

Archaeological Impact Assessment

**HELDERWYK TOWNSHIP DEVELOPMENT ON
THE REMAINDER OF PORTION 62 OF THE
FARM WITPOORTJIE 117 IR, BRAKPAN,
EKURHULENI, GAUTENG PROVINCE**

Prepared For
Eco Assessment Environmental Consultants

By



Wits Commercial Enterprise (Pty) Limited
(Registration No: 2002/008461/07)
5th floor, Senate House, Jorissen Street, 2001 Braamfontein
Private Bag 3, 2050 Wits
South Africa

Service provider



UNIVERSITY OF THE WITWATERSRAND
SCHOOL OF GEOGRAPHY, ARCHAEOLOGY AND ENVIRONMENTAL STUDIES
PRIVATE BAG 3, P O WITS 2050
TEL: +27 82 373 8491. E –MAIL JACO.HERITAGE@GMAIL.COM

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HELDERWYK EXT - AIA

KNOWLEDGEMENT OF RECEIPT

CLIENT:

Eco Assessments Environmental Consultants

CONTACT PERSON:

Gerhard Cronje

Tel: (011) 782 3428, Fax: (011) 888 9588

gerhard@ecoassessments.co.za

SIGNATURE:

LEADING CONSULTANT:

Wits Heritage Contracts Unit



CONTACT PERSON:

Jaco van der Walt

Wits Heritage Contracts Unit

Professional Member of the Association of Southern
African Professional Archaeologist (#159)



SIGNATURE:

Executive summary

Site name and location: Proposed township development on Portion 62 of the farm Witpoortjie 117 IR, Brakpan, Ekuruleni, Gauteng Province.

EIA Consultant: Eco Assessments

AIA Consultant: Wits Heritage Contracts Unit. University of the Witwatersrand, School of Geography, Archaeology and Environmental Studies, Private Bag 3, P.O Wits 2050, Tel: +27 82 373 8491. E –mail jaco.heritage@gmail.com

1:50 000 Map number: 2628 AD

Date of Report: 21 October 2009

Findings of the Assessment: A locality map is provided in **Annexure A**

No sites of heritage significance were found during the survey from a Heritage point of view there is no reason why the development can not commence.

General

Low ground visibility is present on portions of the site due to high vegetation growth and the possibility of the occurrence of unmarked or informal graves and subsurface finds can not be excluded. If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

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

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

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.1. INTRODUCTION

Wits Heritage Contracts Unit was contracted by Eco Assessments to conduct an Archaeological Impact Assessment for the proposed township development on the remainder of the farm Witpoortjie 117 IR, Ekuruleni, Gauteng Province.

The report forms part of the Environmental Impact Assessment for the proposed project. The aim of the study is to identify all heritage sites, document, and assess their importance within Local, Provincial and national context. To assess the impact of the proposed project on non renewable heritage resources and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes in Phase 1: Information collection from various sources and consultations; Phase 2: Physical surveying of the area on foot and by vehicle; and Phase 3: Reporting the outcome of the study.

During the survey, no sites of heritage significance were identified. General site conditions and features on sites were recorded by means of photos, GPS location, and description. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to SAHRA provincial office for peer review.

1.2 TERMS OF REFERENCE

Conduct brief desktop study to:

Review available literature, previous heritage studies and other relevant information sources. Gather data and compile a background history of the area. Identify all known and recorded archaeological and cultural sites; and determine whether the area is renowned for any cultural and heritage resources, such as Stone Age sites, Iron Age sites, informal graveyards or historical homesteads.

Conduct a field study to:

Systematically survey the proposed project area to locate, identify record, photograph and describe sites of archaeological, historical or cultural interest; and record GPS points of significant areas identified. Determine the levels of significance of the various types of heritage resources recorded in the project area;

Reporting

Identify the anticipated impacts, as well as cumulative impacts, of the operational units of the proposed project activity on the identified heritage resources for all 3 phases of the project, i.e. construction, operation and decommissioning phases. Consider alternatives should any significant sites be impacted adversely by the proposed project. Ensure that all requirements of the local South African Heritage Resources Agency (SAHRA) are met; and ensure that all studies and results are sufficient to comply with ALL the relevant requirements of the Equator Principles, World Bank Standards and IFC Principles and Performance Standards and National legislation. To assist the developer in managing the discovered 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).

1.3 Nature of the development

It is proposed that a mixed use residential township development will take place on the remainder of Portion 62 of the farm Witpoortjie 117 IR.

1.4 Description of study area

The entire study area used to be agricultural fields. Refer to main EIA report for geographical, environmental and demographic issues.

2. APPROACH AND METHODOLOGY

The aim of the study is to extensively cover all data available to compile a background history of the study area; this was accomplished by means of the following phases.

2.1 PHYSICAL SURVEYING

Due to the nature of cultural remains, the majority that occurs below surface, a physical walk through of the study area was conducted. Wits Heritage Contract Unit was appointed to conduct a survey of the proposed development. The study area of approximately 260 ha was surveyed over a period of one day, by means of vehicle and extensive surveys on foot.

Aerial photographs and 1:50 000 maps of the area were consulted and literature of the area were studied before undertaking the survey. The purpose of this was to identify topographical areas of possible historic and pre-historic activity. All sites discovered both inside and bordering the proposed development area was plotted on 1:50 000 maps and their GPS co-ordinates noted. 35mm photographs on digital film were taken at all the sites.

3. Abbreviations and definitions

3.1 Abbreviations

<i>ASAPA</i> : Association of South African Professional Archaeologists	<i>BPEO</i> : Best Practicable Environmental Option
<i>CRM</i> : Cultural Resource Management	<i>DEA&DP</i> : Department of Environmental Affairs and Development Planning
<i>DEAT</i> : Department of Environmental Affairs and Tourism	<i>DWAF</i> : Department of Water Affairs and Forestry
<i>EIA practitioner</i> : Environmental Impact Assessment Practitioner	<i>EIA</i> : Environmental Impact Assessment
<i>EIA</i> : Early Iron Age	<i>ESA</i> : Early Stone Age
<i>GPS</i> : Global Positioning System	<i>HIA</i> : Heritage Impact Assessment
<i>I&AP</i> : Interested & Affected Party	<i>IDP</i> : Integrated Development Plan
<i>LSA</i> : Late Stone Age	<i>LIA</i> : Late Iron Age
<i>MSA</i> : Middle Stone Age	<i>MIA</i> : Middle Iron Age
<i>NEMA</i> : National Environmental Management Act	<i>NHR Act</i> : National Heritage Resources Act
<i>PHRA</i> : Provincial Heritage Resources Agency	<i>PSSA</i> : Palaeontological Society of South Africa
<i>ROD</i> : Record of Decision	<i>SACLAP</i> : South African Council for the Landscape Architect Profession
<i>SAHRA</i> : South African Heritage Resources Agency	<i>SAIA</i> : South African Institute of Architects
<i>SAPI</i> : South African Planning Institute	<i>SDF</i> : Spatial Development Framework

3.2 Definitions

Archaeological resources:

This includes 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;

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 any area within 10m of such representation;

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;

Military:

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 in the opinion of the heritage authority in any way result in the change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;

- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or hoardings;
- any change to the natural or existing condition or topography of land;
- any removal or destruction of trees, or removal or vegetation or topsoil

Heritage resources:

This means any place or object of cultural significance

Stakeholders:

A subgroup of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term includes the proponent, authorities and all interested and affected parties.

4. ARCHAEOLOGICAL LEGISLATION AND BEST PRACTICE

Phase 1 Archaeological Impact Assessments or Heritage Impact Assessments are a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a heritage specialist input is to:

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

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The AIA or HIA, as a specialist sub-section of the Environmental Impact Assessment [EIA] is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 38(1), Section 38(8) the National Environmental Management Act (NEMA) and the Mineral and Petroleum Resources Development Act (MPRDA).

The AIA should be submitted, as part of the EIA, BIA or Environmental Management Plan [EMP], to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and required additional development information, as per the EIA, BIA / EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA. Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level).

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

Phase 1 AIA's are primarily concerned with the location and identification of sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

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

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

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

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After mitigation is conducted on a site, a destruction permit must be applied for from SAHRA before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the South African Heritage Resource 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.

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

.5. ASSESSMENT CRITERIA

5.1 Evaluation of Heritage sites

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

- The unique nature of a site
- The integrity of the archaeological 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.

5.1.1 Heritage Site Significance and Mitigation Measures

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.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial	Grade 2	-	Conservation; Provincial

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Significance (PS)			Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	-	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction
Generally Protected C (GP.C)	-	Low Significance	Destruction

.5.2 Archaeological Context of study area

The historical background and timeframe of the study area can be divided into the Stone Age, Iron Age and Historical timeframe. These can be divided as follows:

Stone Age

The Stone Age is divided in Early; Middle and Late Stone Age and refers to the earliest people of South Africa who mainly relied on stone for their tools.

Early Stone Age: The period from ± 2.5 million yrs - $\pm 250\,000$ yrs ago. Acheulean stone tools are dominant.

Middle Stone Age: Various lithic industries in SA dating from $\pm 250\,000$ yrs – $25\,000$ yrs before present. This period is first associated with archaic *Homo sapiens* and later *Homo sapiens sapiens*. Material culture includes stone tools with prepared platforms and stone tools attached to handles.

Late Stone Age: The period from $\pm 25\,000$ -yrs before present to the period of contact with either Iron Age farmers or European colonists. This period is associated with *Homo sapiens sapiens*. Material culture from this period includes: microlithic stone tools; ostrich eggshell beads and rock art.

Iron Age

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the Pre-Historic and Historic periods. Similar to the Stone Age it can be divided into three periods:

The Early Iron Age: Most of the first millennium AD.

The Middle Iron Age: 10th to 13th centuries AD

The Late Iron Age: 14th century to colonial period.

Historic Timeframe

17th Century to present AD (1600 – 2000)

The historic timeframe intermingles with the later parts of the Stone and Iron Age, and can loosely be regarded as times when written and oral recounts of incidents became available.

Historical Background of Area

Archaeology Africa was appointed by *Matakoma – ARM Heritage Consultants* to undertake a historical and archival study of certain portions of the farm Witpoortje 117-IR (in vd Walt 2007). Applicable sections of the study are reproduced here.

METHODOLOGY

The methodology consisted of the study of published and unpublished literature, archival records, as well as maps to compile the available information needed to address the project aims.

The following institutions were approached for information:

National Archives, Pretoria

UNISA Library, Pretoria

Springs Public Library, Springs

Museum Afrika, Newtown, Johannesburg

CARTOGRAPHIC MATERIAL

- **Major Jackson Series Sheet “Heidelberg”, Revised Edition April 1903**

A section of the “Heidelberg” sheet from the Major Jackson Map Series is depicted in **Figure 1**. The map series was compiled, surveyed and produced during the Anglo Boer War of 1899 to 1902 (National Archives, Maps, 2/179). The “Heidelberg” sheet was first printed in July 1902, while the sheet depicted below represents the revised edition dated 21 April 1903.

A number of significant heritage observations can be made from the map. The first of these is the depiction of three buildings just outside of the study area (marked in red). If these structures still exist they would represent some of the oldest buildings on the entire farm and would also have an age in excess of 100 years.

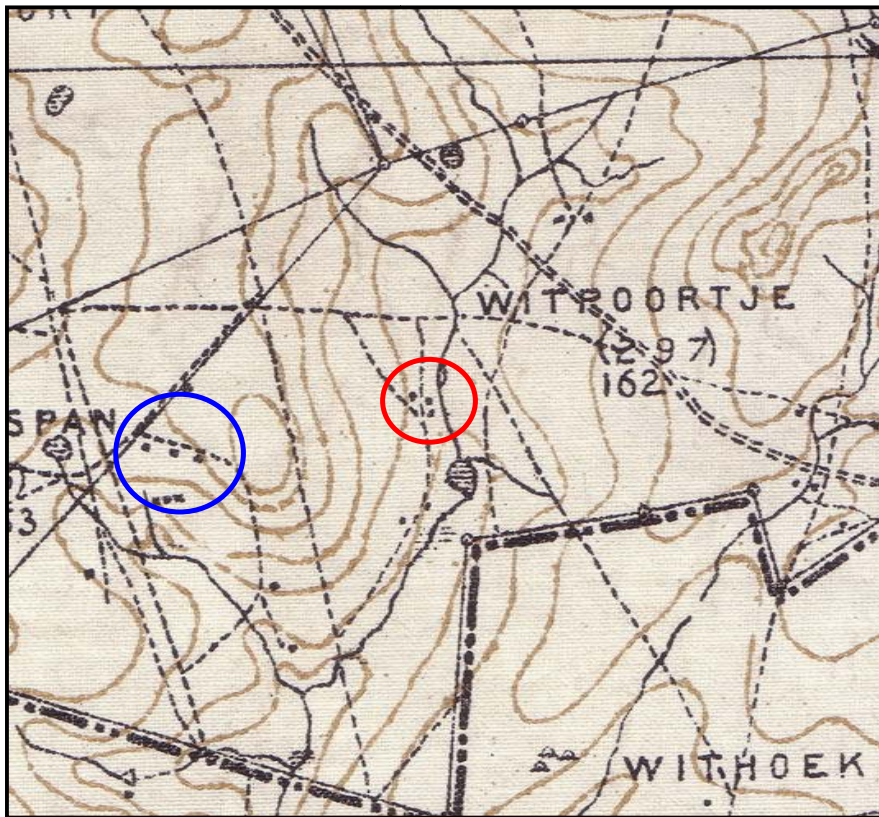


Figure 1: The farm Witpoortje as depicted on the Major Jackson Series “Heidelberg” Sheet, dated April 1903 (revised edition). The positions of two noteworthy heritage features are marked.

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- **1:50 000 Topographical Map titled “SPRINGS”, dated 1976**

The map depicted in **Figure 2** is the fourth edition of the particular sheet, and is dated to 1976. It provides an indication as to the characteristics of the study area after all mining has stopped.

The current study area is marked by a red polygon. It is clear that the study area was cultivated and that the historic mining activities occurred to the north of the study area (features marked by red circles)

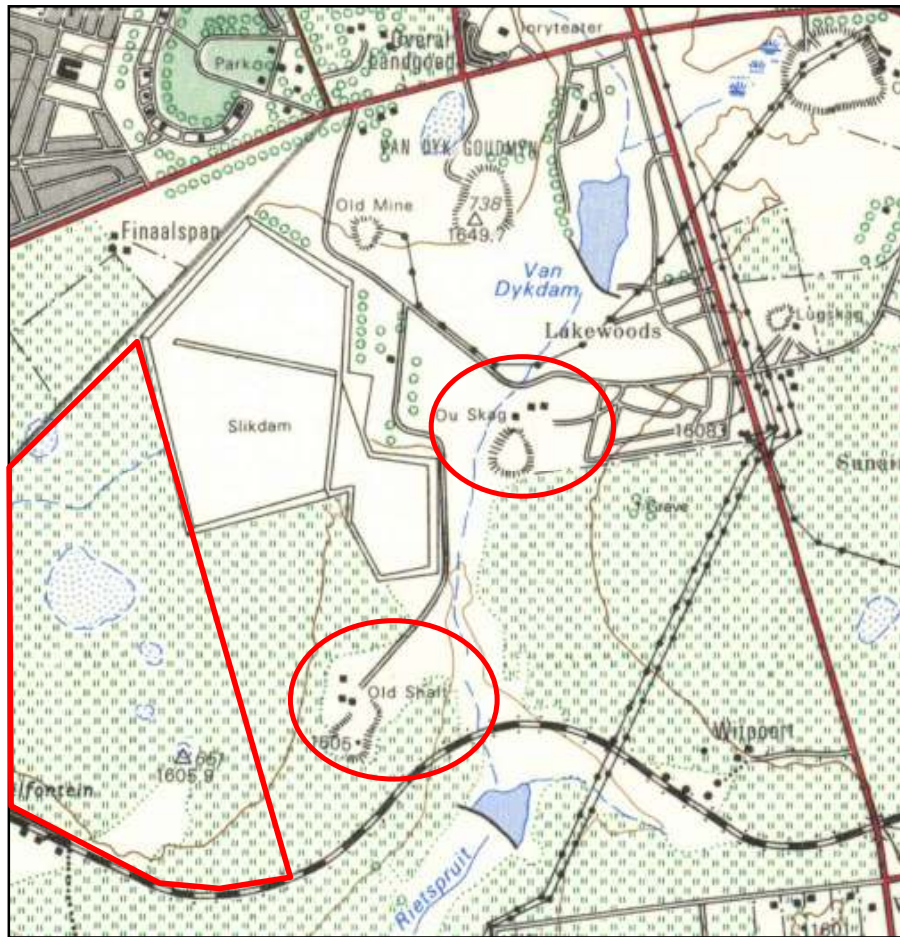


Figure 2:1:50 000 Topographical Map titled “SPRINGS”, dated 1976.

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Early Farm Ownership History

The farm Witpoortje has held no less than six separate farm numbers, five of which were due to the reclassification of the farm into separate districts. The farm was first numbered 297, and at the time fell within the Heidelberg District. Thereafter the farm was positioned in the newly declared Witwatersrand District, at which time it held the number 162. In the following years it fell in the Boksburg (farm number 12), Benoni (farm number 14) and Brakpan Districts (farm number 2). At present it is numbered 117-IR.

Witpoortje was inspected 26 April 1862 by G. Marais. On 21 October 1864 it was transferred via government transfer to Christiaan Ernst Gerhardus Labuschagne. On 7 April 1879 the farm was transferred from C.E.G. Labuschagne to Frans Johannes van Dyk. It seems likely that the Van Dyk Proprietary (and later Consolidated) Mines derived their name from this early farm owner.

On 10 April 1879 a half share of the farm was transferred from F.J. van Dyk to Hendrik Abraham Alberts. On 13 September 1887 an eighth share of the half share transferred to H.A. Alberts, was transferred to his son Hendrik Abraham Alberts jnr. On the same day, another eighth share was transferred from H.A. Alberts snr. to Andries Marthinus Steyn.

On 14 January 1889, the second half share of the farm was transferred from F.J. van Dyk to the Great Laxy Black Reef Gold Mining Company Limited. This transfer represented the first documented ownership of a portion of the farm by a gold mining company. On 21 October 1891 this half share was transferred back to F.J. van Dyk.

By Deed of Partition dated 2 December 1895 the farm was subdivided by the joint owners into a western and eastern portion. As the present study is situated on the western portion, only this section's transfer history will be outlined.

On 5 December 1895 the western portion of the farm, as partitioned on 2 December 1895, was transferred from the Joint Owners to Frans Johannes van Dyk. On 11 December 1896 a Portion of the Western Portion of the farm was transferred from F.J. van Dyk to Phoenix Gold Mines Limited. On the same day another Portion of the Western Portion of the farm was transferred from F.J. van Dyk to Thomas Ignatius Norton. Again, on the same day the portion transferred to T.I. Norton was also transferred to Phoenix Gold Mines Limited. Significant for the present study is the transfer of the Remaining Extent of the Western Portion of the farm from the Estate of Frans Johannes van Dyk to A. Goerz and Company Limited. This transfer took place on 10 June 1903. A. Goerz and Company later became Union Corporation, one of the bigger mining houses on the rand.

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On 18 November 1904 the Remaining Extent of the Western Portion was transferred from A. Goerz & Company Limited to the Van Dyk Proprietary Mines Limited. The price paid for the land was £ 325,000.

On 1 November 1911 Portion C of the Remaining Extent of the Western Portion of the farm was transferred from the Van Dyk Proprietary Mines Limited to James McIntosh and Clifford Redin Savory. On 16 June 1933 the same Portion C was transferred from J. McIntosh and C.R. Savory back to the Van Dyk Proprietary Mines. On 16 July 1934 the portion was transferred from Van Dyk Proprietary Mines Limited to the Van Dyk Consolidated Mines Limited. On the same day the Remainder of the Remaining Extent of the farm's Western Portion was also transferred from the Van Dyk Proprietary Mines to the Van Dyk Consolidated Mines (RAK 2830).

Mine History

In December 1887 Johan Ludwig Gauf discovered coal fields on the farm Vogelfontein (later to become Boksburg), and in 1888 fields of far better quality on the farm Weltevreden. The Transvaal Coal Trust Company was the first to start mining coal on Weltevreden, and in the whole area. In a short while numerous other coal mines sprang up. Coal was also mined in areas close to the present study area such as Apex Collieries on Schapensrust and Rand Collieries on Witpoortjie 12 (Nöthling, 1969).

The Transvaal Coal Trust Company was also the first in the area to apply for permission to prospect for gold. On 18 August 1898 the company received its mynpacht for Weltevreden. However, the Anglo-Boer War of 1899-1902 broke out soon after and all gold exploration activities were ceased for the next three years. At the end of the war in 1902, the Transvaal Coal Trust Company gave their right to prospect for gold over to the company Brakpan Mines Ltd (Nöthling, 1969). Shortly thereafter, on 18 August 1904, Van Dyk Proprietary Mines Limited registered their mynpacht on the farm Witpoortje 117-IR. The mynpacht was numbered 523, and allowed the company to start prospecting and mining for gold.

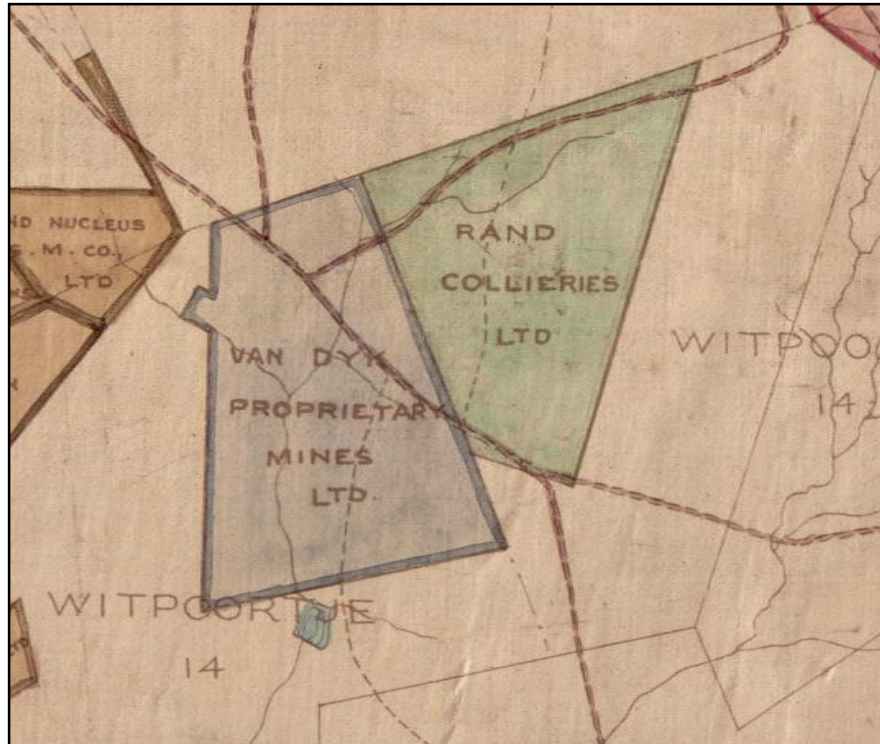


Figure 3 :Mynpacht 523 is shaded in blue on this 1927 map (National Archives, Maps, 1/91)

The focus of the company during these early years is best described in the words of the Beacon Inspector (a Mr. Cussons) who visited the mynpacht area on 11 May 1906. In his report Cussons indicated that Van Dyk Mines was “...*vigorously developing the mynpacht and has sunk two shafts...*” (MMB, 53, DRK607/06). These two shafts were described as being 650 and 700 feet deep respectively. According to the report of the Government Mining Engineer of the mines and mining activities on the Far East Rand (Ampt Pubs SRP, 6/161, UG49-1925), shaft sinking commenced in June 1905 for both Shaft no. 1 and Shaft No. 2. The report adds that Shaft No. 1 reached the Main Reef by the end of 1906 at a depth of 1,550 feet. By the same time Shaft No. 2 was at a depth of 1,057 feet and had not yet reached the Main Reef.

Mostly all of the gold mining activities on the mine up to the Van Dyk Proprietary Mines' closure in October 1910 centred on the two mine shafts. This becomes quite evident when one reads the causes of death to the Chinese mineworkers who were working here during this period. On 22 February 1906 a worker by the name of Shan Je Shing was struck by the foot of a pump which came loose and fell down one of the mine's shafts. On 3 May 1906, another Chinese worker by the name of Mai Ti-Hai was killed when a piece of timber fell down one of the mine shafts onto his head. A third example is Ching Yu-Jen who lost his footing and fell down one of the Van Dyk mine shafts during April 1906 (FLD, 99, 13/29).

Apart from the sinking of mineshafts, prospecting of the property also took place (MMB, 53, DRK607/06).

In October 1910 all activities on the mine ceased (De Villiers, 1972). The cessation of work on the mine was due to a lack of funds. At the time of its closure, the mine's activities had not reached the crushing stage yet. This means that when the mine closed down in 1910 no gold had been produced.

For the next 25 years no gold mining activities took place. On 16 July 1934 the portion of land was transferred from Van Dyk Proprietary Mines Limited to the Van Dyk Consolidated Mines Limited. In the same year the newly formed Van Dyk Consolidated Mines continued their activities on the property. According to De Villiers (1972:112) when the *"...shaft was dewatered after 25 years everything was found just as it had been left, including a Chinese latrine, though the Hessian curtains soon deteriorated on exposure to the air."* (De Villiers, 1972:112).

A short time later, in 1938, Van Dyk started milling (De Villiers, 1972). This heralded in the first production of gold on the mine.

The available evidence suggest that the second phase of gold mining operations on the land starting in 1934 was by far a more intensive form of gold mining than what took place before the closure of the mine in October 1910. Gold was produced for the first time, and numerous buildings were constructed, including a massive mine compound near No. 1 Shaft, a smaller compound near No. 2 Shaft, a number of slimes dams, married staff housing etc.

Black Concentration Camps

A Archival Study (Birkholtz 2007) conducted on the farm Witpoortje 117-IR to determine the presence of black concentration camps on farm concluded that based on the available historical evidence no black concentration camps were situated within the study area.

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Wits Archaeological Data Base

Fourteen Heritage significant sites are recorded on the farm Witpoortjie 117 IR. These sites range from Middle Stone Age sites, cemeteries, historic houses and historic mining activities. None of these sites are within the present study area.

5.3 Probability of occurrence of sites

From the above information it is clear that a medium possibility of the occurrence of cultural heritage sites could be expected in the study area.

A. PALAEOONTOLOGICAL LANDSCAPE

CONTEXT

Fossil remains. Such resources are typically found in specific geographical areas, e.g. the Karoo and are embedded in ancient rock and limestone/calcrete formations. Exposed by road cuttings and quarry excavation: *Unknown*

B. ARCHAEOLOGICAL LANDSCAPE

CONTEXT

NOTE: *Archaeology is the study of human material and remains (by definition) and is not restricted in any formal way as being below the ground surface.*

Archaeological remains dating to the following periods can be expected with in the study area:

Stone Age finds

- ESA: *Low Probability*
- MSA: *Medium Probability*
- LSA: *Low Probability*
- LSA –Herder: *Low Probability*

Iron Age Finds

- EIA: *Low Probability*
- MIA: *Low Probability*
- LIA: *Low Probability*

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Historical finds

- Historical period: *Medium - High Probability*
- *Historical dumps: Medium - High Probability*
- *Structural remains: Medium - High Probability*

Military Finds

- *Battle and military sites: Low Probability*

Burial/Cemeteries

- *Burials over 100 years: Medium Probability*
- *Burials younger than 60 years: Medium - High Probability*

Subsurface excavations including ground levelling, landscaping, and foundation preparation can expose any number of these.

6. SITES OF SIGNIFICANCE

The study area is highly disturbed by agricultural activities in the past that would have destroyed any traces of heritage sites. Several stone cairns are found throughout the site that is a result of field clearing for agricultural purposes. At present the site is open veldt with no inhabitants. A heap of sandstone rubble at coordinates S26° 17'17.2"S and E28° 17'19.1" marks the demolished remains of a historical house or where rubble have been dumped.



Figure 4: Stone heaps from field clearing



Figure 5: Sandstone remnants of a demolished house



Figure 4: General Site conditions

7. ASSUMPTIONS AND LIMITATIONS

Due to the nature of cultural remains that occur, in most cases, below surface, the possibility remains that some cultural remains may not have been discovered during the survey. Low ground visibility is present on parts of the study area due to exceptional high vegetation growth where in other places ground works might have been dumped on heritage sites and the possibility of the occurrence of unmarked graves can not be excluded. Although Wits Heritage Contracts unit surveyed the area as thorough as possible, it is incumbent upon the developer to inform the relevant heritage agency should further cultural remains be unearthed or laid open during the process of development.

8. ASSESSMENT AND RECOMMENDATIONS

A locality map is provided in **Annexure A**

The study area was extensively cultivated in the past; this activity would have destroyed any surface signs of heritage significant sites. The farm Witpoortjie 117 IR has a rich mine history, however none of these activities occurred on the current portion that forms part of this study.

No sites of heritage significance were found during the survey from a Heritage point of view there is no reason why the development can not commence.

General

Low ground visibility is present on portions of the site due to high vegetation growth and the possibility of the occurrence of unmarked or informal graves and subsurface finds can not be excluded. If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

.10. LIST OF PREPARES

Jaco van der Walt, BA (Hon) Archaeology (Wits)

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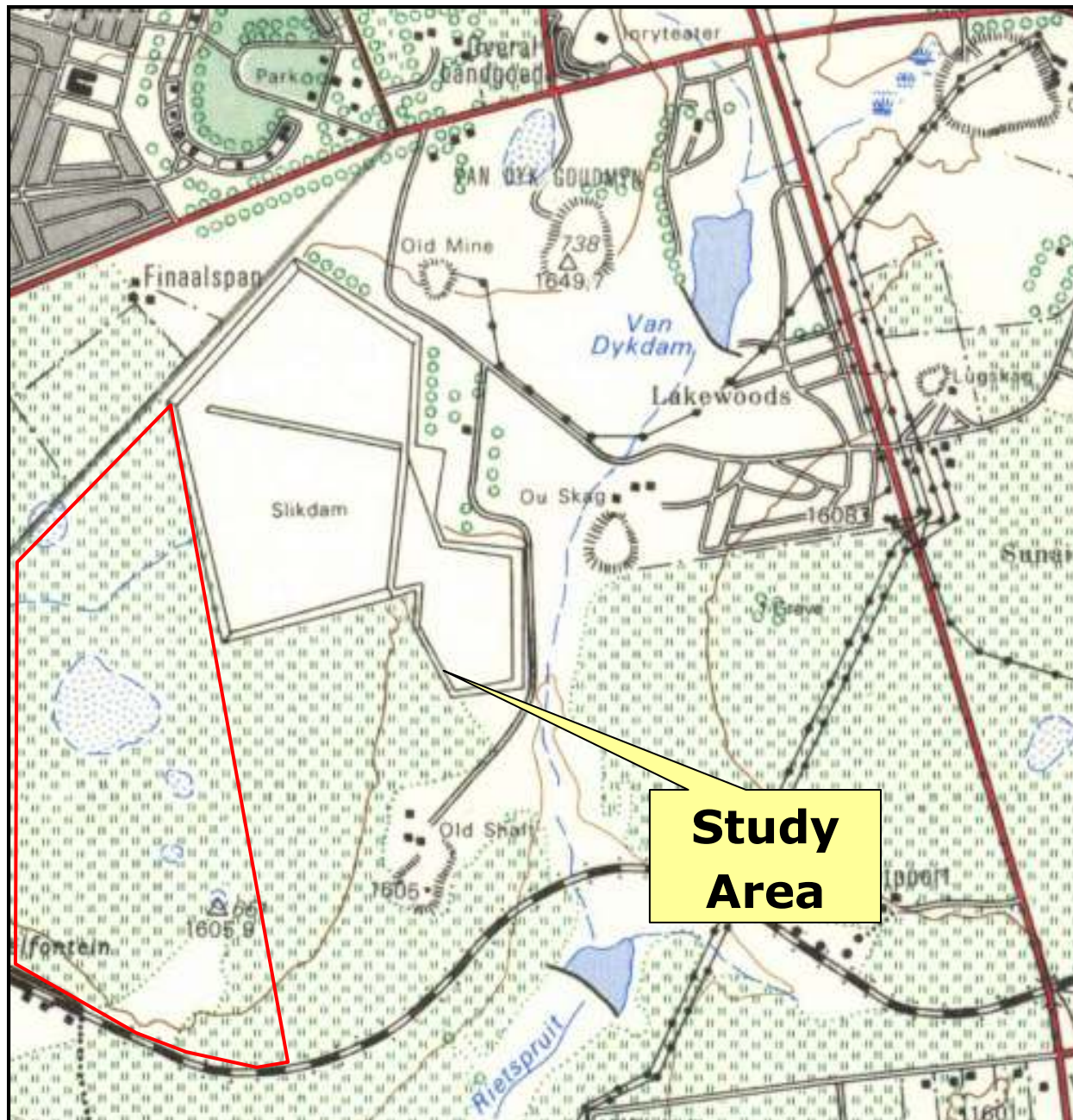
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ANNEXURE A:

Locality Map

HELDERWYK EXT - AIA



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