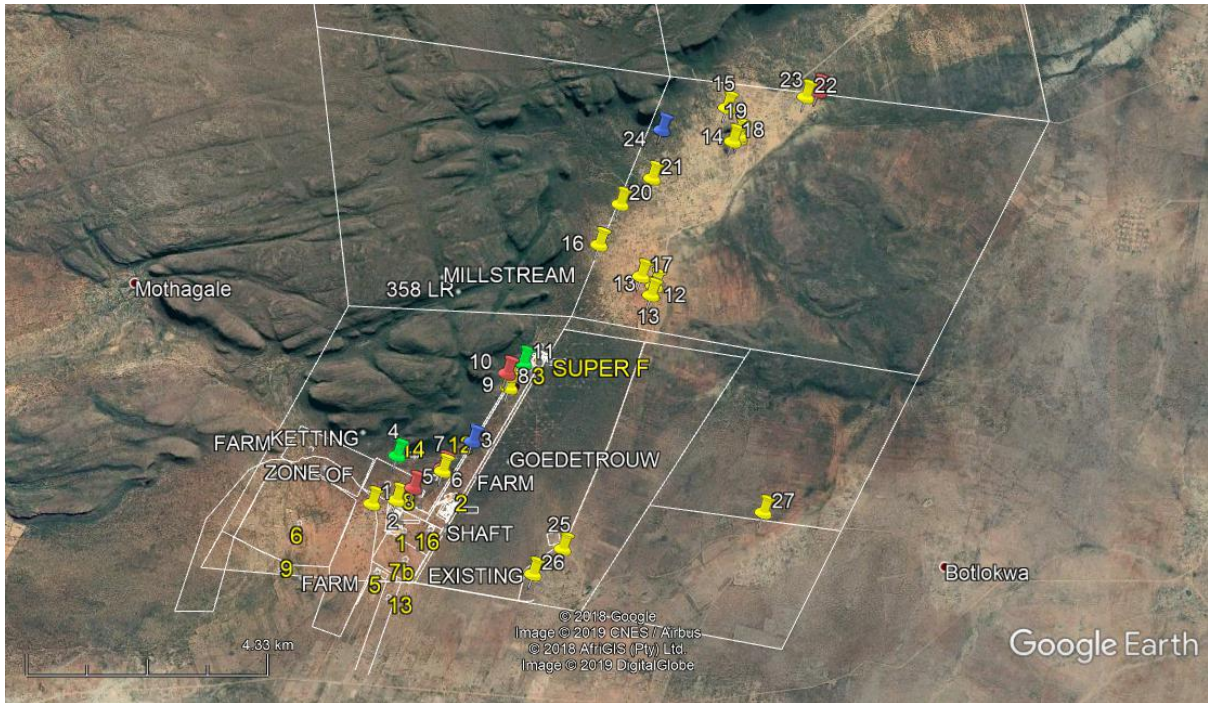


Figure 35a: Sites identified during various surveys in the project area related to Alternative 2.
Yellow – graves
Blue – Iron Age
Red- historical/residential
Green – historical/residential with associated graves

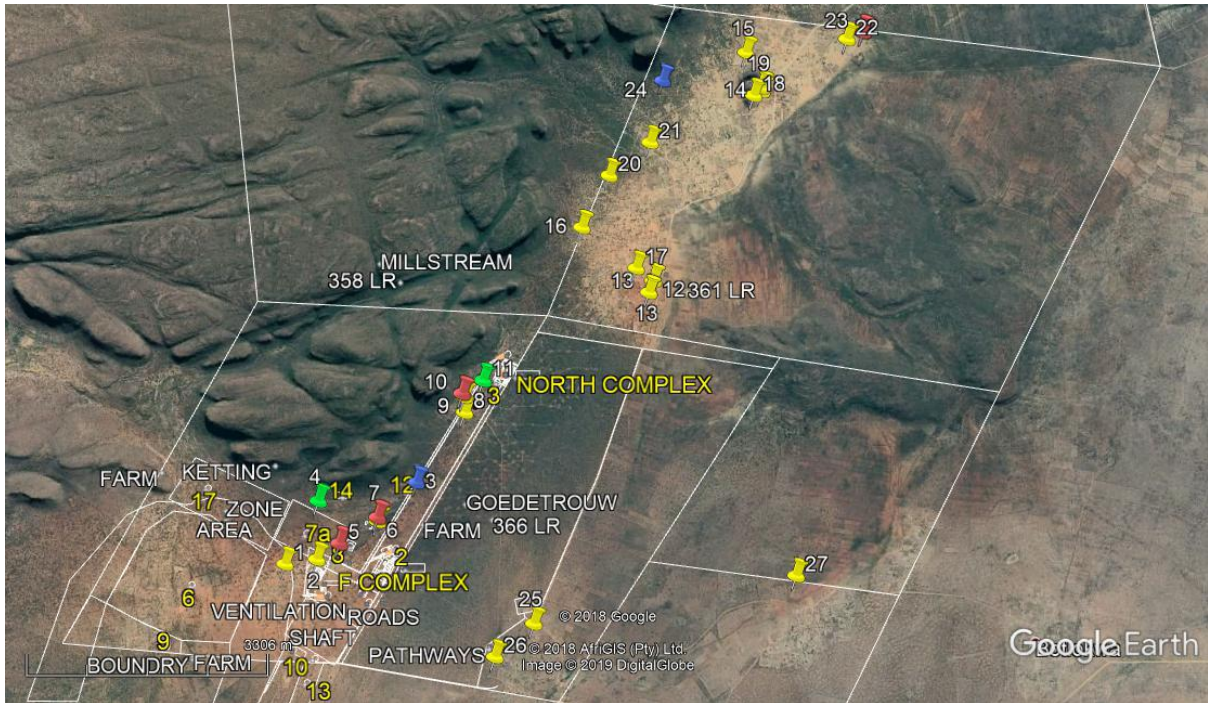


Figure 35ba: Sites identified close to the project area related to Alternative 2.
Yellow – graves
Blue – Iron Age
Red- historical/residential
Green – historical/residential with associated graves

Sixteen of these sites are close to the development area, but not all will be impacted on directly. For Alternative 1 these are numbers 1-13, 17 and 25-27. Sites number 14-16 and 18-24 therefore will not be impacted on. For Alternative 2 those to be impacted on are 1-11 and 16, Therefore sites number 12-15 and 17-27 will not be impacted on.

The sites consist of Iron Age remains, historical ruins and graves. The latter were found on five of the farms (nothing on Disseldorp), with Iron Age remains being found on Ketting and Early Dawn and historical remains on Ketting. Some large Late Iron Age sites (see earlier) were also identified outside of the area of impact on the farm Ketting.

8.1 Iron Age

Two sites where Iron Age remains were identified were located. These are:

Site 3 - Ketting: Iron Age lower grinding stones

GPS: 23° 22' 40.1"S; 28° 53' 29.5" E

This site consists of nothing more than a few broken lower grinding stones (Figure 36-37). The site lies within the development area but will likely not be impacted on by any of the alternatives.



Figure 36: Lower grinding stone at Ketting.



Figure 37: More lower grinding stones at Ketting.

Cultural significance Table: Site 3

| A place is considered to be part of the national estate if it has cultural significance because of - | Applicable or not | Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High |
|---|--------------------------|---|
| Its importance in the community or pattern of South Africa's history | Y | N |
| Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history | Y | N |
| Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage | N | - |
| Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects | Y | N |
| Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group | N | - |
| Its importance in demonstrating a high degree of creative or technical achievement at a particular period | N | - |
| Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons | Y | L |
| Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa | N | - |
| Sites of significance relating to the history of slavery in South Africa | N | - |
| Reasoned assessment of significance using appropriate indicators outlined above: | | 1,25 – Negligible |

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information

- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity
= 1,25 x 2
= 2,5

The site therefore has low cultural significance and receives a field rating of Local Grade IIIC: The description in the phase 1 heritage report is seen as sufficient recording and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorisation.

Site 24 (site 11 from 2016 report) - Early Dawn: Iron Age pottery

This is the same site as three sites identified by Nel et.al. (2013). However, it is very close together and consist of nothing more than isolated pottery and therefore is now combined into one. Only one decorated potshard was identified (Figure 38).

One cannot really base a pottery analyses on only one potshard. This one however does look similar to Icon pottery, which forms part of the Moloko branch of the Urewe ceramic tradition. If so, it would relatively date to between 1300 and 1500 AD (Huffman 2007: 183-185).

GPS: 23° 19'40.9"S; 28° 55' 28.5" E
23° 19'35.7"S; 28° 55' 26.7" E
23° 19'34.0"S; 28° 55' 22.5" E (Figure 38)

The site lies within the development area but will likely not be impacted on by any of the two alternatives.



Figure 38: Decorated pottery from one of the three sites on Early Dawn.

Cultural significance Table: Site 24

| A place is considered to be part of the national estate if it has cultural significance because of - | Applicable or not | Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High |
|---|--------------------------|---|
| Its importance in the community or pattern of South Africa's history | Y | N |
| Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history | Y | N |
| Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage | N | - |
| Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects | Y | N |
| Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group | N | - |

| | | |
|---|---|-------------------|
| Its importance in demonstrating a high degree of creative or technical achievement at a particular period | N | - |
| Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons | Y | L |
| Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa | N | - |
| Sites of significance relating to the history of slavery in South Africa | N | - |
| Reasoned assessment of significance using appropriate indicators outlined above: | | 1,25 – Negligible |

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 1,25 \times 2$$

$$= 2,5$$

It therefore has low cultural significance and receives a field rating of Local Grade IIIC: The description in the phase 1 heritage report is seen as sufficient recording and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorisation.

8.2 Graves

Graves are always regarded as having a **high** cultural significance. The field rating thereof is Local Grade III B. It should be included in the heritage register but may be mitigated.

Two possibilities exist. The first option would be to fence the graves in and have a management plan drafted for the sustainable preservation thereof (“Option 1”). This should be written by a heritage expert. This usually is done when the graves are in no

danger of being damaged, but where there will be a secondary impact due to the activities of the mine.

The second option is to exhume the mortal remains and then to have it relocated (“Option 2”). This usually is done when the graves are in the area to be directly affected by the mining activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years, only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA. This procedure is quite lengthy and involves social consultation.

Cultural significance Table: Sites 1-2; 4; 6-9; 11-12-22;25-27

| A place is considered to be part of the national estate if it has cultural significance because of - | Applicable or not | Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High |
|---|--------------------------|---|
| Its importance in the community or pattern of South Africa’s history | Y | H |
| Its possession of uncommon, rare, or endangered aspects of South Africa’s natural or cultural history | N | - |
| Its potential to yield information that will contribute to an understanding of South Africa’s natural or cultural heritage | Y | H |
| Its importance in demonstrating the principal characteristics of a particular class of South Africa’s natural or cultural places or objects | Y | H |
| Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group | N | - |
| Its importance in demonstrating a high degree of creative or technical achievement at a particular period | N | - |
| Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons | Y | H |
| Its strong or special association with the life or work of a person, group or organization of | N | - |

| | | |
|---|---|----------|
| importance in the history of South Africa | | |
| Sites of significance relating to the history of slavery in South Africa | N | - |
| Reasoned assessment of significance using appropriate indicators outlined above: | | 6 – High |

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 6 \text{ (High)} \times 4$$

$$= 24$$

The field rating for these sites are Local Grade IIIB: The sites should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority.

Graves on the farm Ketting:

In some cases, the grave sites include historical remains.

Site 1 – grave yard

This is a site containing at least 14 graves (Figure 39). Most of the graves are stone packed, with or without headstones, but some also have granite headstones and borders. Surnames identified include Ramokgaba and Mantla.

GPS: 23°23'16.0"S; 28°52'26.1"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. The oldest date of death identified is 1947 and the youngest 1993. However, graves from all three of the categories of graves were identified, being those older than 60 years (heritage graves), those without a date of death (called unknown graves) and those younger than 60 years. Unknown graves are handled similarly to heritage graves.

Although close to the development area, it seems these graves will not be impacted on directly by any of the development alternatives. Therefore Option 1 is recommended.



Figure 39: Some of the graves at site no. 1 - Ketting.

Site 2 – grave yard

This is a site containing at least 91 graves (Figure 40). Most of the graves are stone packed, with or without headstones, but some also have granite headstones and borders. Surnames identified include Ngoepe and Senosha.

GPS: 23°23'13.9"S; 28°52'41.5"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. However, graves from all three of the categories of graves were identified, being those older than 60 years (heritage graves), those without a date of death (called unknown graves) and those younger than 60 years. Unknown graves are handled similarly to heritage graves.

Although close to the development area, it seems these graves will not be impacted on directly by any of the two alternatives. Therefore Option 1 is recommended.



Figure 40: Some of the graves at site no. 2 - Ketting.

Site 4 – single grave and historical residential site

This is a residential site containing various rectangular and circular remains, most likely dating to the early to mid-20th century. The historical remains are built from cement and stone (Figure 41).

GPS: 23°22'48.1"S; 28°52'42.3"E

It is not very old or unique and in a very bad state of decay. Therefore, it has low cultural significance and receives a field rating of General protection C (IV C). This report is seen as sufficient recording and it may be demolished.

The grave however has high cultural significance. The surname of the person buried here is Rapheaga and the date of death 1930 (Figure 42). It has a granite headstone and grave dressing. It therefore is older than 60 years and is regarded to be a heritage grave.

The site will not be impacted on by any of the two alternatives. The residential site may be left as it is, but for the graves Option 1 is recommended.



Figure 41: Historical remains at site no. 4 - Ketting.



Figure 42: The grave at site no. 4 - Ketting.

Site 6 – grave yard

This is a site containing at least 15 graves (Figure 43). Most of the graves are stone packed, with or without headstones, but some also have granite or cement headstones and borders. Surnames identified include Mmakwena and Phukubje. The oldest date identified is 1966 and the youngest 1995. Nine of the graves have an unknown date of death.

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. Graves from two of the three of the categories of graves were identified, being those without a date of death (called unknown graves) and those younger than 60 years. Unknown graves are handled similarly to heritage graves.

The site is close to the development footprint of both alternatives and therefore there will be an indirect impact. Option 1 is recommended.

GPS: 23°22'57.1"S; 28°53'10.9"E



Figure 43: Some of the graves at site no. 6 - Ketting.

Site 8 – grave yard

This is a site containing at least 5 graves (Figure 44). All have granite headstones and borders. Only one surname was identified being Phukubje. The oldest date identified is 1904 and the youngest 1983.

GPS: 23°22'09.0"S; 28°53'52.8"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. Graves from two of the three of the categories of graves were identified, being one older than 60 years (called heritage graves) and those younger than 60 years.

This site also is close to the development, but no direct impact is foreseen for both alternatives. Option 1 is recommended.



Figure 44: Some of the graves at site no. 8 - Ketting.

Site 9 – grave yard

This is a site containing at least 11 graves (Figure 45). Most of the graves have granite or headstones and borders, with 2 having cement borders. Only one surname could be identified, being Phukubje. The oldest date identified is 1966 and the youngest 1982.

GPS: 23°22'02.2"S; 28°53'52.6"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. Graves from one of the three of the categories of graves were identified, being those younger than 60 years.

Although close to the development area, it seems these graves will not be impacted on directly by alternative 1. It is however directly impacted on by Alternative 2. Option

1 is recommended should Alternative 1 be chosen and Option 2 if Alternative 2 is chosen.



Figure 45: Some of the graves at site no. 9 - Ketting.

Site 11 – grave yard and historical residential site

This is a residential site containing various rectangular and circular remains, most likely dating to the early to mid-20th century. The historical remains are built from cement and stone. A refuse midden may also be present with glass and ceramic shards lying around.

GPS: 23°21'54.9"S; 28°54'01.6"E

The site is not very old or unique and in a very bad state of decay. Therefore, it has low cultural significance and receives a field rating of General protection C (IV C). This report is seen as sufficient recording and it may be demolished.

The graves however have high cultural significance. At least 9 graves are present. No surnames or dates of death could be identified (Figure 46). The graves are all stone packed. The graves are therefore unknown and should be handled similar to heritage graves.

The site is close to the development footprint for both alternatives and will therefore there will be an indirect impact. The residential site may be left as it is, but for the graves Option 1 is recommended.



Figure 46: The graves at site no. 11 - Ketting.

Graves on the farm Goedetrouw:

Site 25 (Site 1 from the 2016 report) – grave yard

This is a site containing at least 34 graves (Figure 47). Two of these are stone packed and one has a granite dressing. The graves are also fenced in. The only surname available is Sepufa and this person died in 1951. The other two graves have no information.

GPS: 23°23'41.2"S; 28°54'26.1"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. Graves from two of the three of the categories of graves were identified, being those older than 60 years (heritage graves) and those without a date of death (called unknown graves). Unknown graves are handled similarly to heritage graves.

There will be no direct impact on the site if any of two alternatives are implemented. Therefore Option 1 is recommended.



Figure 47: The graves at site no. 25 - Goedetrouw.

Site 26 (Site 2 from the 2016 report) – grave yard

This is a very large site containing at least 60 graves (Figure 48). All of the graves are either dressed with cement or granite with accompanying headstones. The graves are also fenced in. Surnames identified include Masehela, Laka, Boshomane, Monkoe and Makgoka.

GPS: 23°23'56.8"S; 28°54'07.4"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. Graves from two of the three of the categories of graves were identified, being those older than 60 years (heritage graves) and those younger than 60 years.

Again, for both alternative development plans, there will be no direct impact on site. Therefore Option 1 is recommended.



Figure 48: The graves at site no. 26 - Goedetrouw.

Graves on the farm Early Dawn:

Site 14 (site 1 from the 2016 report) – grave yard

This is a site containing at least 60 graves (Figure 49). Most of the graves are stone packed, with or without headstones, but some also have granite headstones and borders. One of the surnames identified is Malebana.

GPS: 23°19'45.9"S; 28°56'16.8"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. However, graves from all three of the categories of graves were identified, being those older than 60 years (heritage graves), those without a date of death (called unknown graves) and those younger than 60 years. Unknown graves are handled similarly to heritage graves.

There will be no direct impact on the site for both development alternatives. Thus Option 1 is recommended.



Figure 49: Some of the graves at site no. 14 – Early Dawn.

Site 15 (site 2 from the 2016 report) – grave yard

This is a site containing at least 50 graves (Figure 50). Most of the graves are stone packed, with or without headstones, but some also have granite headstones and borders. One of the surnames identified is Phuti.

GPS: 23°19'28.0"S; 28°56'09.4"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. However, graves from all three of the categories of graves were identified, being those older than 60 years (heritage graves), those without a date of death (called unknown graves) and those younger than 60 years. Unknown graves are handled similarly to heritage graves.

Again, for both development alternatives, no impact is foreseen on this site. Therefore Option 1 is recommended.



Figure 50: Some of the graves at site no. 15 – Early Dawn.

Site 16 (site 3 from 2016 report) – grave yard

This is a site containing at least 44 graves (Figure 51). Most of the graves are stone packed, with or without headstones, but some also have granite headstones and borders. Some of the surnames identified are Sekgala and Ngoepe.

GPS: 23°20'46.8"S; 28°54'49.3"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. However, graves from all three of the categories of graves were identified, being those older than 60 years (heritage graves), those without a date of death (called unknown graves) and those younger than 60 years. Unknown graves are handled similarly to heritage graves.

For development Alternative 1, no impact is foreseen on this site. Option 1 is therefore recommended. However, for development Alternative 2, direct impact is foreseen. Should Alternative 2 be chosen, Option 2 is recommended.



Figure 51: Some of the graves at site no. 16 – Early Dawn.

Site 17 (site 4 from the 2016 report) – grave yard

This is a site containing at least 70 graves (Figure 52). Most of the graves are stone packed, with or without headstones, but some also have granite headstones and borders. Surnames identified include Ramoroka and Mojela.



Figure 52: Some of the graves at site no. 17 – Early Dawn.

GPS: 23°21'05.0"S; 28°55'15.6"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. However, graves from all three of the categories of graves were identified, being those older than 60 years (heritage graves), those without a date of death (called unknown graves) and those younger than 60 years. Unknown graves are handled similarly to heritage graves.

For both development alternatives no direct impact is foreseen on the site. Thus Option 1 is recommended.

Site 18 (site 5 from the 2016 report) – single grave

This is a single grave with a granite headstone and dressing (Figure 53). The surname on the headstone is Ngoepe.

GPS: 23°19'47.3"S; 28°56'13.1"E



Figure 53: The grave at site no. 18 – Early Dawn.

The date of death on the grave is 1940. The grave therefore is older than 60 years and therefore is a heritage grave.

For both development alternatives, no direct impact is foreseen on the site. Therefore Option 1 is recommended.

Site 19 (site 6 from the 2016 report) – grave yard

This is a site containing at least 8 graves (Figure 54). Four of the graves have brick borders and four granite borders and headstones. One surname was identified being Motlokwane.

GPS: 23°19'43.8"S; 28°56'16.9"E

The oldest date of death is 1994 and the youngest 2000. This means that all the graves are younger than 60 years.

Again, for both development alternatives, no direct impact is foreseen. Option 1 is therefore recommended.



Figure 54: Some of the graves at site no. 18 – Early Dawn.

Site 20 (site 7 from the 2016 report) – grave yard

This is a site containing at least 50 graves (Figure 55). The graves mostly have granite headstones and borders, but some have cement dressing or are just stone packed. Surnames identified include Ngoepe and Ngwepe.

GPS: 23°20'23.5"S; 28°55'102.6"E



Figure 55: Some of the graves at site no. 20 – Early Dawn.

The oldest date of death is 1993 and the youngest 2009. Some have no information. This means that two of the three categories of graves are present being those with an unknown date of death and those younger than 60 years. Unknown graves are handled similar to heritage graves (older than 60 years).

For both development alternatives, no direct impact is foreseen. Option 1 is therefore recommended.

Site 21 (site 8 from the 2016 report) – grave yard

This is a large site containing at least 30 graves (Figure 56). The graves mostly have granite headstones and borders, but some have cement or brick dressing. A few are new graves only indicated by a heap of soil.

GPS: 23°20'08.6"S; 28°55'22.5"E

Surnames identified include Ramoroka, Thou, Sekwadi and Setumu. All the graves are fairly recent meaning they are all younger than 60 years.

For both development alternatives, no direct impact is foreseen on this site. Thus Option 1 is recommended.



Figure 56: Some of the graves at site no. 21 – Early Dawn.

Site 22 (site 9 from the 2016 report) – grave yard

This is a site containing at least 30 graves (Figure 57). Four of the graves have granite headstones and borders and one have cement dressing. The remainder are all stone packed. Only one surname was identified namely Mosina.

GPS: 23°19'21.5"S; 28°56'59.1"E

The oldest date of death is 1978 and the youngest 2008. Some have no information. This means that two of the three categories of graves are present being those with an unknown date of death and those younger than 60 years. Unknown graves are handled similar to heritage graves (older than 60 years).

For this site no direct impact is foreseen by any of the development alternatives. Therefore Option 1 is recommended.



Figure 57: Some of the graves at site no. 22 – Early Dawn.

Graves on the farm Old Langsine:

These are the only new sites identified during the 2018 survey.

Site 12 – grave yard

This is a site containing 2 graves (Figure 58). Both have granite headstones and borders. Only one surname was identified namely Mpebe.

GPS: 23°21'10.5"S; 28°55'23.8"E

The oldest date of death is 1963. This means that only one of the three categories of graves are present being those younger than 60 years.

For this site no direct impact is foreseen for any of the development alternatives. Therefore Option 1 is recommended.



Figure 58: Some of the graves at site no. 12 – Old Langsine.

Site 13 – grave yard

This site was identified by a community member. Only two stones are present, apparently indicating two graves (Figure 59-60). No other information is available.

GPS: 23°21'15.6"S; 28°55'21.9"E



Figure 59: First possible grave at site no. 13 – Old Langsine.



Figure 60: Second possible grave at site no. 13 – Old Langsine.

This means that one of the three categories of graves are present being those with an unknown date of death. Unknown graves are handled similar to heritage graves (older than 60 years).

For this site no direct impact is foreseen for any of the development alternatives. Therefore Option 1 is recommended.

Graves on the farm Norma:

Site 27 (site 36.19 from the Nel et.al, 2013 report) – grave yard

This is a site containing at least 140 graves (Figure 61). Most of the graves have granite headstones and borders. Some of the surnames identified is Ramaroka, Ngoepe, Mojela, Setumu and Masekoa.

GPS: 23°23'21.2"S; 28°56'32.2"E

It seems that most of the graves are fairly recent as it likely coincides with the establishment of the Lebowa State. The oldest date of death identified is 1940. Unfortunately Nel et.al. (2013) does not provide more information. For now it is assumed that it is likely that graves from all three of the categories of graves are present, being those older than 60 years (heritage graves), those without a date of death (called unknown graves) and those younger than 60 years. Unknown graves are handled similarly to heritage graves.

There will be no direct impact from any of the two development alternatives on the site. Thus option 1 is recommended.



Figure 61: Graves at site 27 on the farm Norma (courtesy of Nel et. al. 2013).

8.3 Historical remains

Four of these sites were identified. Three are on the farm Ketting and one at Early Dawn.

Historical remains on the farm Ketting:

Site 5 – Ketting historical residential site

The site consists of rectangular, circular and square remains of buildings. These were originally built from stone and cement (Figure 62).

GPS: 23° 23' 06.9" S; 28° 52' 52.4" E

The remains most likely date to the early to mid-20th century. It is not very old or unique. Although the site is close to the development footprint for both alternatives, no direct impact is expected.



Figure 62: Historical residential remains at site 5 - Ketting.

Cultural significance Table: Site 5

| A place is considered to be part of the national estate if it has cultural significance because of - | Applicable or not | Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High |
|---|--------------------------|---|
| Its importance in the community or pattern of South Africa's history | Y | L |
| Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history | N | - |
| Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage | N | - |
| Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects | N | - |
| Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group | N | - |
| Its importance in demonstrating a high degree of creative or | N | - |

| | | |
|---|---|---------|
| technical achievement at a particular period | | |
| Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons | Y | L |
| Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa | N | - |
| Sites of significance relating to the history of slavery in South Africa | N | - |
| Reasoned assessment of significance using appropriate indicators outlined above: | | 2 – Low |

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 2 \times 3$$

$$= 6$$

The field rating for the site therefore is Local Grade IIIB: The site should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority.

Site 10 – Ketting historical residential site

The site consists of rectangular remains of buildings. These were originally built from stone and cement (Figure 63). Some glass shards were also seen lying around.

GPS: 23° 22'00.7"S; 28° 53'51.6" E

Although the site is close to the development footprint of both development alternatives, no direct impact is expected.



Figure 63: Historical residential remains at site 10 - Ketting.

Cultural significance Table: Site 10

| A place is considered to be part of the national estate if it has cultural significance because of - | Applicable or not | Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High |
|---|--------------------------|---|
| Its importance in the community or pattern of South Africa's history | Y | L |
| Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history | N | - |
| Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage | N | - |
| Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects | N | - |
| Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group | N | - |

| | | |
|---|---|---------|
| Its importance in demonstrating a high degree of creative or technical achievement at a particular period | N | - |
| Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons | Y | L |
| Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa | N | - |
| Sites of significance relating to the history of slavery in South Africa | N | - |
| Reasoned assessment of significance using appropriate indicators outlined above: | | 2 – Low |

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 2 \times 3$$

$$= 6$$

The filed rating for the site therefore is Local Grade IIIB: The site should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority.

Site 7 – Circular stone walling

The site consists of at least two circular stone-built kraals (Figure 64). These are likely historical livestock enclosures and may be linked to any of the residential sites identified. There is a slight possibility that it may be dating back to the very last phase of the Late Iron Age. It also most likely is associated with site no 6 – graves. The site therefore most likely dates to between 1900 and 1950.

GPS: 23° 22'55.4"S; 28° 53'10.9" E

The site lies close to the development footprint and will probably not be impacted on by any of the development alternatives. It may therefore be left as it is.



Figure 64: Historical stone walling at site 7 - Ketting.

Cultural significance Table: Site 7

| A place is considered to be part of the national estate if it has cultural significance because of - | Applicable or not | Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High |
|---|--------------------------|---|
| Its importance in the community or pattern of South Africa's history | Y | L-M |
| Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history | N | - |
| Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage | Y | L-M |
| Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects | Y | M |
| Its importance in exhibiting particular aesthetic | N | - |

| | | |
|---|---|--------------|
| characteristics valued by a community cultural group | | |
| Its importance in demonstrating a high degree of creative or technical achievement at a particular period | N | - |
| Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons | Y | M |
| Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa | N | - |
| Sites of significance relating to the history of slavery in South Africa | N | - |
| Reasoned assessment of significance using appropriate indicators outlined above: | | 3,5 – Medium |

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity
= 3,5 x 3
= 10,5

The filed rating for the site therefore is Local Grade IIIB: The site should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority.

Historical remains on the farm Early Dawn:

Site 23 (site 10 from the 2016 report) – Early Dawn historical residential site

The site consists of various rectangular remains of structures. These were originally built from stone and cement (Figure 65).

GPS: 23° 19'18.3"S; 28° 57'06.9" E

The remains most likely date to the early to mid-20th century. It is not very old or unique. The site will however not be impacted on by any of the two development alternatives and it may therefore be left as it is.



Figure 65: Historical residential remains at site 23 – Early Dawn.

Cultural significance Table: Site 23

| A place is considered to be part of the national estate if it has cultural significance because of - | Applicable or not | Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High |
|---|--------------------------|---|
| Its importance in the community or pattern of South Africa's history | Y | L-M |
| Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history | N | - |
| Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage | Y | L-M |
| Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects | Y | M |

| | | |
|---|---|--------------|
| Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group | N | - |
| Its importance in demonstrating a high degree of creative or technical achievement at a particular period | N | - |
| Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons | Y | M |
| Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa | N | - |
| Sites of significance relating to the history of slavery in South Africa | N | - |
| Reasoned assessment of significance using appropriate indicators outlined above: | | 3,5 – Medium |

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 3,5 \times 3$$

$$= 10,5$$

The filed rating for the site therefore is Local Grade IIIB: The site should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority.

9. CONCLUSION AND RECOMMENDATIONS

The survey of the Study Area was completed successfully. Regarding impact on the sites the following should be indicated:

- No impact is foreseen at Harriet's Wish. No sites were identified, but it needs to be indicated that only a desktop study was done here. No new infrastructure is however proposed here.
- No impact is foreseen at Disseldorp. No sites were identified. It needs to be mentioned that only a small section of the (eastern side) was surveyed since the mining infrastructure is limited to this area.
- No impact is foreseen at Old Langsine. The two sites on this farm are no. 12 and 13 (graves), both identified during the 2018 survey.
- No impact is foreseen at Goedetrouw. There are two sites on this farm, namely no. 25 and 26 (graves).
- No impact is foreseen at Norma. There is one known site, namely no. 27 (graves). However, should it be decided that the Tailings Storage Facility be moved here, a site assessment will be needed as this farm was only investigated via a desktop study. It is therefore possible that more sites may become known.
- For development Alternative 1, no impact is foreseen at Early Dawn. The sites on this farm are sites no. 14-22 (graves), site 23 (historical residential remains) and site no. 24 (Iron Age pottery). However for Alternative 2 direct impact is foreseen for site 16 (graves).
- Impact is mainly foreseen on the farm Ketting, but not on all the sites.
 - For development Alternative 1, no direct impact is expected at the following sites - no. 4 (graves) and 10 (historical remains). Definite indirect impact is expected on the following sites – 1-2, 6-9 and 11 (graves), as well as no. 3 (Iron Age) and no. 5 (historical remains).
 - For development Alternative 2, no direct impact is expected at the following sites: no. 4 (graves) and 10 (historical remains). Definite indirect impact is expected on the following sites – 1-2, 6-8 and 11 (graves), as well as no. 3 (Iron Age) and no. 5 (historical remains). Definite direct impact is foreseen at sites 9 (graves).

The following is recommended:

- The project may continue, but only after receiving the necessary comments from SAHRA as well as the implementation of the mitigation measures indicated below.
- It is specifically recommended that development Alternative 1 be chosen, since its impact on heritage sites is less direct and easier to mitigate.

- Although twenty-seven sites of heritage significance were found in the Study Area, it is foreseen that many more may be located there, especially graves. In fact, residents of the area whom were spoken to during the survey (not a formal social consultation process) indicated that single graves are located throughout the bush. These however mostly seem to be outside of the area of direct impact, but it should at least be noted.
- Buffer zones around any of these sites can only be determined during a Phase II study as it needs to deal with each of these sites individually. Such a study would inter alia be looking at the specific impact on such a site, which will then be used to determine specific buffers as these will vary in accordance with the type of work to be done nearby. However, a buffer of at least 20 m should be implemented as a rule.
- It should always be noted that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.
- All the graves are regarded as being of a high cultural significance. There are two possibilities of handling these. It should be handled as follows:
 - Option 1 would be to fence the graves in and have a management plan drafted for the sustainable preservation thereof (“Option 1”). This should be written by a heritage expert. Option 1 is implemented when indirect or secondary impact is foreseen.
 - Option 2 is implemented when a direct impact is foreseen. Should any danger be posed to the graves, Option 2 will have to be taken. This option is to exhume the mortal remains and then to have it relocated (“Option 2”). For this a detailed motivation will have to be written and applied for to SAHRA. If approved, the specific procedure should be followed which includes social consultation. For graves younger than 60 years, only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA. This procedure is quite lengthy and involves social consultation.

Should Alternative 1 be chosen:

- For the graves on the farms Old Langsine (sites 12 and 13), Early Dawn (sites 14-22), Goedetrouw (sites 25-26) and Norma (site 27) no action is needed. The graves are mostly fenced in and well looked after. The mine should however ensure that this situation remains unchanged. Therefore Option 1 should be implemented which would provide at least a monitoring plan for as long as the mine is operational in the area. Such a plan should be drafted by a heritage expert.

- Option 1 should also be implemented for the following grave sites on the farm Ketting – 1, 2, 4, 6, 8, 9 and 11. These will be impacted on indirectly. This means that dust from mining activities or other impacts (e.g. blasting) may impact on the sites and therefore a management plan is required. The plan should be drafted by a heritage expert.
- All the historical residential remains (Early Dawn site 23; Ketting sites 4*, 5, 10 and 11*) are regarded as having low significance. This report is seen as ample mitigation and it may be demolished. However only secondary impact is expected, and it may therefore just be left as it is.

*Note that sites 4 and 11 are repeated as it contains both graves and historical remains.

- Site no. 7 on Ketting (historical stone walling) is regarded as having medium cultural significance. It should be documented after which it may be demolished. However, since only secondary impact is expected, it may be left as it is.
- The two Iron Age Sites (Site 24 on Early Dawn and site 3 on Ketting) have been sufficiently recorded. It may be demolished, but only secondary impact is foreseen, and it may therefore also just be left as it is.
- The impact of the Project on any new historical and grave sites identified during the course of the mines activities, should be assessed by a heritage specialist to determine impact and propose the needed mitigatory measures.
- Should the TSF be moved to Norma, the area will need to be physically surveyed, since it was only dealt with as a desktop study for this report.

Should Alternative 2 be chosen:

- For the graves on the farms Old Langsine (sites 12 and 13), Early Dawn (sites 14-15, 17-22), Goedetrouw (sites 25-26) and Norma (site 27) no action is needed. The graves are mostly fenced in and well looked after. The mine should however ensure that this situation remains unchanged. Therefore Option 1 should be implemented which would provide at least a monitoring plan for as long as the mine is operational in the area. Such a plan should be drafted by a heritage expert.
- Option 1 should also be implemented for the following grave sites on the farm Ketting – 1, 2, 4, 6, 8 and 11. These will be impacted on indirectly. This means that dust from mining activities or other impacts (e.g. blasting) may impact on the sites and therefore a management plan is required. The plan should be drafted by a heritage expert.
- Option 2 should be implemented for grave sites 9 and 16 on Ketting and Early Dawn respectively.

- All the historical residential remains (Early Dawn site 23; Ketting sites 4*, 5, 10 and 11*) are regarded as having low significance. This report is seen as ample mitigation and it may be demolished. However only secondary impact is expected, and it may therefore just be left as it is.

*Note that sites 4 and 11 are repeated as it contains both graves and historical remains.

- Site no. 7 on Ketting (historical stone walling) is regarded as having medium cultural significance. It should be documented after which it may be demolished. However, since only secondary impact is expected, it may be left as it is.
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- The impact of the Project on any new historical and grave sites identified during the course of the mines activities, should be assessed by a heritage specialist to determine impact and propose the needed mitigatory measures.
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APPENDIX A

DEFINITION OF TERMS:

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

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

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B

DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

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

APPENDIX C

SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Negligible – The site has no heritage significance, although it may be older than 60 years.
- Low - A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings. A site with minimal importance which is decreased by its bad state of decay.
- Low-Medium - A site of lesser importance, which is increased by a good state of preservation and contextual importance (e.g. a specific community).
- Medium - Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also, any important object found out of context.
- Medium-High - A site that has high importance due to its age or uniqueness, but which decreases due to its bad state of decay.
- High - Any site, structure or feature regarded as important because of its age or uniqueness. Also, any important object found within a specific context.
- Very High - A site of exceptional importance due to its age, uniqueness and good state of preservation.

Heritage significance:

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

Field ratings:

National Grade I significance: The site should be managed as part of the national estate, should be nominated as Grad I site, should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score above 50.

Provincial Grade II significance: The site should be managed as part of the provincial estate, should be nominated as Grade II site, should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score between 41 and 50.

Local Grade IIIA: The site should be included in the heritage register and not be mitigated (high significance), should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score between 31 and 40.

Local Grade IIIB: The site should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority. Score between 6 and 30.

Local Grade IIIC: The description in the phase 1 heritage report is seen as sufficient recording (low significance) and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorisation. Score below 5.

APPENDIX D

PROTECTION OF HERITAGE RESOURCES:

Formal protection:

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

Protected areas - an area surrounding a heritage site

Provisional protection – for a maximum period of two years

Heritage registers – listing grades II and III

Heritage areas – areas with more than one heritage site included

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

General protection:

Objects protected by the laws of foreign states

Structures – older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

APPENDIX E

HERITAGE IMPACT ASSESSMENT PHASES

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