

ARCHAEOLOGICAL IMPACT ASSESSMENT

for

**Assmang Limited – Black
Rock Mine Operations**

on

**Erf 5529, a portion of Erf 01
Kuruman**

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September 2013 (Amended April 2014)

Executive Summary

The authors were appointed by Environmental Assurance (Pty) Ltd to undertake a Phase 1 Archaeological study for Assmang Limited on Erf 5529, a portion of Erf 01 Kuruman. Kuruman is located about 56 km southeast of Hotazel and 53 km Northeast of Kathu in the Northern Cape Province. The aim of the study is to determine the scope of archaeological resources which could be impacted on by the proposed construction of a Technical Training College on Erf 5529 Kuruman.

During the pedestrian survey on the demarcated section of Erf 5529 Kuruman, no sites of heritage importance were observed.

Although no sites of heritage importance were observed on the demarcated study area, the significance of the larger historical and pre-historical landscape must be stressed as the archaeological site of Wonderwerk Cave, which is classified as a provincial heritage site, is located in the Kuruman district.

Erf 5529, a portion of Erf 01 Kuruman

Due to no visible material remains pertaining to heritage resources development may continue on the specific section. Should skeletal remains be exposed during development and construction phases, all activities must be suspended and the relevant heritage resources authority contacted (See National Heritage and Resources Act, 25 of 1999 section 36 (6)). Also, should culturally significant material be discovered during the course of development and construction phases, all activities must be suspended pending further investigation by a qualified archaeologist.

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1. Project Background

1.1 Introduction

Environmental Assurance (Pty) Ltd appointed the authors to undertake an Archaeological study for Assmang Ltd on Erf 5529, a portion of Erf 01 Kuruman, Northern Cape Province (**Figures 1 & 2**). The purpose of this study is to examine the demarcated section in order to determine if any archaeological resources of heritage value will be impacted on by the proposed construction of the Kuruman Technical Training College, as well as to archaeologically contextualise the general study area. The aim of this report is to provide the developer with information regarding the location of heritage resources on the section demarcated for development.

In the following report, we discuss the implication for development on the demarcated section of Erf 5529 Kuruman with regard to heritage resources. The legislation section included serves as a guide towards the effective identification and protection of heritage resources and will apply to any such material unearthed during development and construction phases on the demarcated study area.

1.2 Legislation

The South African Heritage Resources Agency (SAHRA) aims to conserve and control the management, research, alteration and destruction of cultural resources of South Africa and to prosecute if necessary. It is therefore crucially important to adhere to heritage resource legislation contained in the Government Gazette of the Republic of South Africa (Act No.25 of 1999), as many heritage sites are threatened daily by development. Conservation legislation requires an impact assessment report to be submitted for development authorisation that must include an AIA if triggered.

AIAs should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources that might occur in areas of development and (b) make recommendations for protection or mitigation of the impact of the sites.

1.2.1 The EIA and AIA processes

Phase 1 Archaeological Impact Assessments generally involve the identification of sites during a field survey with assessment of their significance, the possible impact development might have and relevant recommendations.

All Archaeological Impact Assessment reports should include:

- a. Location of the sites that are found;
- b. Short descriptions of the characteristics of each site;

- c. Short assessments of how important each site is, indicating which should be conserved and which mitigated;
- d. Assessments of the potential impact of the development on the site(s);
- e. In some cases a shovel test, to establish the extent of a site, or collection of material, to identify the associations of the site, may be necessary (a pre-arranged SAHRA permit is required); and
- f. Recommendations for conservation or mitigation.

This AIA report is intended to inform the client about the legislative protection of heritage resources and their significance and make appropriate recommendations. It is essential to also provide the heritage authority with sufficient information about the sites to enable the authority to assess with confidence:

- a. Whether or not it has objections to a development;
- b. What the conditions are upon which such development might proceed;
- c. Which sites require permits for mitigation or destruction;
- d. Which sites require mitigation and what this should comprise;
- e. Whether sites must be conserved and what alternatives can be proposed to relocate the development in such a way as to conserve other sites; and
- f. What measures should or could be put in place to protect the sites which should be conserved.

When a Phase 1 AIA is part of an EIA, wider issues such as public consultation and assessment of the spatial and visual impacts of the development may be undertaken as part of the general study and may not be required from the archaeologist. If, however, the Phase 1 project forms a major component of an AIA it will be necessary to ensure that the study addresses such issues and complies with Section 38 of the National Heritage Resources Act.

1.2.2 Legislation regarding archaeology and heritage sites

National Heritage Resource Act No.25 of April 1999

Buildings are among the most enduring features of human occupation, and this definition therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Farming Community settlements. The Act identifies heritage objects as:

- 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;
- any other prescribed category.

With regards to activities and work on archaeological and heritage sites this Act 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.” (34. [1] 1999:58)

and

“No person may, without a permit issued by the responsible heritage resources authority:

- (a) *destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (b) *destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (c) *trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or*

- (d) *bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.*"(35. [4] 1999:58)

and

"No person may, without a permit issued by SAHRA or a provincial heritage resources authority:

- (a) *destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (b) *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;*
- (c) *bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals.*" (36. [3] 1999:60)

On the development of any area the gazette states that:

"...any person who intends to undertake a development categorised as:

- (a) *the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) *the construction of a bridge or similar structure exceeding 50m in length;*
- (c) *any development or other activity which will change the character of a site-*
- i. exceeding 5000m² in extent; or*
 - ii. involving three or more existing erven or subdivisions thereof; or*
 - iii. involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
 - iv. the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*
- (d) *the re-zoning of a site exceeding 10000m² in extent; or*
- (e) *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the*

responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.” (38. [1] 1999:62-64)

and

“The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

- (a) The identification and mapping of all heritage resources in the area affected;*
- (b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;*
- (c) an assessment of the impact of the development on such heritage resources;*
- (d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;*
- (e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
- (f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and*
- (g) plans for mitigation of any adverse effects during and after the completion of the proposed development.”*
(38. [3] 1999:64)

Human Tissue Act and Ordinance 7 of 1925

The Human Tissues Act (65 of 1983) and Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities. Graves 60 years or older fall under the jurisdiction of the National Heritage Resources Act as well as the Human Tissues Act, 1983.

2. Study Area and Project Description

Kuruman is located in the Northern Cape Province and lies near the north-eastern border with the North West Province. Kuruman falls within the Ga-Segonyana municipality. Kathu is located about 53 km southwest of Kuruman and Hotazel roughly 56 km to the northwest. The vegetation in the area is classified as Kuruman Thornveld and belongs to the Eastern Kalahari Bioregion. The underlying geology is made up of dolomite and chert formations and form part of the Campbell Rand Subgroup, Ghaap Group and Transvaal Supergroup. Generally the soil is not suitable for arable agriculture, but may accommodate forestry and grazing where the climate permits. Annual rainfall is about 266 mm and is therefore classified as a semi-arid environment. Average maximum temperatures vary between 17.5°C in June and 32.6°C in January while the average minimum temperature during Winter is 0°C.

The study area is located towards the eastern section of the town of Kuruman, about 1.6 km east of the CBD. The N14 forms the northern border of the study area and the unnamed road to the Kuruman Golf Club the western border. A non-perennial river is located about 270 m east of Erf 5529 Kuruman, while tributaries to the Kuruman River flow further to the east and west. Three sets of power lines also cross the study area: Two sets run in an east-west direction roughly parallel to each other while a third is located towards the eastern boundary of the site and runs in a north-south direction. In addition to the power lines, two sets of telephone lines cross the study area. The first runs along the northern boundary of the site and second along the western boundary.

In recent times the mining sector expanded significantly in the Northern Cape. This expansion led to the need for more qualified trade skills personnel. The current expansion of the mining sector, however, resulted in a shortage of such qualified personnel. The current training facilities are located in the major centres of South Africa, and consequently far from where the skills are needed. This led to the collaboration of Assmang Ltd with Artisan Training Institute (ATI) to establish a Technical Training College in Kuruman, a location close to where several of trainees and potential students reside which is also close to where personnel is needed (Lesedi Architects 2014).

The proposed project consists of the construction of a Technical Training College on a section of Erf 5529 Kuruman and is to be completed within 1 year of registration. The size of Erf 5529 is 15 Ha. The demarcated section selected for surveying in this study is roughly 25 Ha in size. Of this demarcated section only 3 Ha will be developed. A number of buildings will consist of a light steel framework in combination with brickwork and steel panels. Additionally, student accommodation on site will mainly consist of small brickwork buildings. The Technical Training College will consist of parking facilities, workshops, a recreational area with a swimming pool, a student enrolment / administrative area, residential units, dining facility, a media and computer area, relevant services (water, sanitation and electrical), and relevant road and storm water infrastructure. The main

focal point of the development will be the corner where the N14 and an unnamed road leading to the Kuruman Golf Club intersect. Access to the site will be from unnamed road on the western side. Erf 5529 is bordered by council owned land to the east and south.

Table 1: Property name & coordinates

Property	Portion	Map Reference (1:50 000)	Coordinates
Kuruman	5529	2723AD	S: -27.460815 E: 23.449347

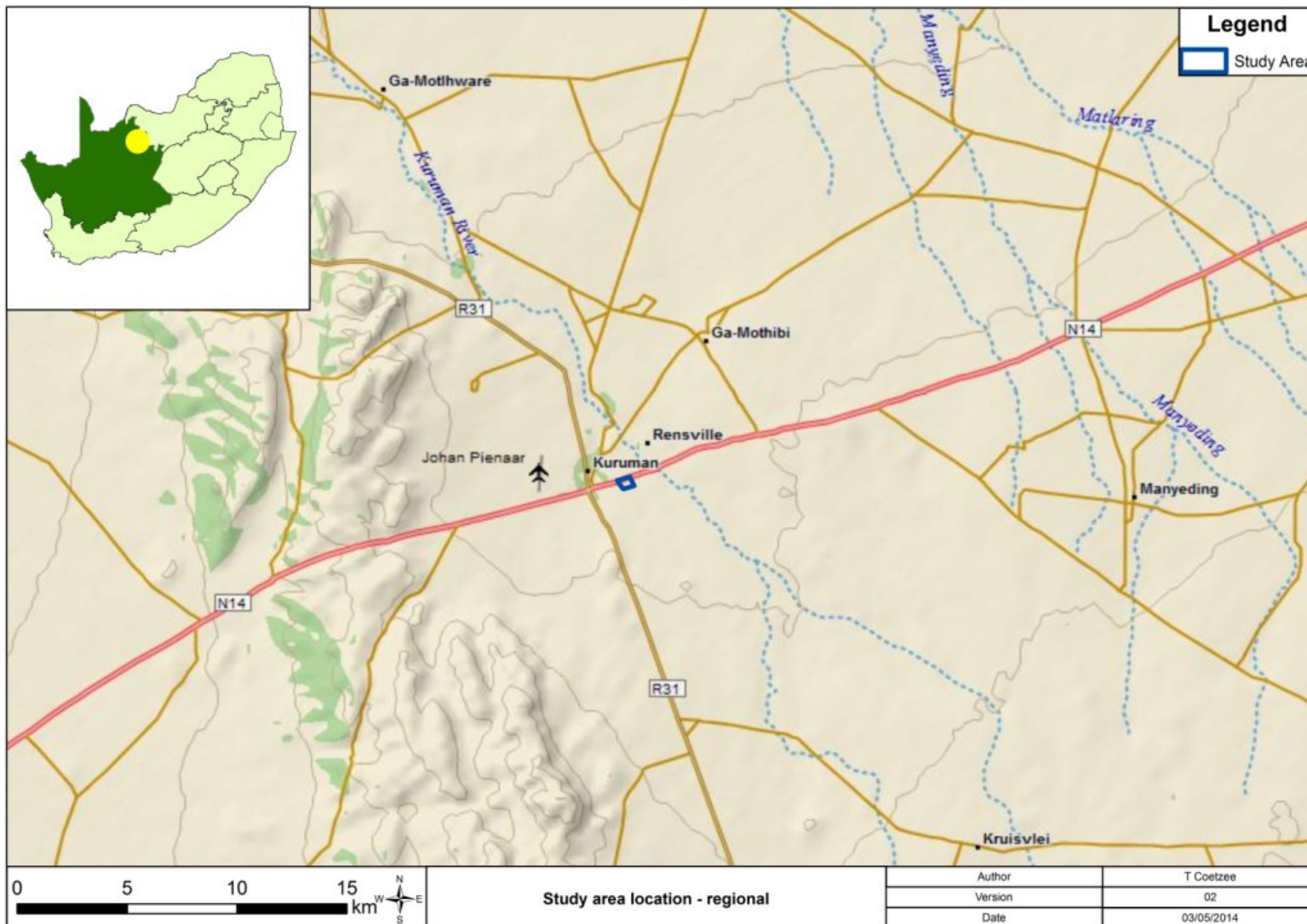


Figure 1: Regional location of study area.

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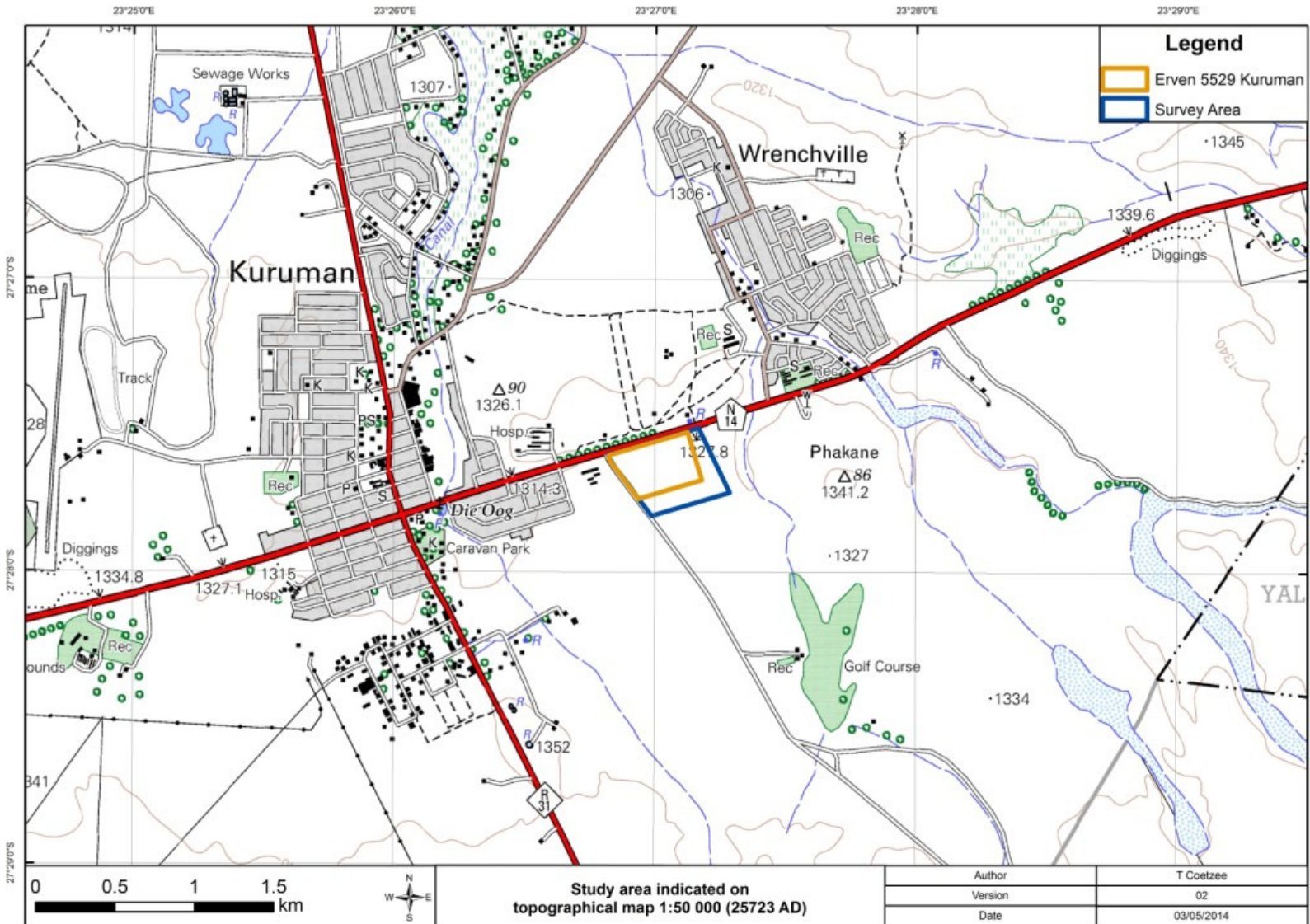


Figure 2: Segment of SA 1: 50 000 2723 AD indicating the study area.

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2.1 Archaeological Background

Southern African archaeology is broadly divided into the Early, Middle and Later Stone Ages; Early, Middle and Later Iron Ages; and Historical or Colonial Periods. This section of the report provides a general background to archaeology in South Africa and also focuses on more site specific elements where relevant.

2.1.1 General Archaeological Context

The Stone Age

The earliest stone tool industry, the Oldowan, was developed by early human ancestors which were the earliest members of the genus *Homo*, such as *Homo habilis*, around 2.6 million years ago. It comprises tools such as cobble cores and pebble choppers (Toth & Schick 2007). Archaeologists suggest these stone tools are the earliest direct evidence for culture in southern Africa (Clarke & Kuman 2000). The advent of culture indicates the advent of more cognitively modern hominins (Mitchell 2002: 56, 57)

The Acheulean industry completely replaced the Oldowan industry. The Acheulean industry was first developed by *Homo ergaster* between 1.8 to 1.65 million years ago and lasted until around 300 000 years ago. Archaeological evidence from this period is also found at Swartkrans, Kromdraai and Sterkfontein. The most typical tools of the ESA are handaxes, cleavers, choppers and spheroids. Although hominins seemingly used handaxes often, scholars disagree about their use. There are no indications of hafting, and some artefacts are far too large for it. Hominins likely used choppers and scrapers for skinning and butchering scavenged animals and often obtained sharp ended sticks for digging up edible roots. Presumably, early humans used wooden spears as early as 5 million years ago to hunt small animals.

Middle Stone Age artefacts started appearing about 250 000 years ago and replaced the larger Early Stone Age bifaces, handaxes and cleavers with smaller flake industries consisting of scrapers, points and blades. These artefacts roughly fall in the 40-100 mm size range and were, in some cases, attached to handles, indicating a significant technical advance. The first *Homo sapiens* species also emerged during this period. Associated sites are Klasies River Mouth, Blombos Cave and Border Cave (Deacon & Deacon 1999).

Although the transition from the Middle Stone Age to the Later Stone Age did not occur simultaneously across the whole of southern Africa, the Later Stone Age ranges from about 20 000 to 2000 years ago. Stone tools from this period are generally smaller, but were used to do the same job as those from previous periods; only in a different, more efficient way. The Later Stone Age is associated with: rock art, smaller stone tools (microliths), bows and arrows, bored stones, grooved stones, polished bone tools, earthenware pottery and beads. Examples of Later Stone Age sites are Nelson Bay Cave, Rose Cottage Cave and Boomplaas Cave (Deacon & Deacon 1999).

The Iron Age & Historical Period

The Early Iron Age marks the movement of farming communities into South Africa in the first millennium AD, or around 2500 years ago (Mitchell 2002:259, 260). These groups were agro-pastoralist communities that settled in the vicinity of water in order to provide subsistence for their cattle and crops. Archaeological evidence from Early Iron Age sites is mostly artefacts in the form of ceramic assemblages. The origins and archaeological identities of this period are largely based upon ceramic typologies. Some scholars classify Early Iron Age ceramic traditions into different “streams” or “trends” in pot types and decoration, which emerged over time in southern Africa. These “streams” are identified as the Kwale Branch (east), the Nkope Branch (central) and the Kalundu Branch (west). Early Iron Age ceramics typically display features such as large and prominent inverted rims, large neck areas and fine elaborate decorations. This period continued until the end of the first millennium AD (Mitchell 2002; Huffman 2007). Some well-known Early Iron Age sites include the Lydenburg Heads in Mpumalanga, Happy Rest in the Limpopo Province and Mzonjani in Kwa-Zulu Natal.

The Middle Iron Age roughly stretches from AD 900 to 1300 and marks the origins of the Zimbabwe culture. During this period cattle herding appeared to play an increasingly important role in society. However, it was proved that cattle remained an important source of wealth throughout the Iron Age. An important shift in the Iron Age of southern Africa took place in the Shashe-Limpopo basin during this period, namely the development of class distinction and sacred leadership. The Zimbabwe culture can be divided into three periods based on certain capitals. Mapungubwe, the first period, dates from AD 1220 to 1300, Great Zimbabwe from AD 1300 to 1450, and Khami from AD 1450 to 1820 (Huffman 2007: 361, 362).

The Later Iron Age roughly dates from AD 1300 to 1840. It is generally accepted that Great Zimbabwe replaced Mapungubwe. Some characteristics include a greater focus on economic growth and the increased importance of trade. Specialisation in terms of natural resources also started to play a role, as can be seen from the distribution of iron slag which tend to occur only in certain localities compared to a wide distribution during earlier times. It was also during the Later Iron Age that different areas of South Africa were populated, such as the interior of KwaZulu Natal, the Free State, the Gauteng Highveld and the Transkei. Another characteristic is the increased use of stone as building material. Some artefacts associated with this period are knife-blades, hoes, adzes, awls, other metal objects as well as bone tools and grinding stones.

The Historical period mainly deals with Europe’s discovery, settlement and impact on southern Africa. Some topics covered by the Historical period include Dutch settlement in the Western Cape, early mission stations, Voortrekker routes and the Anglo Boer War.

2.1.2 Kuruman Archaeo-History

Worth mentioning is the fact that Wonderwerk Cave, a provincial heritage site, is located in the Kuruman-Danielskuil district. The cave bears evidence of continued human activity from 10 000 years ago (Snyman 199: 13). Also, the remains of the extinct Cape horse and giant hartebeest were discovered (Mitchell 2002: 140). Wonderwerk Cave is also known for the abundant material culture and include unusual finds such as stone rings, chert pendants and engraved stones (Mitchell 2002: 184).

The Kuruman area has a rich history spanning from the Early Stone Age to the Historical times. Below is a brief account of earlier events in the Kuruman area.

Hunter gatherer activities in the Kuruman area were present until the 1880's and even after that in the area west of the town. Several rock engravings in the Kuruman valley bear testimony to their presence in the area. Due to increased population hunter gatherer communities moved in a western and north-western direction in order to be able to continue exploiting game. Contact with early Batswana communities also resulted in the integration of the two groups. It was only during the last 500 years that the Batswana entered the northern regions of the Northern Cape. Possible factors affecting this might have been unfavourable environmental conditions such as heat, drought and poor soils in terms of agriculture. However, it appears that the Tlharo were the first Batswana group to arrive in the Kuruman district. Accordingly the Batswana under Notwane clashed with Kudumane's hunter gatherer community near the area where the town is today. After Notwane defeated Kudumane they explored in the direction of present day Postmasburg, Danielskuil and Campbell, where he clashed with the Batlhaping (Snyman 1992: 15-16).

During the mid 18th Century the Batlhaping moved from the Taung area first in a southern direction and later in a western direction and settled at Nokaneng, south of Olifantshoek. Towards the end of the 18th Century the Batlhaping under Molehabangwe established a loose confederation. Around 1770 the Korana crossed the Orange River and made contact with the Batlhaping. Initial interaction was peaceful and both groups benefitted from trade activities. Accusations of cattle theft, however, ended peaceful relations. Due to additional conflict with Korana groups, the Batlhaping first moved to Kathu and from there to Ga-Mopedi near the Kuruman River. With the first colonial contact in 1801 the area was in a rather fragile state as Korana and Griqua groups exerted additional pressure on existing communities (Snyman 1992: 16).

A few European explorers ventured to these areas as well. Two expeditions worth mentioning are that of Lichtenstein in 1805 and that of Andrew Smith in 1835. After Lichtenstein reached the Kuruman River where they met Tswana speaking people they turned in a southern direction towards the Orange River. It is noted that Lichtenstein's party made contact with Muliawang's capital consisting of about 600 houses near the Kuruman River (PGS 2010).

Following the first colonial contact with the area, colonials in the Cape thrived to establish a cattle trade with the Batlhaping. The Batswana also caught the attention of missionaries such as Jan Matthys Kok and William Edwards who accompanied the expedition led by P.J. Truter and William Somerville to the Batlhaping. This first mission expedition was unsuccessful, but follow-up expeditions around 1817 succeeded. Robert Moffat succeeded James Read at the mission station in 1821 and moved the mission station to its present location in 1824 (Snyman 1992: 17-25). After 49 years at Kuruman, Moffat left the town in 1870 (Snyman 1992: 42).

During the mid 19th Century Kuruman served as the gate to the interior of South Africa and was regarded as a hub for hunting expeditions, trade, missionary work and exploration. With the discovery of diamonds in 1867 near Hopetown and gold in 1868 in Matabeleland, however, political instability in the Kuruman district increased. The development of Kimberly deprived Kuruman of its strategic position (Snyman 1992: 42-43).

Evidence regarding white settlement in the Kuruman district suggests brief occupation during the latter part of the 19th century. Permanent settlement, however, only followed around 1907 and 1908 when a period of drought in the then Cape Colony encouraged relocation (Smith 1966 cited in PGS 2010: 25).

3. Methodology

We conducted archaeological reconnaissance of the study area through a systematic pedestrian site survey. The transects were spaced roughly 50 m apart and possible sites were recorded via GPS (Global Positioning System) location and photographic record (Table 2). Also, the site was inspected beforehand on Google as well as black and white aerial imagery in order to identify possible heritage remains (**Figure 9**). Due to the exact coordinates of the site boundary being unknown at the time of surveying, we expanded the survey to cover an area roughly 22 Ha larger than the area to be developed. We therefore conducted the survey on a 25 Ha section of Erf 5529 Kuruman, of which 3 Ha will be affected by development.

The reconnaissance of the area under investigation served a twofold purpose:

- To obtain an indication of heritage material found in the general area as well as to identify or locate archaeological sites on Erf 5529 Kuruman. This was done in order to establish a heritage context and to supplement background information that would benefit developers through identifying areas that are sensitive from a heritage perspective.
- All archaeological and historical events have spatial definitions in addition to their cultural and chronological context. Where applicable, spatial recording of these definitions were done by means of a handheld GPS during the site visit.

3.1 Sources of information

At all times during the survey we followed standard archaeological procedures for the observation of heritage resources. As most archaeological material occurs in single or multiple stratified layers beneath the soil surface, we paid special attention to disturbances; both man-made such as roads and clearings, and those made by natural agents such as burrowing animals and erosion. We recorded locations of archaeological material remains by means of a Garmin Oregon 550 GPS and photographed these sites as well as general conditions on the terrain with a Nikon D40 DSLR (Digital Single Lens Reflex) camera and an iPhone 5 camera.

We conducted a literature study, which incorporated previous work done in the region, in order to place the study area into context from a heritage perspective.

3.2 Limitations

The vegetation on the study area consists mainly thorn trees and shrubs (**Figures 3 - 5**); therefore, the general visibility was good during the time of surveying as there was little grass cover (September 2013).

It should be noted that a number of test pits of recent origin, although filled, were observed on the study area. Also, it appears that the study area is partially used for cattle grazing.



Figure 3: Environment in a northern direction along the western boundary of the study area



Figure 4: Environment in a southern direction along the western boundary of the study area



Figure 5: General environmental conditions on the study area

4. Archaeological and Historical Remains

4.1 Stone Age Remains

We found no Stone Age archaeological remains on Erf 5529 Kuruman. However, it should be mentioned that a study completed by Archaetnos Culture & Cultural Resource Consultants identified a small number of stone tools on Erf 2467 Kuruman (Pelser 2012: 21). Erf 2467 is located in close proximity to the Kuruman CBD and in a western direction of the study area. A significant section of erf 2467 was in a relatively pristine condition at the time of surveying. According to the study done on erf 2467 the stone tool flakes were recorded close to a dolomite outcrop. The stone tools accordingly date to between the MSA and LSA. It should be noted that the author recorded a low significance and recommended that no mitigation is required. Another investigation by Archaetnos Culture & Cultural Resource Consultants on erf 83, located towards the northern section of the town, revealed no stone tool artefacts (Pelser 2012).

Although we located no Stone Age archaeological remains, the area is known for a relatively high frequency of Stone Age artefacts. These artefacts are often associated with rocky outcrops or water sources. Special attention should therefore be paid during construction or development phases in the vicinity of these areas. **Figures 6 - 8** below are examples of stone tools often associated with the Early, Middle and Later Stone Age of southern Africa.

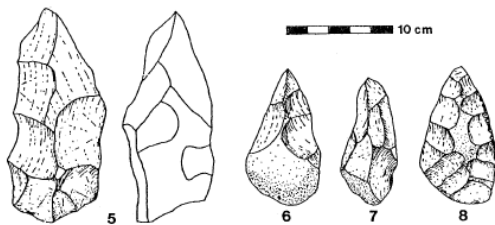


Figure 6: ESA artefacts from Sterkfontein (Volman 1984)

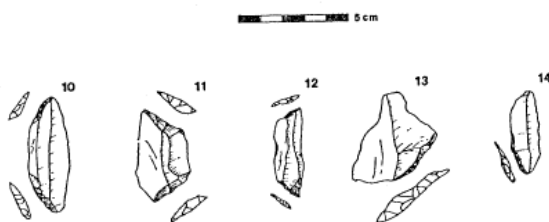


Figure 7: MSA artefacts from Howiesons Poort (Volman 1984)



Figure 8: LSA scrapers (Klein 1984)

4.2 Iron Age Farmer Remains

We found no Iron Age Farmer archaeological remains on Erf 5529 Kuruman.

4.3 Historical Remains

We found no Historical archaeological remains on Erf 5529 Kuruman. The study conducted by Archaetnos Culture & Cultural Resource Consultants on Erf 83 revealed a historical homestead with associated out buildings, as well as part of the Kuruman West irrigation canal. The finds were classified as a low to medium significance with the following mitigation: "Detailed historical research, assessment of homestead, mapping and drawing. Restoration if required. Management plan" (Pelser 2012: 16, 17). A detailed historical research and assessment by an architectural historian of the homestead was recommended by Archaetnos Culture & Cultural Resource Consultants.

4.4 Recent remains

We located one structure (**Figures 10 & 11**) of modern origin in the north-eastern corner of the surveyed area (Col 1). The structure, however, falls outside the boundary of portion 5529 Kuruman. The brick building is rectangular and roughly measures 20 m X 10 m. According to the Environmental Officer of Assmang Ltd this building was built in the early 2000's and was intended to be a liquor store. The structure is therefore not protected under the National Heritage Resources Act, 25 of 1999. The structure falls outside of the area demarcated for development and will not be impacted on.

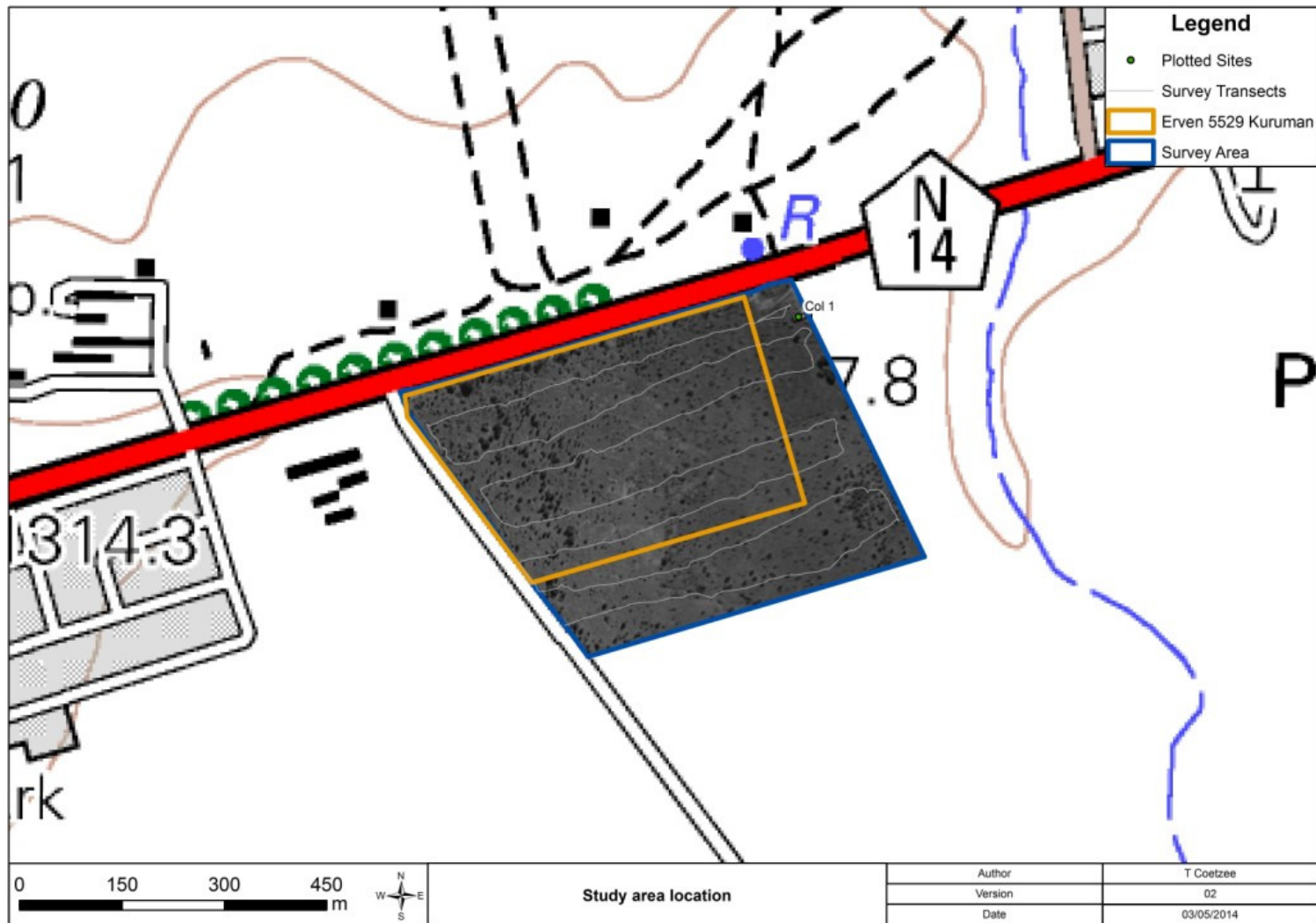


Figure9: Study area with survey transects

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Table 2: Heritage site and POI coordinates

Site / POI Name	Longitude	Latitude
Col 1	23.452956	-27.458979



Figure 10: Recent structure on the study area viewed from the southeast (Col 1)



Figure11: Recent structure on the study area viewed from the southwest (Col 1)

4.5 Graves

No graves were observed during the survey.

5. Evaluation

The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences.

A fundamental aspect in the conservation of a heritage resource relates to whether the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. There are many aspects that must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and if appropriate mitigated in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed.

In light of this the following apply in terms of the evaluation of the area demarcated for development. Water sources generally play an important role in the discovery of Stone Age archaeological material as subsurface layers are often exposed through water action. The reason for not observing any Stone Age archaeological material might therefore relate to the absence of such conditions on the area demarcated for development. Although the study area is located relatively close to a non-perennial stream (+- 300 m) it must be taken into consideration that a much larger river, the Kuruman River, flows roughly two kilometres from study area. The stream canal of this river is therefore much larger and one can therefore expect to find a higher frequency stone tools in the vicinity of the Kuruman River. Although stone tools are relatively abundant in the general area, the study area is relatively small. This significantly decreases the possibility of locating high concentrations of Stone Age artefacts. It should also be noted that the AIA conducted by Archaeos Culture & Cultural Resource Consultants on erven 83 and 2467 in Kuruman revealed a few scattered Stone Age artefacts on erf 2467 and no Stone Age remains on erf 83. Therefore a lower concentration of Stone Age artefacts may therefore be present in the surrounding areas. Also, the two sets of telephone lines and three sets of power lines crossing the study area indicate a relatively disturbed area since it is likely that the servitudes of the telephone and power lines were cleared during time of construction. The continued maintenance of the servitudes of these lines may also influence the presence of Archaeological artefacts.

5.1 Field Rating

All sites should include a field rating in order to comply with section 38 of the National Heritage Resources Act (Act No. 25 of 1999). The field rating and classification in this report is prescribed by SAHRA.

Table 3: Field Rating

Rating	Field Rating/Grade	Significance	Recommendation
National	Grade 1		National site
Provincial	Grade 2		Provincial site
Local	Grade 3 A	High	Mitigation not advised
Local	Grade 3 B	High	Part of site should be retained
General protection A	4 A	High/Medium	Mitigate site
General Protection B	4 B	Medium	Record site
General Protection C	4 C	Low	No recording necessary

Site: Col 1

The modern structure observed in the vicinity of the study area does not exceed 60 years and is therefore not protected under the National Heritage Resources Act, 25 of 1999. For this reason the site was not rated.

6. Statement of Significance & Recommendations

6.1 Statement of significance

Erf 5529 Kuruman

We observed no archaeological material of heritage significance on Erf 5529 Kuruman. A building intended to be a liquor store (Col 1) built in the early 2000's, however, was observed. It is unlikely that the building is important from a heritage perspective. It should also be noted that this building is located outside the boundary of Erf 5529 Kuruman. However, it should be kept in mind that the Kuruman district bears a rich and longstanding history which includes Wonderwerk Cave towards Danielskuil, as well as the origin of the town itself in 1887.

6.2 Recommendations

The prehistorical and historical landscape around Kuruman infers a rich and diverse cultural horizon. Therefore, the following recommendations are made in terms with the National Heritage Resources Act (25 of 1999) in order to avoid the destruction of heritage remains in areas demarcated for development:

- Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the development and construction phases, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed during development and construction phases, all activities must be suspended and the relevant heritage resources authority contacted (See National Heritage Resources Act, 25 of 1999 section 36 (6)).
- Should the need arise to expand the development beyond the demarcated areas mentioned in this study, the following applies: a qualified archaeologist must conduct a full Phase 1 Archaeological Impact Assessment (AIA) on the sections beyond the demarcated areas which will be affected by the expansion, in order to determine the occurrence and extent of any archaeological sites and the impact development might have on these sites.
- We did not observe any heritage material on Erf 5529 Kuruman. Therefore, from a heritage point of view, development may proceed on the demarcated section, subject to the abovementioned conditions and recommendations.

7. Addendum: Terminology

Archaeology:

The study of the human past through its material remains.

Artefact:

Any portable object used, modified, or made by humans; e.g. pottery and metal objects.

Assemblage:

A group of artefacts occurring together at a particular time and place, and representing the sum of human activities.

Context:

An artefact's context usually consist of its immediate *matrix* (the material surrounding it e.g. gravel, clay or sand), its *provenience* (horizontal and vertical position within the matrix), and its *association* with other artefacts (occurrence together with other archaeological remains, usually in the same matrix).

Cultural Resource Management (CRM):

The safeguarding of the archaeological heritage through the protection of sites and through salvage archaeology (rescue archaeology), generally within the framework of legislation designed to safeguard the past.

Excavation:

The principal method of data acquisition in archaeology, involving the systematic uncovering of archaeological remains through the removal of the deposits of soil and other material covering and accompanying it.

Feature:

An irremovable artefact; e.g. hearths or architectural elements.

Ground Reconnaissance:

A collective name for a wide variety of methods for identifying individual archaeological sites, including consultation of documentary sources, place-name evidence, local folklore, and legend, but primarily actual fieldwork.

Matrix:

The physical material within which artefacts is embedded or supported, i.e. the material surrounding it e.g. gravel, clay or sand.

Phase 1 Assessments:

Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.

Phase 2 Assessments:

In-depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required.

Sensitive:

Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

Site:

A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity.

Surface survey:

There are two kinds: (1) unsystematic and (2) systematic. The former involves field walking, i.e. scanning the ground along one's path and recording the location of artefacts and surface features. Systematic survey by comparison is less subjective and involves a grid system, such that the survey area is divided into sectors and these are walked ally, thus making the recording of finds more accurate.

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