Heritage Impact Assessment for the Proposed Establishment of Goudrand Ext. 12, Goudrand Ext. 13, Goudrand Ext. 14 and Goudrand Ext. 15 located within the Roodepoort Magisterial District, City of Johannesburg Metropolitan Municipality, Gauteng Province

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DECLARATION OF INDEPENDENCE

The report has been compiled by PGS Heritage, an appointed Heritage Specialist for Singisa. The views stipulated in this report are purely objective and no other interests are displayed in the findings and recommendations of this Heritage Impact Assessment.

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Report Title	Heritage Impact Assessment for the proposed establishment of Goudrand Ext, 12, Goudrand Ext. 13, Goudrand Ext. 14 and Goudrand Ext. 15 situated within the Roodepoort Magisterial District, City of Johannesburg Metropolitan Municipality, Gauteng Province.		
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EXPLANATION OF ABBREVIATIONS USED IN THIS DOCUMENT

Abbreviations	*Description*
AIA	Archaeological Impact Assessment
ASAPA	Association of Southern African Professional Archaeologists
CMP	Conservation Management Plan
CRM	Cultural Resource Management
EIA	Environmental Impact Assessment
EMPR	Environmental Management Programme Report
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
LIA	Late Iron Age
LSA	Later Stone Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act
PGS	PGS Heritage
PHRA	Provincial Heritage Resources Authority
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System

EXECUTIVE SUMMARY

PGS Heritage was appointed by Singisa to undertake a Heritage Impact Assessment (HIA) which forms part of the Environmental Impact Assessment (EIA) for the proposed establishment Goudrand Ext. 12, Goudrand Ext. 13, Goudrand Ext. 14 and Goudrand Ext. 15 situated within the Roodepoort Magisterial District, City of Johannesburg Metropolitan Municipality, Gauteng Province.

An archival and historical desktop study was undertaken which was used to compile a historical layering of the study area within its regional context. This component indicated that the landscape within which the project area is situated is associated with historic gold mining activities from the 1880s onward. The desktop study also revealed the presence of a compound within the study area. This compound was associated with the Durban Roodepoort Deep's No. 5 Shaft and was likely built at the same time that this shaft was established. The No. 5 shaft was completed in 1936 which provides a likely age for the compound. This compound was demolished between 1995 and 2004.

The desktop study work was followed by fieldwork which comprised a walkthrough of the study area. One site was identified which comprised low heaps of building rubble associated with exotic planted vegetation such as palms and jacaranda trees. At the time of the fieldwork the presence of a compound within the study area had not yet been revealed. The poor preservation of the compound is such that it was impossible to identify the site as the remains of a former compound. Due to the low level of preservation of the site it was deemed to be of Low Significance.

An impact risk calculation for the impact of the proposed development on the site was undertaken which revealed that the development will have a Low Impact Risk on the identified site. As a result no mitigation measures would be required.

The development is not expected to have any impact on heritage sites. From a heritage point of view the proposed development may be allowed to continue.

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1 INTRODUCTION

PGS Heritage was appointed by Singisa to undertake a Heritage Impact Assessment (HIA) which forms part of the Environmental Impact Assessment (EIA) for the proposed establishment Goudrand Ext. 12, Goudrand Ext. 13, Goudrand Ext. 14 and Goudrand Ext. 15 situated within the Roodepoort Magisterial District, City of Johannesburg Metropolitan Municipality, Gauteng Province.

1.1 Scope of the Study

The aim of the study is to identify possible heritage sites and finds that may occur in the proposed development area. The Heritage Impact Assessment (HIA) aims to inform the Environmental Impact Assessment (EIA) in the development of a comprehensive Environmental Management Plan (EMP) to assist the developer in managing the identified heritage resources in a responsible manner in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999) (NHRA).

1.2 Specialist Qualifications

This Heritage Impact Assessment was compiled by PGS Heritage, the staff of which has a combined experience of nearly 40 years in the heritage consulting industry and have extensive experience in managing Heritage Impact Assessment (HIA) processes. Mr. Polke Birkholtz, project manager and heritage specialist, is registered with the Association of Southern African Professional Archaeologists (ASAPA) as a professional archaeologist and is also a registered member of the Cultural Resource Management (CRM) Section of ASAPA. He has more than 15 years experience in the industry. The fieldwork was managed by Mr. Marko Hutten who also has 15 years of experience in the industry and is registered with ASAPA as a Professional Archaeologist and is accredited as a Field Director.

1.3 Assumptions and Limitations

- Not detracting in any way from the comprehensiveness of the fieldwork undertaken, it is necessary to realise that the heritage sites located during the fieldwork do not necessarily represent all the heritage sites present within the area. Should any heritage features or objects not included in the inventory be located or observed, a heritage specialist must immediately be contacted. Such observed or located heritage features

and/or objects may not be disturbed or removed in any way, until such time that the heritage specialist has been able to make an assessment as to the significance of the site (or material) in question. This applies to graves and cemeteries as well.

1.4 Legislative Context

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation:

i. National Environmental Management Act (NEMA) Act 107 of 1998
ii. National Heritage Resources Act (NHRA) Act 25 of 1999
iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
iv. Development Facilitation Act (DFA) Act 67 of 1995

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

i. National Environmental Management Act (NEMA) Act 107 of 1998
    a. Basic Environmental Assessment (BEA) – Section (23)(2)(d)
    b. Environmental Scoping Report (ESR) – Section (29)(1)(d)
    c. Environmental Impacts Assessment (EIA) – Section (32)(2)(d)
    d. EMP (EMP) – Section (34)(b)
ii. National Heritage Resources Act (NHRA) Act 25 of 1999
    a. Protection of Heritage Resources – Sections 34 to 36; and
    b. Heritage Resources Management – Section 38
iii. Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
    a. Section 39(3)

The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34(1) of the NHRA states that "no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority…". The NEMA (No 107 of 1998) states that an integrated EMP should (23:2 (b)) "…identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage". In accordance with legislative requirements and EIA rating criteria, the regulations of SAHRA and ASAPA have also been incorporated to ensure that a comprehensive and legally compatible HIA report is compiled.

1.5 Terminology and Abbreviations

Archaeological resources

i. material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
ii. rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including a 10m buffer area;
iii. wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
iv. features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

Development

This means any physical intervention, excavation or action other than those caused by natural forces, which may according to the heritage agency result in a change to the nature, appearance or physical nature of a place or influence its stability & future well-being, including:

i. construction, alteration, demolition, removal or change in use of a place or a structure at a place;
ii. carrying out any works on or over or under a place;
iii. subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
iv. constructing or putting up for display signs or boards;
v. any change to the natural or existing condition or topography of land; and

vi. any removal or destruction of trees, or removal of vegetation or topsoil

Fossil

Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage

That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage resources

This means any place or object of cultural significance

Later Stone Age

The archaeology of the last 20 000 years, associated with fully modern people.

Late Iron Age (Early Farming Communities)

The archaeology of the last 1000 years up to the 1800's associated with ironworking and farming activities such as herding and agriculture.

Middle Stone Age

The archaeology of the Stone Age, dating to between 20 000-300 000 years ago, associated with early modern humans.

Palaeontology

Any fossilised remains or fossil trace of animals or plants which lived in the geological past and any site which contains such fossilised remains or trace.

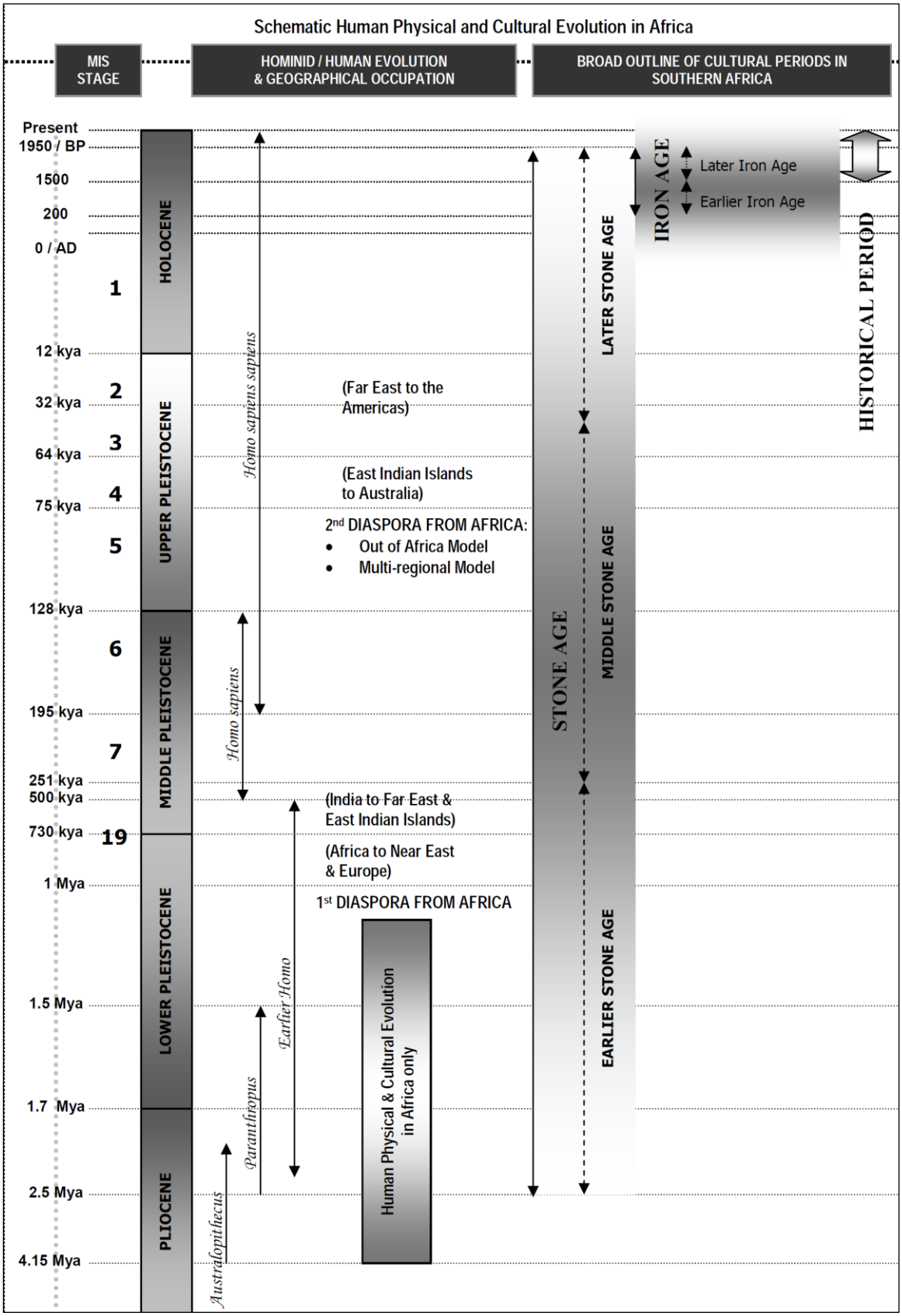


Figure 1–Human and Cultural Time line in Africa (Morris, 2008)

2 TECHNICAL DETAILS OF THE PROJECT

2.1 Site Location and Description

Coordinates	North-West: S 26.182549 E 27.855625 South-West: S 26.185528 E 27.856198	East: S 26.189035 E 27.877610
Property	Portion of the Remainder of Portion 1 of the Farm Roodepoort 237 IQ.	
Location	The study area is located between Bram Fisherville and Roodepoort and is located directly north of the former and roughly 3km south of the Roodepoort Railway Station. It represents the southern component of the old Durban Roodepoort Deep gold mine.	
Extent	The extent of the study area is roughly 59 hectares.	
Land Description	The land is not currently utilised and consists of fairly flat open terrain located within an area which is characterised by mining activities to the north and residential development to the west and south. The study area itself has been disturbed by past mining activities, the construction of roads, dumping of building rubble and the like.	

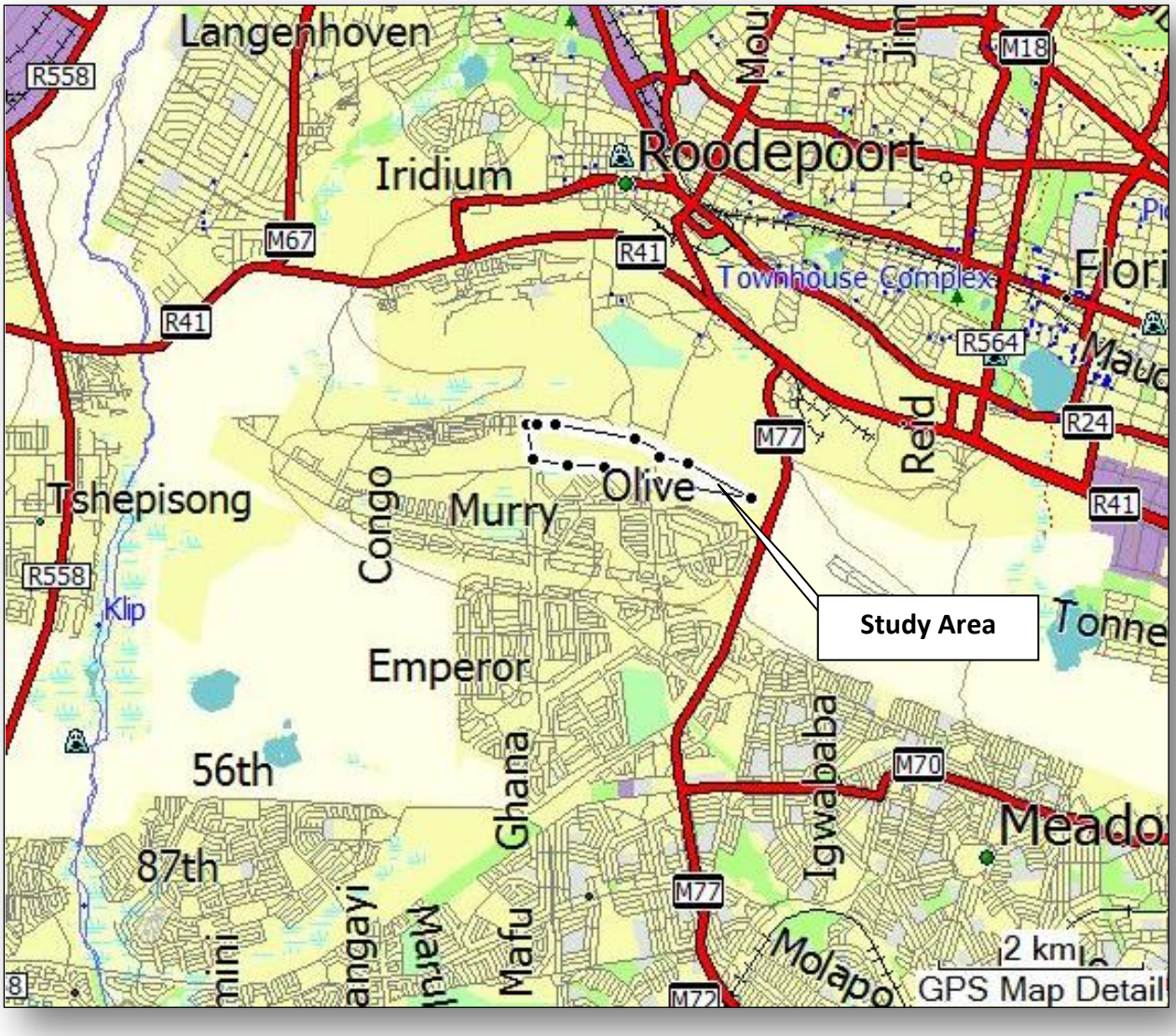


Figure 2–The study area within its regional context.

2.2 Technical Project Description

The proposed activity is the establishment of Goudrand Ext. 12, Goudrand Ext. 13, Goudrand Ext. 14 and Goudrand Ext. 15 located within the City of Johannesburg Metropolitan Municiaplity, Gauteng Province.

As can be seen on the development layout plan, each of these extensions includes a number of different components. These four extensions as well as their components will be individually discussed below:

- Extension 12 comprises residential units, streets, a church (on a 0.25 hectare stand) and three public open spaces. The residential units will be zoned as Residential 1.

- Extension 13 comprises residential units, two churches (both of which would be located on 0.25 hectare stands), one crèche (on a 0.25 hectare stand), one business stand (on a 0.25 hectare stand as well), as well as a number of streets. The residential units will be zoned as Residential 1.

- Extension 14 comprises residential units, one crèche (on a 0.25 hectare stand), one business stand (on a 0.25 hectare stand), eight public open spaces and a number of streets. A two hectare component of this extension is also to be zoned for Residential 2 (double storey). The remainder of the residential units will be zoned as Residential 1.

- Extension 15 is located on the eastern end of Cemetery Road and will only be developed once rehabilitation has taken place here. After rehabilitation this extension will entail a 13.8 hectare area zoned for special development in the form of double storey units.

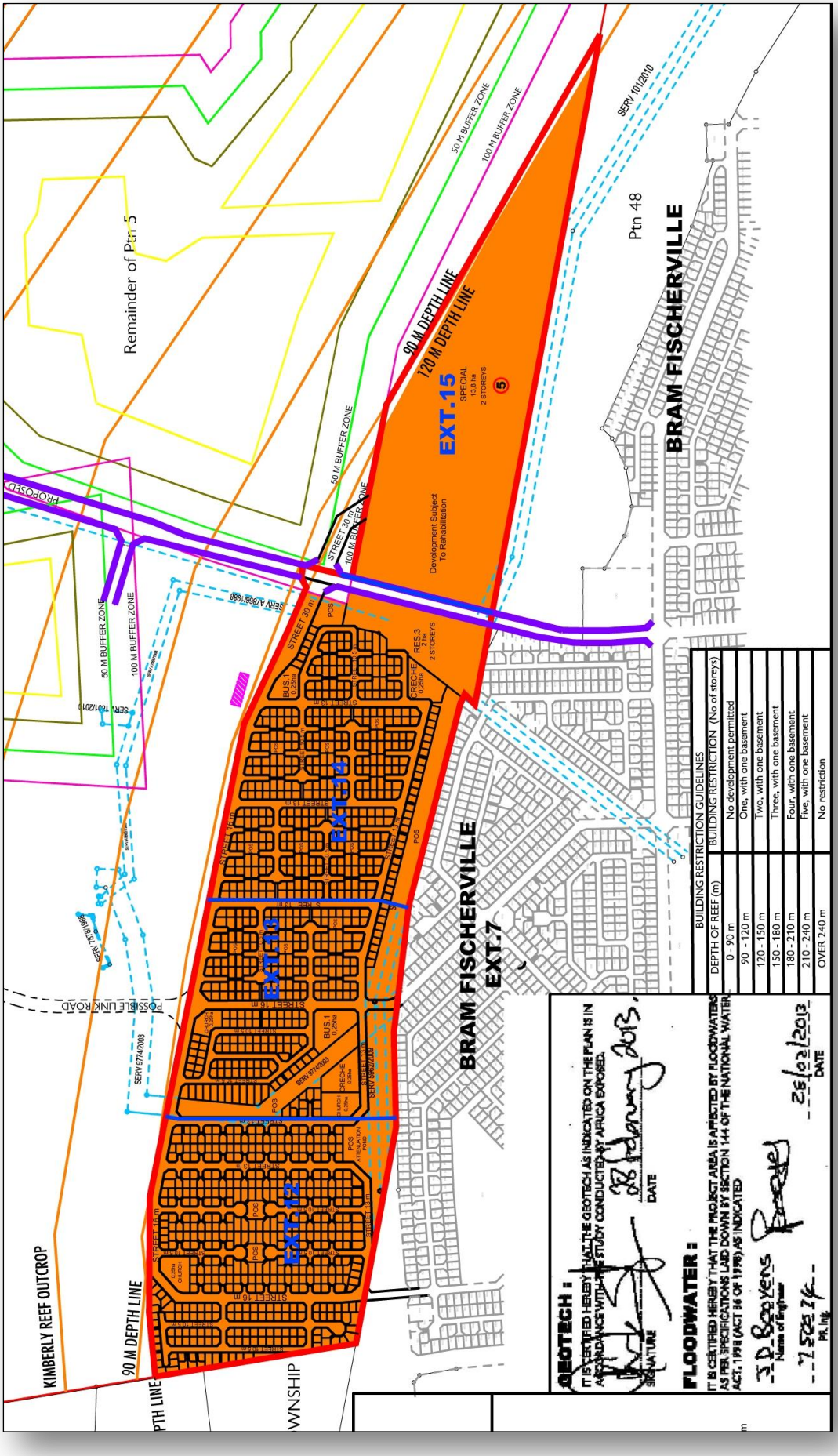


Figure 3 – Development layout plan for Goudrand Ext. 12, Goudrand, Ext. 13, Goudrand Ext. 14 and Goudrand Ext. 15.

3 ASSESSMENT METHODOLOGY

3.1 Methodology for Assessing Heritage Site Significance

This report was compiled by PGS Heritage for the proposed establishment of Goudrand Ext. 12, Goudrand Ext. 13, Goudrand Ext. 14 and Goudrand Ext. 15. The applicable maps, tables and figures are included as stipulated in the NHRA (no 25 of 1999) and the National Environmental Management Act (NEMA) (no 107 of 1998). The HIA process consisted of three steps:

Step I – Literature Review: The background information to the field survey leans greatly on the archival and historical cartographic material assessed as part of the study as well as a study of the available literature.

Step II – Physical Survey: A physical survey was conducted on Thursday, 28 November 2014. The survey was undertaken by a team comprising a professional archaeologist (Marko Hutten) and two field assistants (Thomas Mulaudzi and Edward Khorommbi) and was undertaken on foot.

Step III – Report: The final step involved the recording and documentation of relevant heritage resources, the assessment of resources regarding the heritage impact assessment criteria as well as mapping and recommendations.

The significance of heritage sites was based on five main criteria:

- site integrity (i.e. primary vs. secondary context),
- amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter)
    - Low - <10/50m2
    - Medium - 10-50/50m2
    - High - >50/50m2
- uniqueness and
- potential to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows:

A - No further action necessary;

B - Mapping of the site and controlled sampling required;

C - No-go or relocate development position

D - Preserve site, or extensive data collection and mapping of the site; and

E - Preserve site

Site Significance

Site significance classification standards prescribed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used for the purpose of this report (see **Table 1**).

Table 1: Site significance classification standards as prescribed by SAHRA

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	Grade 4A	High/Medium	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium	Recording before destruction
Generally Protected C (GP.C)	Grade 4D	Low	Destruction

3.2 Methodology for Impact Assessment

In order to ensure uniformity, a standard impact assessment methodology has been utilised so that a wide range of impacts can be compared. The impact assessment methodology makes provision for the assessment of impacts against the following criteria:

- Significance;
- Spatial scale;
- Temporal scale;
- Probability; and
- Degree of certainty.

A combined quantitative and qualitative methodology was used to describe impacts for each of the aforementioned assessment criteria. A summary of each of the qualitative descriptors, along with the equivalent quantitative rating scale for each of the aforementioned criteria, is given in **Table 2**.

Table 2: Quantitative rating and equivalent descriptors for the impact assessment criteria

RATING	SIGNIFICANCE	EXTENT SCALE	TEMPORAL SCALE
1	VERY LOW	*Isolated corridor / proposed corridor*	Incidental
2	LOW	*Study area*	Short-term
3	MODERATE	*Local*	Medium-term
4	HIGH	*Regional / Provincial*	Long-term
5	VERY HIGH	*Global / National*	Permanent

A more detailed description of each of the assessment criteria is given in the following sections.

Significance Assessment

The significance rating (importance) of the associated impacts embraces the notion of extent and magnitude, but does not always clearly define these, since their importance in the rating scale is very relative. For example, 10 structures younger than 60 years might be affected by a proposed development, and if destroyed the impact can be considered as VERY LOW in that the structures are all of Low Heritage Significance. If two of the structures are older than 60 years and of historic significance, and as a result of High Heritage Significance, the impact will be considered to be HIGH to VERY HIGH.

A more detailed description of the impact significance rating scale is given in **Table** 3 below.

Table 3: Description of the significance rating scale

RATING		DESCRIPTION
5	VERY HIGH	Of the highest order possible within the bounds of impacts which could occur. In the case of adverse impacts: there is no possible mitigation and/or remedial activity which could offset the impact. In the case of beneficial impacts, there is no real alternative to achieving this benefit.
4	HIGH	Impact is of substantial order within the bounds of impacts which could occur. In the case of adverse impacts: mitigation and/or remedial activity is feasible but difficult, expensive, time-consuming or some combination of these. In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.
3	MODERATE	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur. In the case of adverse impacts: mitigation and/or remedial activity are both feasible and fairly easily possible. In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.
2	LOW	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts: mitigation and/or remedial activity is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.
1	VERY LOW	Impact is negligible within the bounds of impacts which could occur. In the case of adverse impacts, almost no mitigation and/or remedial activity is needed, and any minor steps which might be needed are easy, cheap, and simple. In the case of beneficial impacts, alternative means are almost all likely to be better, in one or a number of ways, than this means of achieving the benefit. Three additional categories must also be used where relevant. They are in addition to the category represented on the scale, and if used, will replace the scale.
0	NO IMPACT	There is no impact at all - not even a very low impact on a party or system.

Spatial Scale

The spatial scale refers to the extent of the impact i.e. will the impact be felt at the local, regional, or global scale. The spatial assessment scale is described in more detail in **Table 4**.

Table 4: Description of the spatial significance rating scale

RATING		DESCRIPTION
5	Global/National	The maximum extent of any impact.
4	Regional/Provincial	The spatial scale is moderate within the bounds of possible impacts, and will be felt at a regional scale (District Municipality to Provincial Level). The impact will affect an area up to 50 km from the proposed site / corridor.
3	Local	The impact will affect an area up to 5 km from the proposed site.
2	Study Area	The impact will affect an area not exceeding the boundary of the study area.
1	Isolated Sites / proposed site	The impact will affect an area no bigger than the site.

Temporal/Duration Scale

In order to accurately describe the impact, it is necessary to understand the duration and persistence of an impact in the environment.

The temporal or duration scale is rated according to criteria set out in **Table 5**.

Table 5: Description of the temporal rating scale

RATING		DESCRIPTION
1	Incidental	The impact will be limited to isolated incidences that are expected to occur very sporadically.
2	Short-term	The environmental impact identified will operate for the duration of the construction phase or a period of less than 5 years, whichever is the greater.
3	Medium-term	The environmental impact identified will operate for the duration of life of the project.
4	Long-term	The environmental impact identified will operate beyond the life of operation of the project.
5	Permanent	The environmental impact will be permanent.

Degree of Probability

The probability or likelihood of an impact occurring will be outlined in **Table 6** below.

Table 6: Description of the degree of probability of an impact occurring

RATING	DESCRIPTION
1	Practically impossible
2	Unlikely
3	Could happen
4	Very likely
5	It's going to happen / has occurred

Degree of Certainty

As with all studies, it is not possible to be 100% certain of all facts, and for this reason a standard "degree of certainty" scale is used, as discussed in **Table 7**. The level of detail for specialist studies is determined according to the degree of certainty required for decision-making.

Table 7: Description of the degree of certainty rating scale

RATING	DESCRIPTION
Definite	More than 90% sure of a particular fact.
Probable	Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.
Possible	Between 40 and 70% sure of a particular fact, or of the likelihood of an impact occurring.
Unsure	Less than 40% sure of a particular fact or the likelihood of an impact occurring.
Can't know	The consultant believes an assessment is not possible even with additional research.

Quantitative Description of Impacts

To allow for impacts to be described in a quantitative manner, in addition to the qualitative description given above, a rating scale of between 1 and 5 was used for each of the assessment criteria. Thus the total value of the impact is described as the function of significance, spatial and temporal scale, as described below:

$$\textbf{\textit{Impact Risk}} = \frac{(\text{SIGNIFICANCE} + \textit{Spatial} + \text{Temporal})}{3} \times \frac{\text{Probability}}{5}$$

An example of how this rating scale is applied is shown below:

Table 8: Example of Rating Scale

IMPACT	SIGNIFICANCE	SPATIAL SCALE	TEMPORAL SCALE	PROBABILITY	RATING
	Low	Local	Medium Term	Could Happen	**Low**
Impact on heritage structures	2	3	3	3	**1.6**

Note: The significance, spatial and temporal scales are added to give a total of 8, which is divided by 3 to give a criterion rating of 2.67. The probability (3) is divided by 5 to give a probability rating of 0.6. The criteria rating of 2.67 is then multiplied by the probability rating (0,6) to give the final rating of 1,6.

The impact risk is classified according to five classes as described in the table below.

Table 9: Impact Risk Classes

RATING	IMPACT CLASS	DESCRIPTION
0.1 – 1.0	1	Very Low
1.1 – 2.0	2	Low
2.1 – 3.0	3	Moderate
3.1 – 4.0	4	High
4.1 – 5.0	5	Very High

Therefore, with reference to the example used for heritage structures above, an impact rating of 1.6 will fall in the Impact Class 2, which will be considered to be a low impact.

4 CURRENT STATUS QUO

4.1 Description of Study Area

The proposed development comprises the establishment of Goudrand Ext. 12, Goudrand Ext. 13, Goudrand Ext. 14 and Goudrand Ext. 15 on a Portion of the Remainder of Portion 1 of the farm Roodepoort 237 IQ, City of Johannesburg Metropolitan Municipality, Gauteng Province.

The study area is topographically flat and comprises open grassy areas. The direct surroundings of the study area are characterised by mining activities (to the north) and residential development (to the west and south). The study area itself can certainly not be described as undisturbed and contains roads, evidence of former mining activities, dumping of building rubble and so forth.

Figure 4 - Section of the study area showing building rubble and mine dumps.

Figure 5 – Another view of the same area showing the remains of mine dumps as well as building rubble.

Figure 6 – Disturbance found within the study area comprising roads and power lines.

Figure 7 – More evidence for the disturbed nature of the study area with power lines and roads depicted.

Figure 8 – As depicted here not all sections of the study area are characterised by severe disturbance.

Figure 9 – The remains of planted vegetation in the form of exotic tree species which had been cut down.

5 DESKTOP STUDY FINDINGS

5.1 Overview of the Prehistory of the Study Area and Surrounding Landscape

DATE	DESCRIPTION
2.5 million to 250 000 years ago	The Earlier Stone Age is the first and oldest phase identified in South Africa's archaeological history and comprises two technological phases. The earliest of these is known as Oldowan and is associated with crude flakes and hammer stones. It dates to approximately 2 million years ago. The second technological phase is the Acheulian and comprises more refined and better made stone artefacts such as the cleaver and bifacial hand axe. The Acheulian dates back to approximately 1.5 million years ago. A number of Early Stone Age sites are known from the general vicinity. One of these is situated roughly 655m south-west of the study area (Birkholtz, 2001).
250 000 to 40 000 years ago	The Middle Stone Age (MSA) is the second oldest phase identified in South Africa's archaeological history. This phase is associated with flakes, points and blades manufactured by means of the so-called 'prepared core' technique.
40 000 years ago to the historic past	The Later Stone Age is the third archaeological phase identified and is associated with an abundance of very small artefacts known as microliths.
AD 450 – AD 750	The Mzonjani facies of the Kwale Branch of the Urewe Ceramic Tradition represents the earliest known Iron Age period within the surroundings of the study area. The decoration on the ceramics from this facies is characterised by punctates on the rim as well as spaced motifs on the shoulder (Huffman, 2007). No sites associated with Mzonjani pottery are known from the direct vicinity of the present study area.
AD 1450 – AD 1650	The Ntsuanatsatsi facies of the Blackburn Branch of the Urewe Ceramic Tradition represents the second known Iron Age period within the surroundings of the study area. The decoration on the ceramics from this facies is characterised by a broad band of stamping in the neck, stamped arcades on the shoulder and appliqué (Huffman, 2007). Huffman (2007) suggest that the Ntsuanatsatsi facies can be directly linked to the early Bafokeng who regarding this theory were the first Mbo Nguni people to leave present-day KwaZulu-Natal. No sites associated with Ntsuanatsatsi pottery are known from the direct vicinity of the present study area.
AD 1500 - AD 1700	The Olifantspoort facies of the Moloko Branch of the Urewe Ceramic Tradition is the third Iron Age facies to be identified within the surroundings of the study area. The Olifantspoort facies can likely be dated to between AD 1500 and AD 1700. The key features of the decoration used on the ceramics from this facies include multiple bands of fine stamping or narrow incision

	separated by colour (Huffman, 2007). The type site for this facies is located on the farm Olfantspoort 328 JQ, which is situated near Rustenburg in the North West Province. The Olifantspoort facies holds an important position in the sequence of the Moloko or Sotho-Tswana group. The earliest facies to be associated with the Moloko is the Icon facies (AD 1300 – 1500), with sites found across large sections of what is today the Limpopo Province. The Icon facies resulted in three different and parallel Iron Age facies, namely the Madikwe facies (AD 1500 – 1700) (which in turn led to the Buispoort facies between AD 1700 and 1850), the Letsibogo facies (AD 1500 – 1700) and thirdly the Olifantspoort facies. The Olfantspoort facies developed into the Thabeng facies (AD 1700 – 1850) (Huffman, 2007). It is therefore evident that the Olifantspoort facies represents a key pillar in our understanding of the origins and sequence of the Sotho-Tswana people of today (Huffman, 2007). No sites associated with Olifantspoort pottery are known from the direct vicinity of the present study area.
AD 1650 – AD 1850	The Uitkomst facies of the Blackburn Branch of the Urewe Ceramic Tradition represents the third Iron Age period to be identified for the surroundings of the study area. This facies can likely be dated to between AD 1650 and AD 1820. The decoration on the ceramics associated with this facies is characterised by stamped arcades, appliqué of parallel incisions, stamping and cord impressions and is described as a mixture of the characteristics of both Ntsuanatsatsi (Nguni) and Olifantspoort (Sotho) (Huffman, 2007). The type-site is Uitkomst Cave, which is situated approximately 30.4km north-west of the study area. The site was excavated by Professor R.J. Mason of the University of the Witwatersrand as part of a project to excavate five cave sites in the Witwatersrand-Magaliesberg area. These five sites are Glenferness, Hennops River, Pietkloof, Zwartkops and Uitkomst. Uitkomst was chosen as the type site for the particular Iron Age material excavated at these sites as the Uitkomst deposit was found to be well stratified and the site "...*illustrates the combination of a certain kind of pottery with evidence for metal and food production and stone wall building found at the open sites*..." (Mason, 1962:385). The Uitkomst pottery is viewed as a combination of Ntsuanatsatsi and Olifantspoort, and with the Makgwareng facies is seen as the successors to the Ntsuanatsatsi facies. The Ntsuanatsatsi facies is closely related to the oral histories of the Early Fokeng people and represents the earliest known movement of Nguni people out of Kwazulu-Natal into the inland areas of South Africa. Regarding this theory, the Bafokeng settled at Ntsuanatsatsi Hill in the present-day Free State Province. Subsequently, the BaKwena lineage had broken away from the Bahurutshe cluster and crossed southward over the Vaal River to come in contact with the Bafokeng. As a result of this contact a Bafokeng-Bakwena cluster was formed, which moved northward and became further 'Sotho-ised' by coming into increasing contact with other Sotho-Tswana groups. According to this theory, this eventually resulted in the appearance of Uitkomst facies type pottery which contained elements of both Nguni and Sotho-Tswana speakers (Huffman, 2007). Huffman states that that the Uitkomst facies is directly associated with the Bafokeng (Huffman, 2007). However, it worth noting that not all

	researchers agree with this preposition of the Bafokeng origins. In their book on the history of the Bafokeng, Bernard Mbenga and Andrew Mason indicate that the research of Prof. R.J. Mason and Dr. J.C.C. Pistorius "...*would indicate that the Bafokeng originated from the Bahurutshe-Bakwena-Bakgatla lineage cluster. Tom Huffman holds a different view...*" (Mbenga & Mason, 2010). No sites associated with Uitkomst pottery are known from the direct vicinity of the present study area.
AD 1700 – AD 1840	The Buispoort facies of the Moloko branch of the Urewe Ceramic Tradition is the next phase to be identified within the study area's surroundings. It is most likely dated to between AD 1700 and AD 1840. The key features on the decorated ceramics include rim notching, broadly incised chevrons and white bands, all with red ochre (Huffman, 2007).It is believed that the Madikwe facies developed into the Buispoort facies. The Buispoort facies is associated with sites such as Boschhoek, Buffelshoek, Kaditshwene, Molokwane and Olifantspoort (Huffman, 2007). No sites associated with Buispoort pottery are known from the direct vicinity of the present study area.

5.2 Brief Markers from the History of the Study Area and Surrounding Landscape

DATE	DESCRIPTION
11 October 1886	After the discovery of gold on the farm Roodepoort and surrounding farms during 1886, these properties were declared public prospecting areas (Roux, 1955).
February 1887	With the expansion of gold prospecting activities in the vicinity of the farm Roodepoort, the need for a town quickly developed. By February 1887 the first residential stands of what would become Roodepoort were sold (Erasmus, 2004).
1904	Roodepoort-Maraisburg was given municipal status (Erasmus, 2004).
1934	In this year the Durban Roodepoort Deep acquired the properties of the New Steyn Estate Gold Mines Limited (Jeppe, 1946). A large section of the present study area fell within this property at the time.
1936	The No. 5 Shaft of Durban Roodepoort Deep was completed in this year (Durban Roodepoort Deep, 2001). This shaft and associated mining buildings were located north of the present study area. However, its compound fell within the present study area.
26 November 1948	On the evening of this day a cyclone struck Roodepoort and resulted in extensive damage to buildings and houses with a number of people also killed as a result of the metrological attack. The Durban Roodepoort Deep area was also badly hit and at least one person was killed here (Rand Daily Mail, 27 November 1948).

5.3 History of Gold Mining within the Study Area and Surrounding Landscape

5.3.1 Early History of the farm Roodepoort and Gold Mining

On 1 May 1884 Fred Struben and Godfrey Lys discovered a gold-bearing reef on the farm Wilgespruit, and named it Confidence Reef. Their discovery was located approximately three miles north of present-day Roodepoort.

The farm Roodepoort located on the southern ridge of the Witwatersrand originally belonged to the brothers J.H. and A.S. du Plessis. On 14 November 1885 the brothers signed a contract in Potchefstroom with a group of prospectors namely C.M. Douthwaite, J.G. Bantjies, George Jacobson, Adolf Kauffmann, H.G.C. van der Hoven and S. Hammerschlag. These men were all at one time or another in business with each other. The contract stipulated that the prospectors would be given the right to prospect on the farm Roodepoort in return for a percentage of the profits gained from the discovery and mining of any minerals found there.

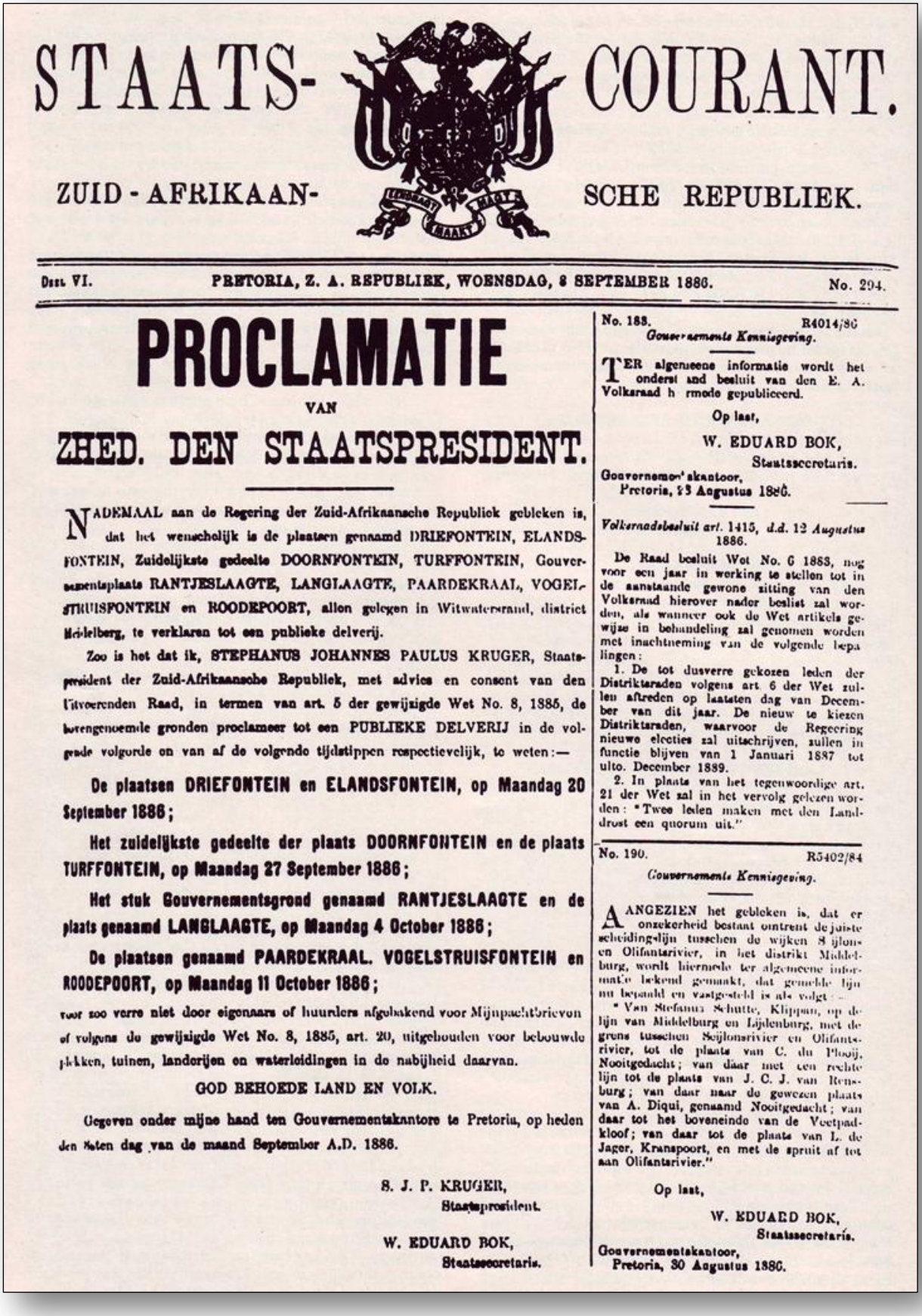
It is evident that prospecting activities commenced almost immediately as only four months after the signing of the contract J.G. Bantjies discovered the so-called Bird Reef during March 1886 on the farm Roodepoort. During the same time the Main Reef was discovered accidentally by George Harrison and George Walker on the farm Langlaagte. Fred Struben subsequently discovered the same reef on the western boundary of the farm Vogelstruisfontein, and before long it was located on a number of the neighbouring farms, including Roodepoort.

In April of 1886 President Kruger received three petitions signed by 121 persons requesting that the farms Vogelstruisfontein, Roodepoort, Langlaagte and the two portions comprising Paardekraal be declared public diggings. The amended gold laws of 4 August 1886 meant that the government was now rightly allowed to proclaim privately owned land as public diggings with or without the owner's approval. On 5 August 1886 a meeting was held for all interested and affected parties in Turffontein. Present at the meeting was C.M Douthwaite and A Kauffmann, owners and renters of the farm Roodepoort as well as J. van Wijk, another owner of a portion of the farm Roodepoort.

On 12 August 1886 the commission put forth their report with the findings of the meeting. Issues highlighted in the report include water shortages, the expensive prices of machinery needed to mine on the Witwatersrand, the possibility of an increase in crime, the current

contracts as well as rental and ownership rights that needed to be safeguarded in order to keep the peace. Subsequently, it was suggested that current owners and renters should be given first option to purchase the gold bearing land they owned or rented. It was felt that such a measure would lead to an influx of capital and ensure general stability. It was also suggested that the land between Turffontein and Doornfontein be earmarked for the development of a town. On 18 August 1886 a notice in the "*De Staatscourant"* informed all interested parties that the government had located yielding gold reefs on the Witwatersrand in the district of Heidelberg and that Roodepoort was one of these farms. The notice stated that these areas were to be declared as public diggings and that all interested and affected parties would be given one month in which to secure their interest in the land. The farm Roodepoort was to be declared a public prospecting area on the 11 October 1886 as long as the owners or renters did not have the land cordoned off as workable areas, gardens, arable land and water furrows. By the end of 1886 there were approximately 150 persons residing on the farm Roodepoort (Roux, 1955).

Figure 10 – Historic view of Roodepoort c. 1900. The photograph was taken in a southern direction with the town in the foreground and a number of gold mines visible along the horizon in the back (A Photographic Souvenir of the Transvaal, n.d.).



STAATS- COURANT.

ZUID-AFRIKAAN- SCHE REPUBLIEK.

Deel VI. PRETORIA, Z. A. REPUBLIEK, WOENSDAG, 8 SEPTEMBER 1886. No. 294.

PROCLAMATIE

VAN

ZHED. DEN STAATSPRESIDENT.

NADEMAAL aan de Regering der Zuid-Afrikaansche Republiek gebleken is, dat het wenschelijk is de plaatsen genaamd DRIEFONTEIN, ELANDSFONTEIN, Zuidelijkste gedeelte DOORNFONTEIN, TURFFONTEIN, Gouvernementsplaats RANTJESLAAGTE, LANGLAAGTE, PAARDEKRAAL, VOGELSTRUISFONTEIN en ROODEPOORT, allen gelegen in Witwatersrand, district Heidelberg, te verklaren tot een publieke delverij.

Zoo is het dat ik, STEPHANUS JOHANNES PAULUS KRUGER, Staatspresident der Zuid-Afrikaansche Republiek, met advies en consent van den Uitvoerenden Raad, in termen van art. 5 der gewijzigde Wet No. 8, 1885, de bovengenoemde gronden proclameer tot een PUBLIEKE DELVERIJ in de volgende volgorde en van af de volgende tijdstippen respectievelijk, te weten:—

De plaatsen DRIEFONTEIN en ELANDSFONTEIN, op Maandag 20 September 1886;

Het zuidelijkste gedeelte der plaats DOORNFONTEIN en de plaats TURFFONTEIN, op Maandag 27 September 1886;

Het stuk Gouvernementsgrond genaamd RANTJESLAAGTE en de plaats genaamd LANGLAAGTE, op Maandag 4 October 1886;

De plaatsen genaamd PAARDEKRAAL, VOGELSTRUISFONTEIN en ROODEPOORT, op Maandag 11 October 1886;

voor zoo verre niet door eigenaars of huurders afgebakend voor Mijnpachtbrieven of volgens de gewijzigde Wet No. 8, 1885, art. 20, uitgehouden voor bebouwde plekken, tuinen, landerijen en waterleidingen in de nabijheid daarvan.

GOD BEHOEDE LAND EN VOLK.

Gegeven onder mijne hand ten Gouvernementskantore te Pretoria, op heden den 8sten dag van de maand September A.D. 1886.

S. J. P. KRUGER,
Staatspresident.

W. EDUARD BOK,
Staatssecretaris.

No. 188. R4014/86

Gouvernements Kennisgeving.

TER algemeene informatie wordt het onderstaand besluit van den E. A. Volksraad hiermede gepubliceerd.

Op last,

W. EDUARD BOK,
Staatssecretaris.

Gouvernementskantoor,
Pretoria, 25 Augustus 1886.

Volksraadsbesluit art. 1415, *d.d.* 12 *Augustus* 1886.

De Raad besluit Wet No. 6 1883, nog voor een jaar in werking te stellen tot in de aanstaande gewone zitting van den Volksraad hierover nader besliet zal worden, als wanneer ook de Wet artikels gewijze in behandeling zal genomen worden met inachtneming van de volgende bepalingen:

1. De tot dusverre gekozen leden der Distrikteraden volgens art. 6 der Wet zullen aftreden op laatsten dag van December van dit jaar. De nieuw te kiezen Distriktsraden, waarvoor de Regeering nieuwe electies zal uitschrijven, zullen in functie blijven van 1 Januari 1887 tot ulto. December 1889.

2. In plaats van het tegenwoordige art. 21 der Wet zal in het vervolg gelezen worden: "Twee leden maken met den Landdrost een quorum uit."

No. 190. R5402/84

Gouvernements Kennisgeving.

AANGEZIEN het gebleken is, dat er onzekerheid bestaat omtrent de juiste scheidingslijn tusschen de wijken Bijlons- en Olifantsrivier, in het distrikt Middelburg, wordt hiermede ter algemeene informatie bekend gemaakt, dat gemelde lijn nu bepaald en vastgesteld is als volgt:—

"Van Stefanus Schutte, Klippan, op de lijn van Middelburg en Lijdenburg, met de grens tusschen Seijlonsrivier en Olifantsrivier, tot de plaats van C. du Plooij, Nooitgedacht; van daar met een rechte lijn tot de plaats van J. C. J. van Rensburg; van daar naar de gewezen plaats van A. Diqui, genaamd Nooitgedacht; van daar tot het boveneinde van de Voetpadkloof; van daar tot de plaats van L. de Jager, Kranspoort, en met de spruit af tot aan Olifantsrivier."

Op last,

W. EDUARD BOK,
Staatssecretaris.

Gouvernementskantoor,
Pretoria, 30 Augustus 1886.

Figure 11 – A copy of the Staatscourant dated 8 September 1886. The section depicted here contains the proclamation of Roodepoort and other farms as public diggings (Antrobus, 1986).

5.3.2 Historic Overview of Mines from the Study Area as Revealed by Cartographic Data

The best way of identifying the size and location of mining properties is to make use of archival and historic maps.

5.3.2.1 C.S. Goldmann's Earlier Map

The first of the maps that will be discussed in this section was published in C.S. Goldmann's *The Witwatersrand Gold Fields* which appeared in 1892. The map itself is dated to August 1891. An enlarged section of this map showing the farm Roodepoort is depicted below.

Although a number of gold mines are depicted along the Main Reef some distance north of the present study area (including the Durban Roodepoort Deep Gold Mining Company, the Evelyn Gold Mining Company and the Roodepoort United Main Reef Gold Mining Company), no gold mines are depicted within or in proximity to the present study area at the time.

5.3.2.2 C.S. Goldmann's Later Map

The second map of note for this discussion was published in the third volume of C.S. Goldmann and J. Kitchin's *South African Mines: Their Position, Results and Development*. The book was published between 1895 and 1896.

If one compares this map with the previous one, it is evident that a number of changes had occurred since the 1891 map was published. While no mines are depicted within or in proximity to the study area on the 1891 map, the 1895 or 1896 map depicts a large number of registered claim holders. These include the following:

- **H.B. Marshall**

  Henry Brown Marshall (1852 – 1948) was a landowner and industrialist associated with Johannesburg and gold mining activities during the turn of the century. He acquired the portion of Johannesburg where Marshall's Township was established, and Marshallstown still bears his name. Henry Brown Marshall was a director of the Victoria Falls and Transvaal Power Company (V.F.P.), managing director of several mining companies and in 1895 formed the Clydesdale (Transvaal) Collieries Limited

(Fraser & Jeeves, 1977). As a member of the Reform Committee, he was arrested in 1896 after the Jameson Raid.

- **R.R. Hollins**

  Richard Roger Hollins (1848 – 1929) was a prospector and mailcoach owner. He prospected for diamonds, coal and silver in various sections of Southern Africa. Hollins arrived on the Witwatersrand in 1886 and opened coach lines linking Johannesburg with Kimberley, Natal and Rhodesia. He was one of the founding members of the Johannesburg Chamber of Mines (Fraser & Jeeves, 1977).

- **South Roodepoort Gold Mining Company**

  The South Roodepoort mine had already been in existence during c. 1893 (Williams, 1992).

- **J. Guedalla**

  No information regarding J. Guedella could be found.

- **Kimberley Roodepoort Gold Mining Company**

  The mine was located on the farm Roodepoort and the company's properties consisted of two separate Mynpachts 100 morgen in extent. It had 26 claims on the Main Reef series, with all the dip ground secured by the Mynpacht. Water was supplied from the mine water-right and a large dam.

  The original directorate comprised W. Joel, S.B. Joel, Harry Solomon, T. Robinson and F.J. Dormer. The Board in London comprised T. Honey and W. Armstrong.

  The company's start-up capital totalled £100,000 and was all issued. A number of reefs ran through the company's property including North Reef (3ft wide), North Reef Leader (1ft wide) and the South Leader of the Main Reef which was the richest reef on the property and panned well. The average dip of the reef was 42°. The main shaft was 260ft with four incline shafts, the first two of which were almost exhausted.

The company's assets included a 40 stamp Sandycroft mill located on the water, 60hp battery, 30hp engine for hauling, 16hp engine for hauling, electric lighting plant, 16 Frue Vanners, one large dam and a tramline incline 1,600ft in length.

- **Roodepoort Deep Level Gold Mining Company**

The Roodepoort Deep Level Gold Mining Company is another one of the early gold mining companies and was already in existence by 19 June 1895. At the time it had a nominal capital of 180,000 and an issued capital of 170,000 (Hatch & Chalmers, 1895)

5.3.2.3 Untitled Map dating to 1933

The third map which will be discussed here comprises a copy of an unknown map which dates to 1933. The map copy was included in an unpublished report by D.H. Rodd which deals with a database of the buildings on the property of the Durban Roodepoort Deep Limited that was undertaken under the auspices of the then National Monuments Council (Rodd, 1995). A similar map was observed in the book *Witwatersrand Mining Practice* that was compiled in 1931 (Watermeyer & Hoffenberg, 1932).

If one compares this map with the previous one, it is evident that a number of changes had occurred since the 1895/6 map was published. While at least six different property or mine owners are depicted on the previous map, the 1933 map only shows three mines within (and in close proximity to) the study area which suggests that consolidation of both properties and companies owning properties has taken place. Furthermore, no individual claim owners are depicted anymore with just three large mining companies shown in proximity to the present study area. These three mining companies are the following:

- **Roodepoort United Main Reef Gold Mining Company Limited**

The property consisted of 54 claims and was located on the Main Reef series. Seventeen of these claims were located directly on the Main Reef outcrop, while 36 claims were situated to the south and one claim to the north. All the claims were specially registered and divided into three blocks:

1) The Eastern Block

Formerly the property of the Evelyn Main Reef and Lyndhurst syndicates this block comprised 18 claims five of which were on the Main Reef, 12 on the southern dip and one to the north. The block is bound on the east by the *Durban Roodepoort Gold Mining Company* and on the west by the *Evelyn Gold Mining Company* and partly covers the dip of both these companies.

2) The Middle Block

Formerly the property of the Queen and Lyndhurst syndicates this block comprised 24 claims. Seven of these claims were on the Main Reef and 17 on the southern dip. The block is bound on the east by the *Evelyn Gold Mining Company*, on the west by *Durban Roodepoort* and partly covers the dip of both these companies.

3) The Western Block

Formerly the property of the Roodepoort Main Reef Extensions and Lyndhurst syndicates this block comprised 12 claims. Five of these claims were on the Main Reef and seven on the southern dip. The block is bound on the east by the *Durban Roodepoort Company* and on the west the *Evelyn Gold Mining Company*. The company owned two water rights and a five year arrangement with the *Princess Estate Gold Mining Co*mpany, whereby water was pumped from the *Princess Company's* reservoir, securing *Roodepoort United* with an ample supply.

The original directors were J.G. Mynhard, J.S. Harrison, W.H. Morton, Carl Hanan, K. Tucker, T.P. Mynhard and Carl Peppe. The company's original start-up capital amounted to £50,000 and on 23 July 1888 the capital was increased to £75,000. Over the years amalgamations with other mining companies were considered but never accepted. On 18 March 1891 the company borrowed £5,000 from the National Bank for the purchase of machinery. In 1891 heavy rains in Roodepoort caused an inrush of water, severely affected production on the mine. Development was ceased and production on No. 3 shaft decreased from 15,000 tons to 6,100. A similar fate befell No. 2 shaft, while No.1 shaft was continuously worked but only on the 50 foot level. Once the water had been cleared, work returned to normal yielding a plentiful supply

of ore. The mining company's machinery and assets included a 20 stamp Sandycroft mill, one 20hp Marshall engine, two 16hp boilers, a Tangye pump, battery, wheeler pans, barrels, stone crushers, one 10hp and one 12hp hauling engine, managers house, men's quarters, compound, small dam with a large water right and double tram line 3,000 feet in length.

- **Durban Roodepoort Deep Limited**

The mine was located approximately one mile from Roodepoort Station. Originally consisting of eight claims, a further 16 were added shortly afterwards to the south of the original claims. The 24 claims were amalgamated in February 1889 and specially registered on the 27th November 1889. In September 1890 a further 43 claims were acquired bringing the company's total claims to 67. The original directors were P.W. Tracey, H. Molyneux, W.J. Quin, F.A. English, W. Dettelbach, T.Y. Sherwell and J.W. Bell. The works of the company consists of one main hauling shaft, sunk with the objective of striking the reefs of the *Durban Roodepoort Company*. The first reef of any significance was struck at 210 feet. A second reef was struck at a depth of 297 feet and it was found to be divided into two reefs of two feet separated by a layer of quartz. A drive was started at the 297 foot level and its quality improved towards the east. Further reefs were struck at 316, 325, 344 and 350 feet respectively, thereby intersecting the entire Main Reef series. The shaft was finally concluded at a depth of 356 feet. The assets included one small vertical engine, spare boiler, pump piping, head gear with necessary plant, manager and workmen quarters, compound, stables, outhouses and store rooms.

In May 1934 the capital of the Durban Roodepoort Deep was increased by £1,000,000 to allow for the acquisition of the New Steyn Estate Mine. By 1946 the entire southern section of the farm Roodepoort was owned by Durban Roodepoort Deep (Jeppe, 1946). This situation appears to have remained largely unchanged until the recent past.

- **New Steyn Estate Gold Mines Limited**

Very little information could be located with regard to this mining company. It would appear that the mining company had already been in existence by 1898.

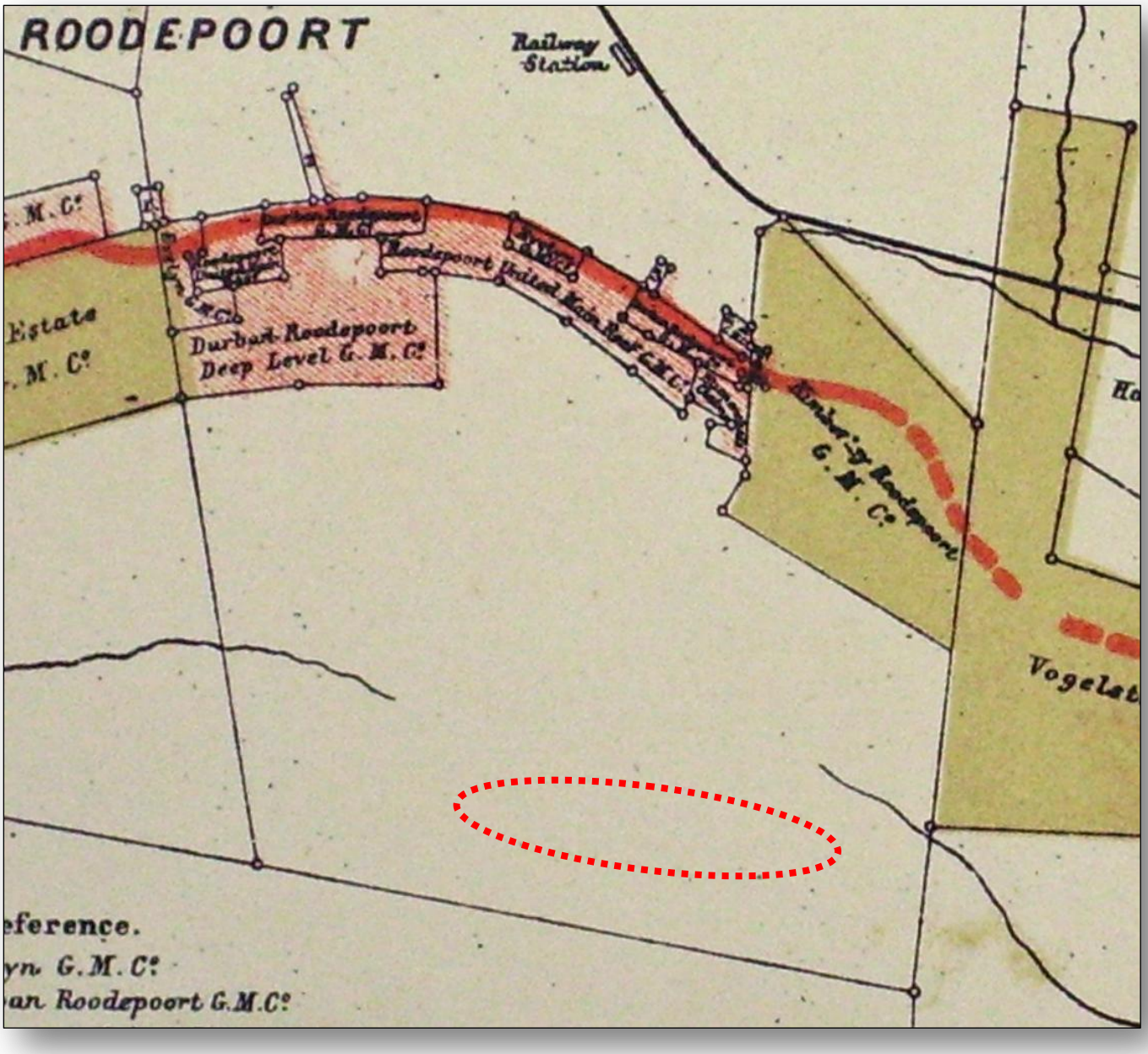


Figure 12 – Portion of the map dated to August 1891. The approximate position of the study area is shown.

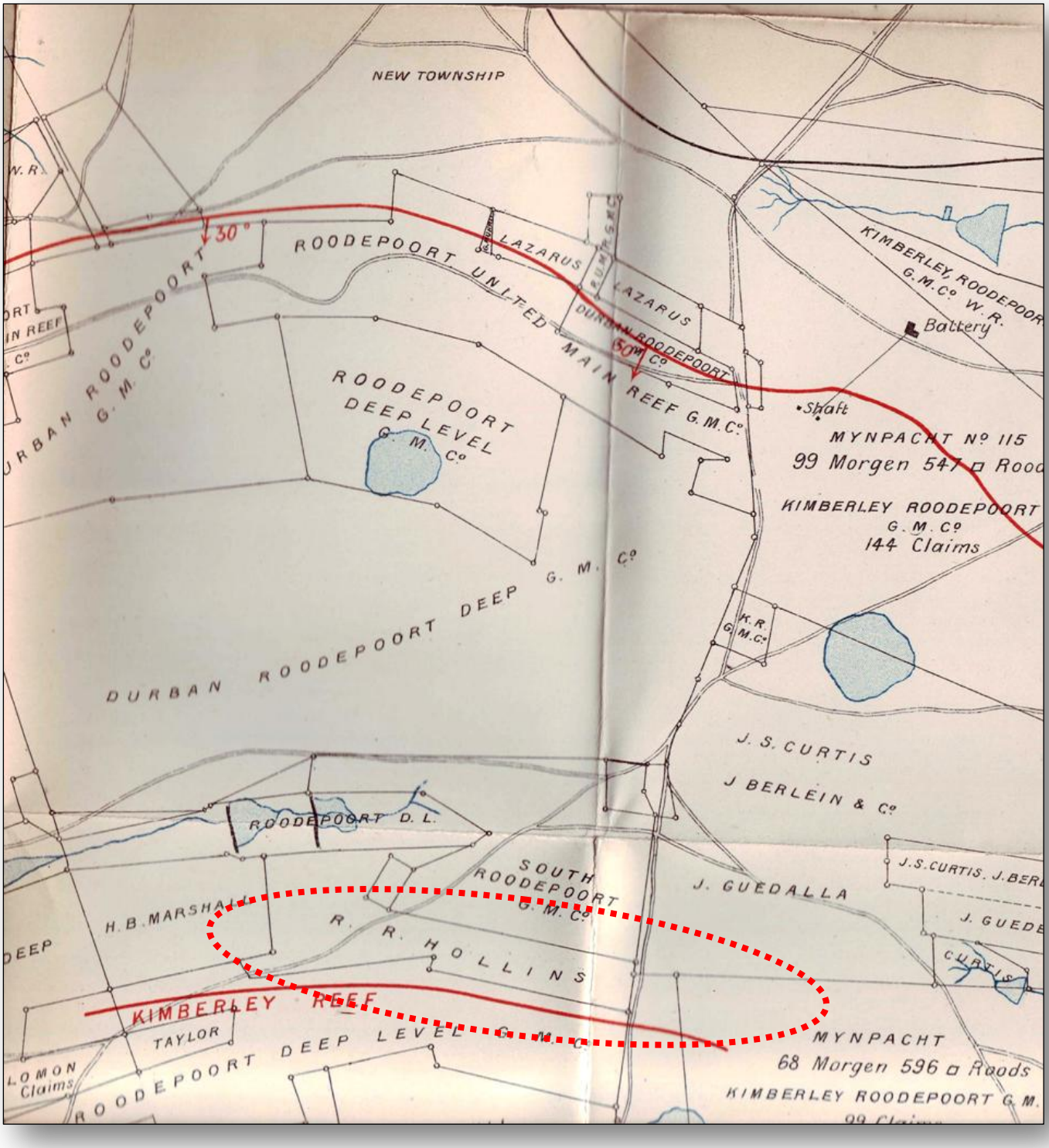


Figure 13 – Portion of the map dated to 1895 or 1896. It shows the approximate boundaries of the study area in relation to the mining properties and claims located within the farm at the time.

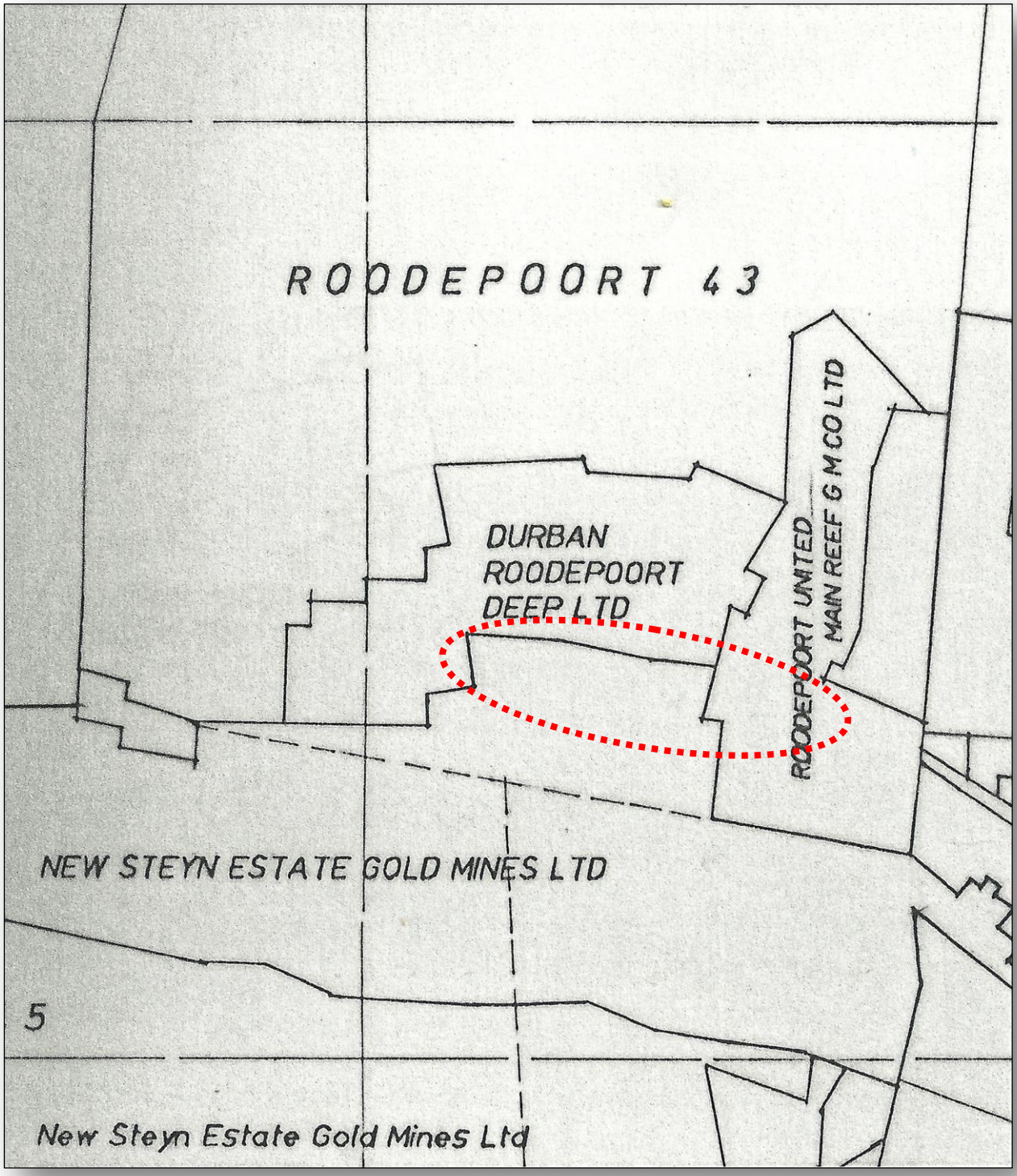


Figure 14 – Portion of the map dated to 1933. It shows the approximate boundaries of the study area in relation to the mining properties and claims located within the farm at the time.

5.4 Archival and Historic Maps of the Study Area and Surrounding Landscape

5.4.1 Heidelberg Sheet of the Major Jackson Map Series

The Heidelberg sheet of the Major Jackson Series is depicted below (National Archives, Maps, 3/1896). This map series was compiled by the British Field Intelligence Department during the South African War (1899-1902). This particular sheet is the third revised edition and dates to June 1902.

Although the map is very faint, the only features that can be identified are a number of secondary roads crossing over the study area. A number of buildings are depicted directly to the east of the study area, and these buildings may have been associated with a mine. Similarly, a large number of buildings are depicted across the farm Roodepoort which for the most part can be associated with early mining activities at the time.

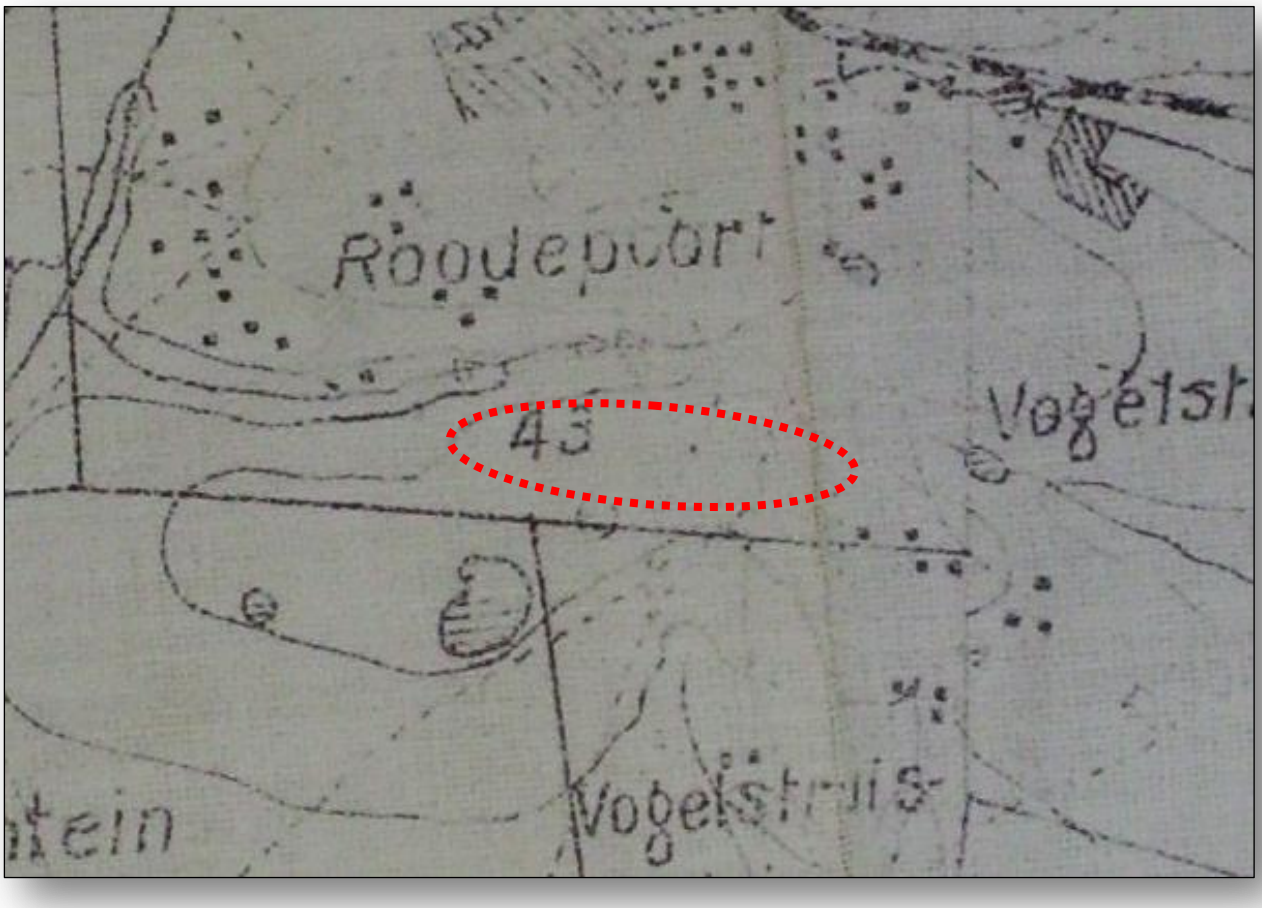


Figure 15 – Portion of the Heidelberg sheet of the Major Jackson Series that is dated to June 1902. The approximate position of the study area is shown in red.

5.4.2 Krugersdorp Sheet of the 1:125 000 Series

The Krugersdorp sheet of the 1:125 000 topographical map series of the Transvaal General Staff's Geographical Section that was compiled in 1913 is depicted below (National Archives, Maps, 3/1419).

The following heritage features are depicted within the study area:

- Feature 1

  Two buildings associated with a nearby mine are depicted within the study area. No evidence for these buildings could be identified during the fieldwork.

The following general observations can be made:

- A road which appears to be Cemetery Road is shown crossing over the study area.

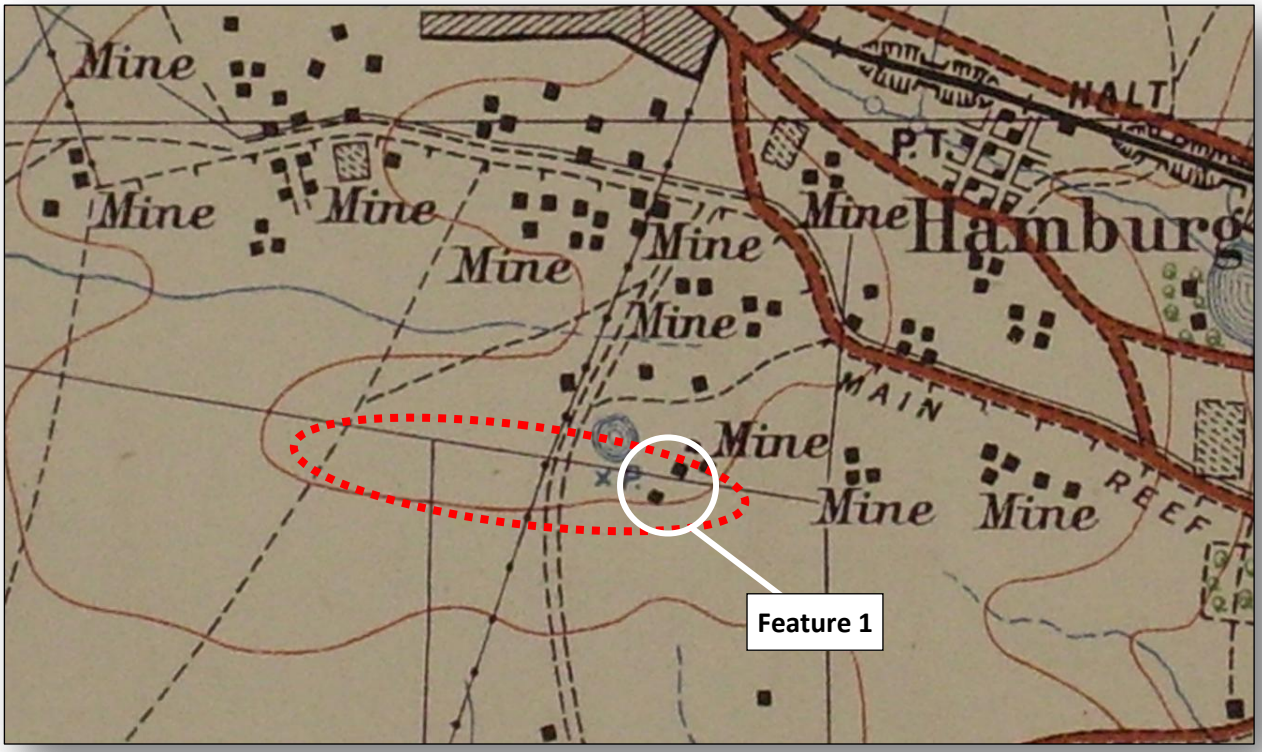


Figure 16 – Portion of the Krugersdorp sheet of the 1:125 000 topographical map series that was compiled in 1913. The approximate position of the study area is shown in red.

5.4.3 First Edition of the 2627BB Topographical Sheet

A portion of the First Edition of the 2627BB Topographical Sheet is depicted below. The map was compiled and drawn by the Survey Depot (Tech) of the S.A.E.C. in 1943. Field revision was undertaken during the same year by 45 Survey Company, S.A.E.C. The sheet was printed by the Government Printing Works and Mobile Map Printing Company in March 1944.

The following heritage features are depicted within the study area:

- Feature 1

  The compound that was associated with Durban Roodepoort Deep's No. 5 Shaft is depicted within the study area. This shaft was completed in 1936 (Durban Roodepoort Deep, 2001). No evidence for this compound could be identified during the fieldwork.

The following general observations can be made:

- A number of roads as well as one power line are shown crossing over the study area.

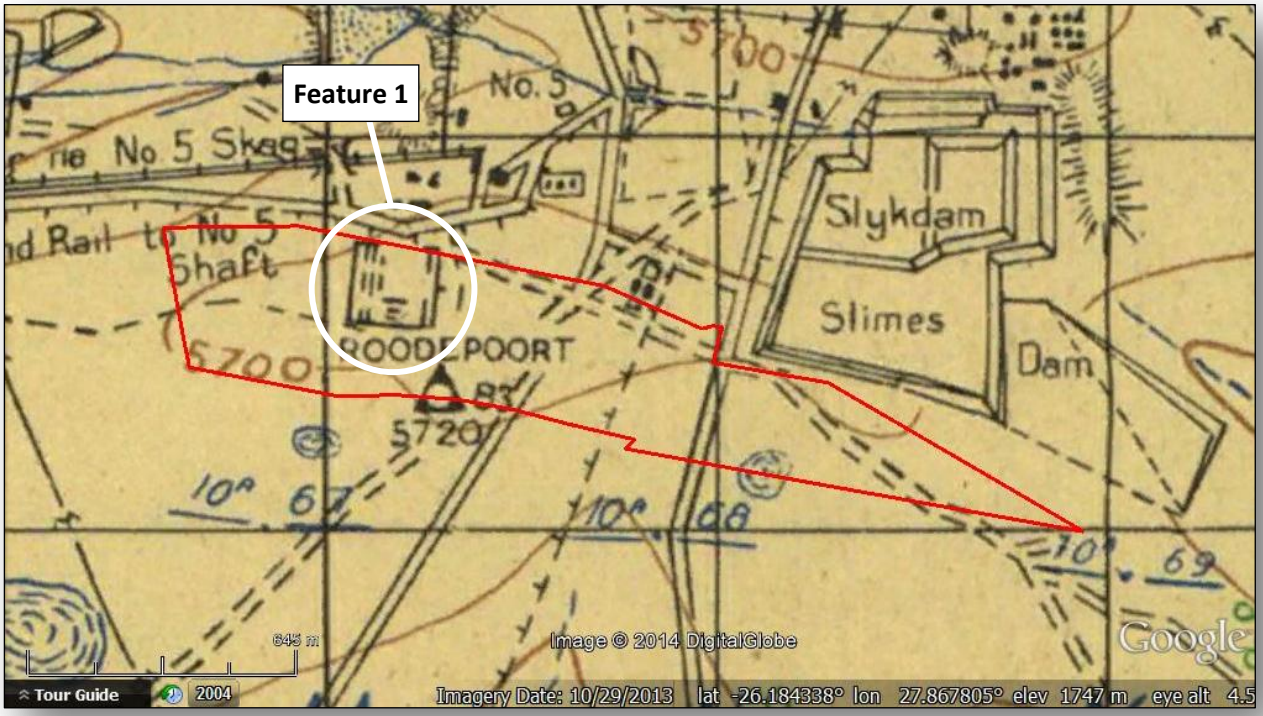


Figure 17 – Portion of the First Edition of the 2627BB Topographical Sheet that was surveyed in 1943. The position of the study area is shown in red. This image was created using Google Earth.

5.4.4 Second Edition of the 2627BB Topographical Sheet

A portion of the Second Edition of the 2627BB Topographical Sheet is depicted below. The map was based on aerial photography undertaken in 1952, was surveyed in 1954 and drawn in 1956 by the Trigonometrical Survey Office. The following heritage features are depicted:

- Feature 1

  The same compound that was depicted on the 1943 map is shown again.

- Features 2 & 3

  Two "tanks" are depicted within the study area. It can be assumed that these would have been water tanks. No evidence for these could be identified during the fieldwork.

- Feature 4

  Three buildings associated with Durban Roodepoort Deep's No. 8 Shaft are depicted within the study area. No evidence for these buildings was found during the fieldwork.

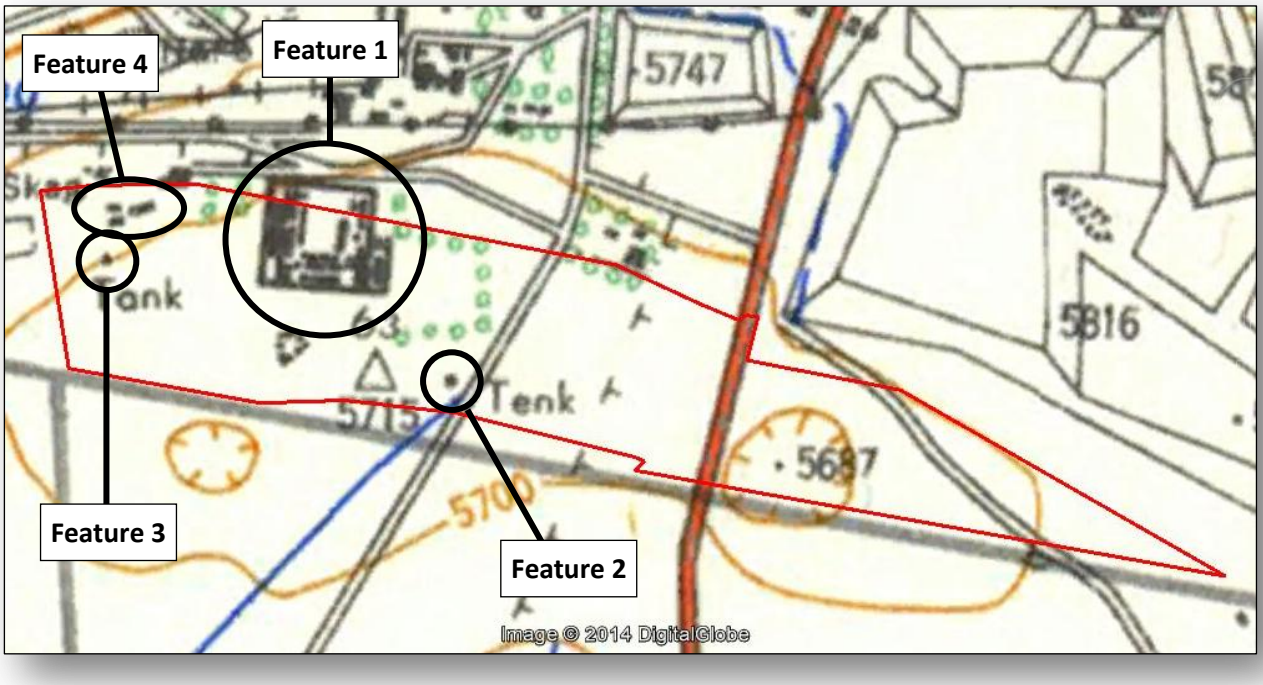


Figure 18 – Portion of the Second Edition of the 2627BB Topographical Sheet that was surveyed in 1954. The position of the study area is shown in red. This image was created using Google Earth.

5.5 Aerial Photographs of the Study Area and Surrounding Landscape

5.5.1 Aerial Photograph taken in 1938

A section of the aerial photograph that was taken in 1938 is depicted below (National Geospatial Institute, Aerial Photographs, 129_1938_15_54526). The photograph was taken on 18 April 1938. With the use of Google Earth the study area boundaries were plotted on the aerial photograph. The following heritage features can be identified within the study area:

- Feature 1

  A compound is depicted here. Based on the available information the compound was associated with Durban Roodepoort Deep's No. 5 Shaft. A sports field is shown to the east of the compound. As indicated above, the No. 5 Shaft was completed in 1936 which provides a date for when this compound was in all likelihood built. As indicated elsewhere, no evidence for this compound was identified during the fieldwork.

In general terms, some prospecting holes and unidentified disturbance are depicted on the north-western end of the study area, with more prospecting trenches visible further to the east. A number of roads are also shown crossing over the study area.

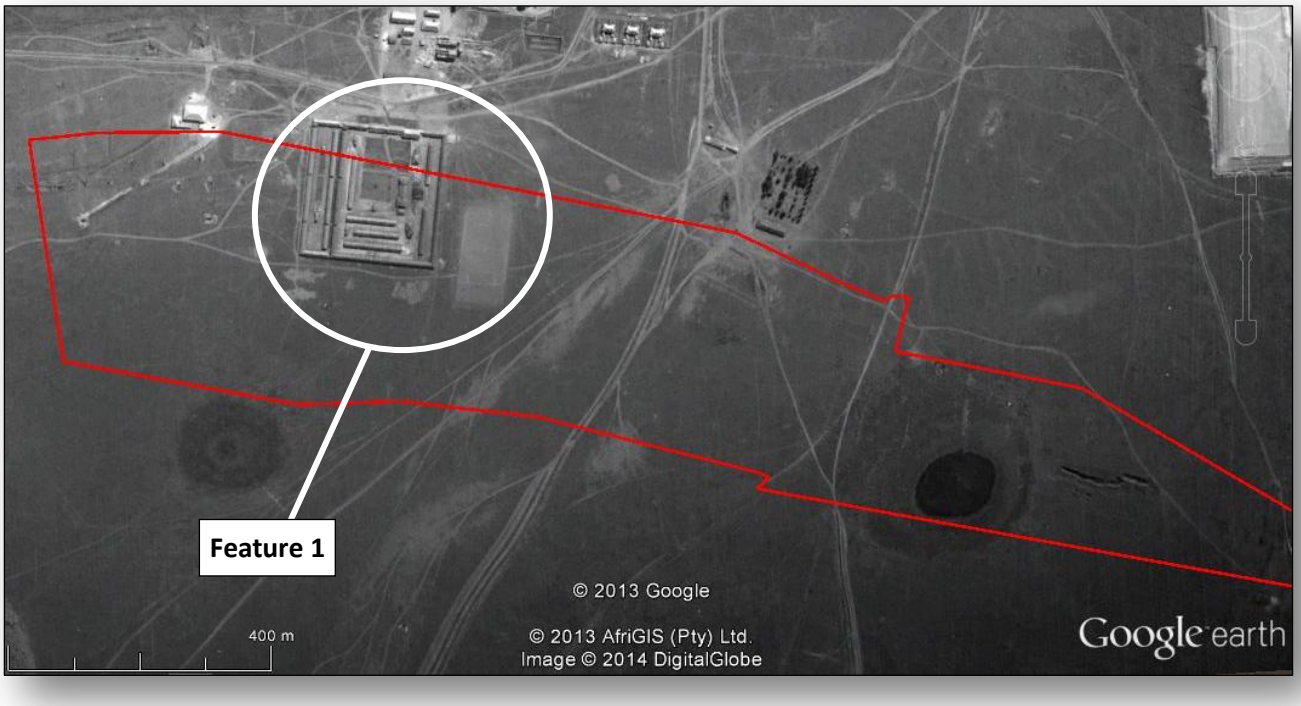


Figure 19 – Portion of the aerial photograph that was taken in 1938.

6 FIELDWORK FINDINGS

A systematic walkthrough of the study area was undertaken by a fieldwork team comprising an archaeologist and field assistant. A hand-held GPS was used to record track logs.

Figure 20 – Google Earth image depicting the track logs that were recorded during the fieldwork. The study area boundaries are shown in red, the recorded track logs are in white and the identified heritage site marked in yellow.

6.1 Site 1

Site Coordinates:

S 26.183159
E 27.861286

Site Description:

The site comprises a number of heaps containing building rubble. No evidence for foundations of structures could be identified, although the vegetation cover found at the site would have reduced the visibility of any features which are low to the ground. A number of exotic tree species were observed in proximity to the building rubble heaps including jacaranda and palm trees.

While the field assessment of the site revealed no information or tangible remains as to its origins or association, the archival and historical desktop study revealed that the compound of the Durban Roodepoort Deep No. 5 Shaft was located here. This compound would have been built at roughly the same time that the shaft was sunk. As it its known the mine's No. 5 Shaft was completed in 1936 (Durban Roodepoort Deep, 2001), this provides a strong indication for the age of the compound. Further support for this date can be found in the historic overview of mining properties which was undertaken as part of the desktop study. In all likelihood the area where the compound would have been located used to be situated within the mining property of the New Steyn Estate Gold Mines Limited. In 1934 the Durban Roodepoort Deep acquired the properties of the New Steyn mine and in 1936 completed its No. 5 Shaft here. Furthermore, the 1938 aerial photograph depicts the feature in what appears to be a recently completed condition in that no trees are shown in association with the compound.

The compound still existed during the building survey undertaken by D.H. Rodd for the National Monuments Council between 1993 and 1995. At the time it is already described as "...*in a neglected state of repair*" (Rodd, 1995:95). In his report, Rodd indicates that the compound comprised a number of components, namely the compound comprising bricks with corrugated iron roofs, a kitchen complex of painted brick with corrugated iron roofs, dormitory blocks of painted brick with corrugated iron roofs, ablution blocks of painted brick with corrugated iron roofs, compound perimeter dormitory blocks of painted brick with corrugated iron roofs as

well as a boiler house of painted brick with corrugated asbestos roofs (Rodd, 1995). The earliest Google Earth image that could be found was taken on 13 April 2004. The compound was evidently already demolished by this date. The indication from this discussion is that the compound was demolished sometime between 1995 and 2004 by unknown parties and for unknown purpose.

Site Significance:

The site is very poorly preserved and without the benefit of desktop study findings it would have been impossible to identify this locality as the position of a compound. If the compound still existed today it would have been 78 years old. However, no remains of the structure still exist on site. The site is furthermore not older than 100 years and as a result any cultural material which may still be located here can be considered of no significance. The site is of Generally Protected C (GP.C) / Low Significance. No mitigation measures are required.

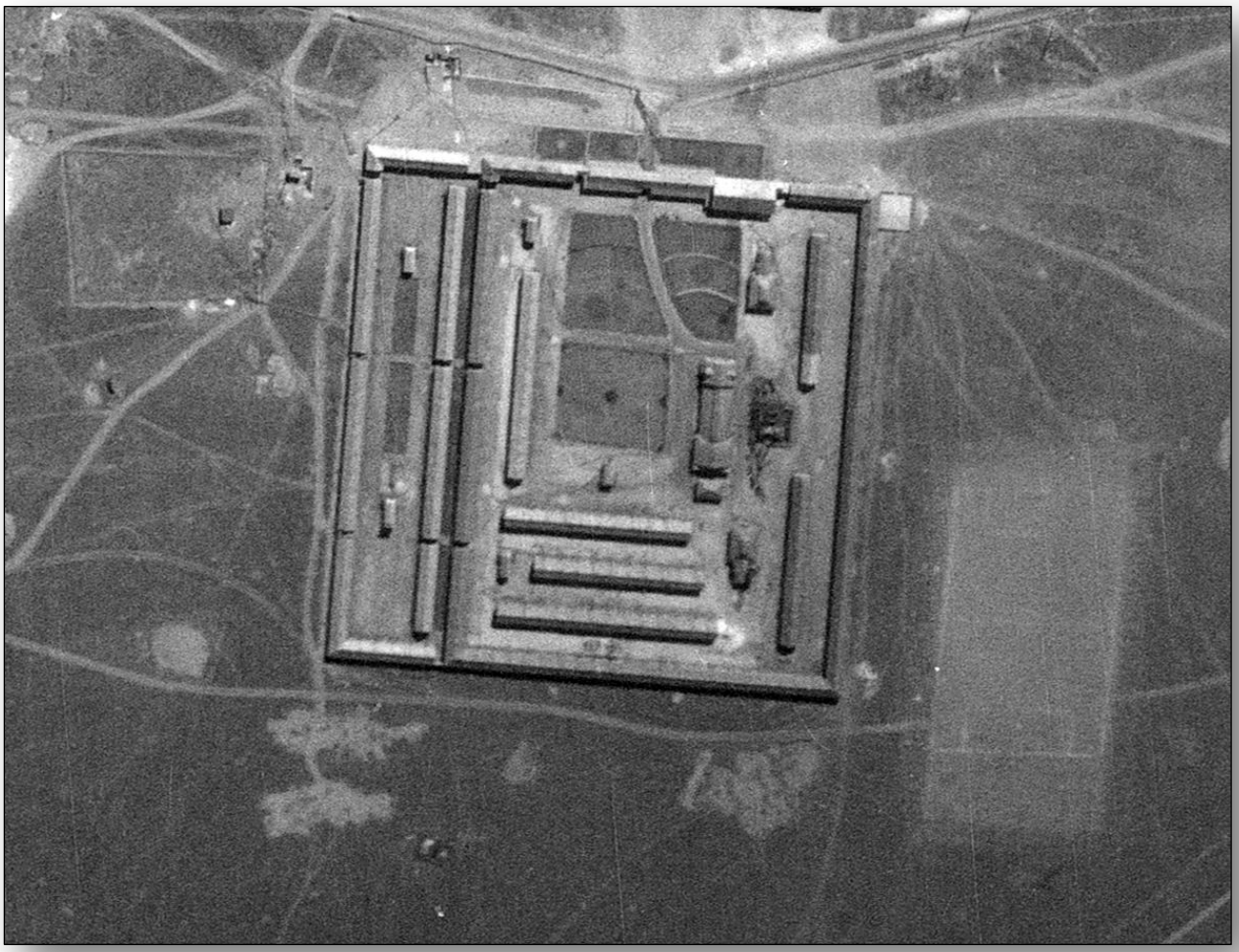


Figure 21 – The compound as depicted on the 1938 aerial photograph. A sports field is shown on the right.

Figure 22 – General view of a section of the site showing low heaps of building rubble.

Figure 23 – General view of the site with examples of exotic planted vegetation clearly evident.

7 IMPACT OF PROPOSED DEVELOPMENT ON HERITAGE RESOURCES

In this section the impact of the proposed development on the one site that was identified within the study area will be calculated.

7.1 Risk Calculation for the Impact of the Proposed Development on Site 1

In this section the impact of the proposed development on Site 1 will be established.

$$\text{Impact Risk} = \frac{(\text{Significance} + \text{Spatial} + \text{Temporal})}{3} \times \frac{\text{Probability}}{5}$$

$$\text{Impact Risk} = \frac{(1 + 2 + 4)}{3} \times \frac{4}{5}$$

IMPACT RISK = 1.6

Table 10: Risk Calculation for Development Impact on Site 1

IMPACT	SIGNIFICANCE	SPATIAL SCALE	TEMPORAL SCALE	PROBABILITY	RATING
	Very Low	Study Area	Long-Term	Very Likely	**Low**
Impact on Site 1	1	2	4	4	**1.86**

This calculation has revealed that the impact risk of the proposed development on Site 1 falls within Impact Class 2, which represents a Low Impact Risk. As a result no mitigation would be required.

8 CONCLUSIONS

PGS Heritage was appointed by Singisa to undertake a Heritage Impact Assessment (HIA) which forms part of the Environmental Impact Assessment (EIA) for the proposed establishment Goudrand Ext. 12, Goudrand Ext. 13, Goudrand Ext. 14 and Goudrand Ext. 15 situated within the Roodepoort Magisterial District, City of Johannesburg Metropolitan Municipality, Gauteng Province.

An archival and historical desktop study was undertaken which was used to compile a historical layering of the study area within its regional context. This component indicated that the landscape within which the project area is situated is associated with historic gold mining activities from the 1880s onward. The desktop study also revealed the presence of a compound within the study area. This compound was associated with the Durban Roodepoort Deep's No. 5 Shaft and was likely built at the same time that this shaft was established. The No. 5 shaft was completed in 1936 which provides a likely age for the compound. This compound was demolished between 1995 and 2004.

The desktop study work was followed by fieldwork which comprised a walkthrough of the study area. One site was identified which comprised low heaps of building rubble associated with exotic planted vegetation such as palms and jacaranda trees. At the time of the fieldwork the presence of a compound within the study area had not yet been revealed. The poor preservation of the compound is such that it was impossible to identify the site as the remains of a former compound. Due to the low level of preservation of the site it was deemed to be of Low Significance.

An impact risk calculation for the impact of the proposed development on the site was undertaken which revealed that the development will have a Low Impact Risk on the identified site. As a result no mitigation measures would be required.

The development is not expected to have any impact on heritage sites. From a heritage point of view the proposed development may be allowed to continue.

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Historic Topographic Maps

The historic topographic maps used in this report were obtained from the Directorate: National Geo-spatial Information of the Department of Rural Development & Land Reform, Cape Town.

Google Earth

All the aerial depictions used in this report are from Google Earth.

Appendix A

LEGISLATIVE REQUIREMENTS – TERMINOLOGY AND ASSESSMENT CRITERIA

General principles

In areas where there has not yet been a systematic survey to identify conservation worthy places, a permit is required to alter or demolish any structure older than 60 years. This will apply until a survey has been done and identified heritage resources are formally protected.

Archaeological and palaeontological sites, materials, and meteorites are the source of our understanding of the evolution of the earth, life on earth and the history of people. In terms of the heritage legislation, permits are required to damage, destroy, alter, or disturb them. Furthermore, individuals who already possess heritage material are required to register it. The management of heritage resources is integrated with environmental resources and this means that, before development takes place, heritage resources are assessed and, if necessary, rescued.

In addition to the formal protection of culturally significant graves, all graves which are older than 60 years and are not located in a cemetery (such as ancestral graves in rural areas), are protected. The legislation also protects the interests of communities that have an interest in the graves: they should be consulted before any disturbance takes place. The graves of victims of conflict and those associated with the liberation struggle are to be identified, cared for, protected and memorials erected in their honour.

Anyone who intends to undertake a development must notify the heritage resources authority and, if there is reason to believe that heritage resources will be affected, an impact assessment report must be compiled at the construction company's cost. Thus, the construction company will be able to proceed without uncertainty about whether work will have to be stopped if an archaeological or heritage resource is discovered.

According to the National Heritage Act (Act 25 of 1999 section 32) it is stated that:
An object or collection of objects, or a type of object or a list of objects, whether specific or generic, that is part of the national estate and the export of which SAHRA deems it necessary to control, may be declared a heritage object, including –

- objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, meteorites and rare geological specimens;
- visual art objects;

- military objects;
- numismatic objects;
- objects of cultural and historical significance;
- objects to which oral traditions are attached and which are associated with living heritage;
- objects of scientific or technological interest;
- books, records, documents, photographic positives and negatives, graphic material, film or video or sound recordings, excluding those that are public records as defined in section 1 (xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996), or in a provincial law pertaining to records or archives; and
- any other prescribed category.

Under the National Heritage Resources Act (Act No. 25 of 1999), provisions are made that deal with, and offer protection to, all historic and prehistoric cultural remains, including graves and human remains.

Graves and cemeteries

Graves younger than 60 years fall under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925) as well as the Human Tissues Act (Act 65 of 1983) and are under the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the Office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning, or in some cases the MEC for Housing and Welfare. Authorisation for exhumation and reinternment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. In order to handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

Graves older than 60 years, but younger than 100 years, fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act) as well as the Human Tissues Act (Act 65 of 1983) and are under the jurisdiction of the South African Heritage Resources Agency (SAHRA). The procedure

for Consultation regarding Burial Grounds and Graves (Section 36(5) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in the category located inside a formal cemetery administrated by a local authority will also require the same authorisation as set out for graves younger than 60 years, over and above SAHRA authorisation.

If the grave is not situated inside a formal cemetery but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws set by the cemetery authority must be adhered to.