

**PHASE 1 HERITAGE IMPACT ASSESSMENT: PROPOSED  
PROSPECTING ON THE FARMS ADAMS 328 AND ERIN  
316, KURUMAN, GA-SEGONYANA MUNICIPALITY IN  
THE NORTHERN CAPE.**

(Assessment conducted under Section 38 (8) of the  
National Heritage Resources Act No 25 of 1999)

Prepared for  
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## **EXECUTIVE SUMMARY**

The Archaeology Contracts Office at the University of Cape Town was approached by Zama Mining Resources (Pty) Ltd to undertake a heritage impact assessment prior to the approval of an EMP for prospecting rights on remaining portions of farm Adams 328 and remaining portions of farm Erin 316, situated in the Kuruman District of the Northern Cape.

The terms of reference included the identification of heritage sites on the farms, the rating of their significance, an evaluation of the impact of prospecting on the heritage resources and recommendations for mitigation. Our investigations included a field survey, a literature review and interviews with the farm owners and farm workers.

The heritage resources include both Stone Age remains and material relating to 20<sup>th</sup> century occupation of the farms. The following was discovered:

- Two ephemeral and isolated scatters of Middle Stone Age material on Erin;
- Two 20<sup>th</sup> century graves (one farm owner and one farm worker) on Erin;
- A possible hand-excavated well on Erin;
- Farm buildings including a shed, workers cottages, a dam, kraals and boreholes on Erin dating to the 20<sup>th</sup> century;
- Two graves (one farm owner, the other unknown) on Adams;
- A 20<sup>th</sup> century worker's cottage on Adams;
- One hand-excavated well on Adams;
- A water trough and limestone dam on Adams;
- A small scatter of MSA/LSA stone artifacts next to the well on Adams;
- Some rectangular limestone blocks, an ash heap, iron and glass rubbish suggesting an early 20<sup>th</sup> century settlement near the well.

Some information on Living Heritage was collected from the farm owners, but the farm workers on both farms have been employed within the last 5 years and do not have a detailed knowledge of the area. The Cultural Landscape comprises a rural Bushveld farm environment.

It is unlikely that prospecting for minerals will impact significantly on the heritage listed above and it is recommended that the prospecting may take place. If any significant concentrations of stone tools and faunal remains, fossils, stone walling or graves are uncovered, work should cease immediately and SAHRA must be notified. SAHRA will request an archaeologist/palaeontologist to investigate.

## **GLOSSARY**

<b>ASSMANG:</b>	Associated Manganese Mines of South Africa
<b>ESA:</b>	Early Stone Age – The archaeology of the Stone Age between 700 000 and 2500 000 years ago.
<b>Khoekhoen:</b>	Pastoralist groups, with cattle, sheep and pottery who settled in southern Africa around 2000 years ago.
<b>Khoisan:</b>	Collective term relating to both the Khoekhoen and the San.
<b>LSA:</b>	Later Stone Age – The archaeology of the last 20 000 years associated with fully modern people.
<b>MSA:</b>	Middle Stone Age - The archaeology of the Stone Age between 300 000 – 20 000 years ago associated with early modern humans.
<b>NHRA:</b>	National Heritage Resources Act, No 25 of 1999.
<b>SAHRA:</b>	South African Heritage Resources Agency
<b>SAMANCOR:</b>	South African Manganese Corporation
<b>San:</b>	Indigenous hunter-gatherer groups who lived in small bands spread across a wide area of southern Africa.

## 1. INTRODUCTION

The Archaeology Contracts Office at the University of Cape Town was approached by Zama Mining Resources (Pty) Ltd to undertake a heritage impact assessment prior to the approval of an EMP for prospecting rights on remaining portions of farm Adams 328 and remaining portions of farm Erin 316, situated in the Kuruman District of the Northern Cape (Figure 1). The Department of Minerals and Energy in Kimberley referred the EMP to SAHRA who advised that a phase 1 archaeological impact assessment was necessary.

Manganese ore is currently produced from 5 operating mines around the town of Hotazel near Kuruman. While some of the older mines in the area have closed down, the increased demand for manganese has resulted in further exploration and the development of new mines.

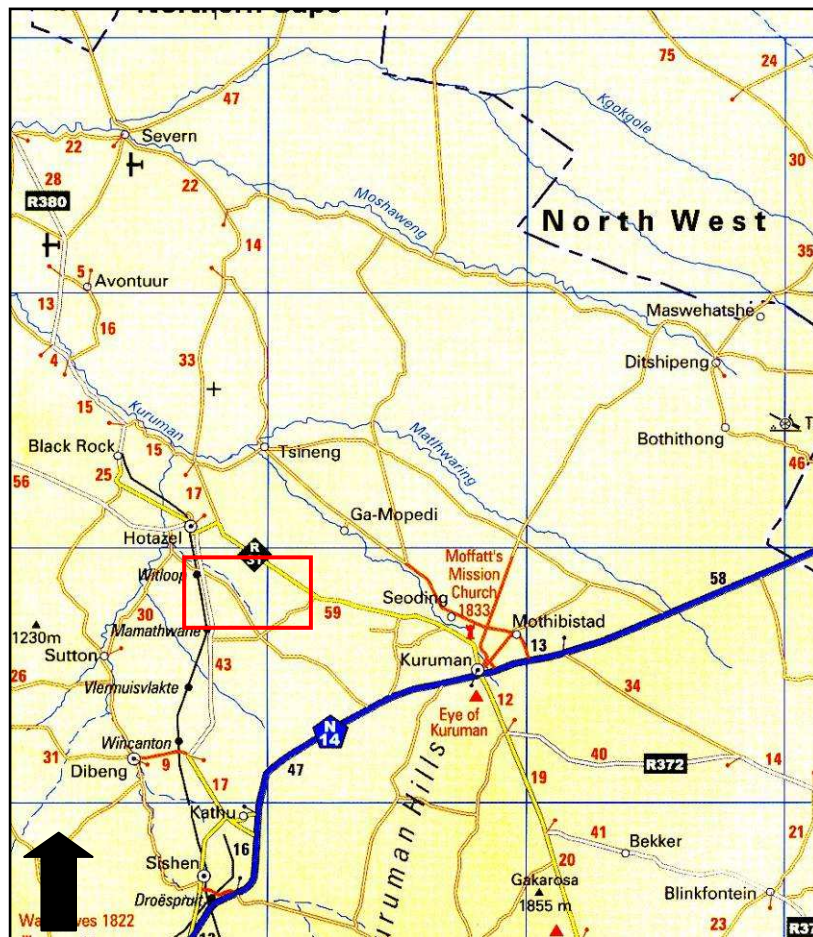


Figure 1: The location of the farms north-west of Kuruman in the Northern Cape

## 2. TERMS OF REFERENCE

A Phase 1 Heritage Impact Assessment was requested by Zama Mining to investigate the possibility that heritage sites might be negatively impacted by prospecting and mining on portions of the farm Erin 316 and Adams 328. The assessment includes:

- Identification of heritage sites through a desk top survey and site visit

- Rating of significance of heritage sites on the properties
- Assessment of the impact of prospecting on the heritage of the properties
- Recommendations for mitigation

### **3. LEGISLATION**

The National Heritage Resources Act of 1999 (Section 38) makes provision for a compulsory Heritage Impact Assessment when constructing a road or similar linear developments exceeding 300m in length or developing an area exceeding 5000 m<sup>2</sup> in extent. The responsible heritage resources authority or SAHRA must be notified and SAHRA will in turn advise whether an impact assessment report is needed before development can take place.

Section 34 of the Act stipulates 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.

In terms of Section 35 of the Act all archaeological objects, palaeontological material and meteorites are the property of the State. Any person who discovers any of these materials in the course of development must immediately inform the responsible heritage resources authority. No person may, without a permit issued by the responsible heritage authority destroy, damage, excavate, alter, deface or disturb any archaeological sites and material, palaeontological sites and meteorites.

With regard burial grounds and graves, Section 36 (3) of the Act clearly stipulates that no person may, without a permit issued by the relevant heritage authority or SAHRA, (a) destroy, damage or exhume the grave of the victim of conflict; (b) destroy, damage or exhume any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority.

Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) is also given protection under the Act.

### **4. LOCATION**

The towns of Kuruman and Hotazel are close to the border of the Northern Cape and the North West Provinces. The farms Adams 328 and Erin 316 are located between Kuruman and Hotazel to the west of the R31 road (Figure 2). This part of the Northern Cape is located on the inland plateau with very low summer rainfall. The Kuruman Hills to the west and south-west of Kuruman are about 400 m high and run in a north-south direction. The Ghaap Escarpment is located further to the south-east, closer to Kimberley. The vegetation is characterised as Bushveld and comprises a mix of shrubs, trees and grassveld. The main sources of water in this part of the world are springs and pans which are dependent on rainfall. An analysis of Khoisan place names in the Northern Cape has revealed an emphasis on water, indicating that this scarce resource was highly valued. The Kuruman eye is an example of such a spring which yields about 18 million litres of

water a day. In general however, farmers in the Kuruman Hills area reported that they have to dig for water as there are no reliable springs. Humphreys and Thackeray (1983) have noted that early European settlement was determined by the availability of water sources.

## **5. GEOLOGICAL AND PALAEONTOLOGICAL BACKGROUND**

Manganese is an essential component of the modern steel industry but it was only in 1857 that it was discovered that the addition of small amounts of manganese made steel ductile (Cairncross et al 1997: 4). South Africa is both a major producer of iron ore and of manganese. The largest concentration of manganese in the world occurs in the Kalahari manganese field of the Transvaal Supergroup in the Northern Cape Province.

The sedimentary rocks of the Transvaal Supergroup in Griqualand West region area are folded into a series of synclinal and anticlinal structures. It is these structures at the base of the Olifantshoek Group (1800 – 2150 million year old red beds) which are important in preserving the manganese and iron ore deposits of Griqualand West. The Kalahari manganese field is preserved below the Olifantshoek unconformity (Cairncross et al 1997:41) and mining operations may result in the recovery of *stromatolites* from the Olifantshoek Group (Almond pers. comm.).

### **5.1 Olifantshoek Group**

(Ml, Mb, Mf, Mel, Mgl, Mve, Mt)

Early Proterozoic (Mokolian) c. 1.9 Ga

This comprises predominantly continental "red beds" (fluvial sediments), subordinate shallow marine siliciclastic meta-sediments (low grade), lavas, carbonates.

Possible stromatolites, microfossils in marine units e.g. Lucknow Formation carbonates (Ml), Top Dog Formation shales (Mt)

- a. Continental "red beds" record development of early oxygen-rich atmosphere;
- b. Laterites (Gamagara Formation) suggest possible biological activity on land.

*Stromatolites* are the fossilized cells of the earliest life forms. They were built from colonies of blue-green algae or cyanobacteria. In the distant past this algae may have covered much of the aquatic world. The word comes from the Greek root *stroma* meaning "anything spread out for sitting or lying on". The fossils can take many forms, from bubble-like domes to multi-coloured laminates of sediment. They are products of the Transvaal sea some 2 600 – 2 400 million years ago.

However, according to Cairncross et al (1997), carbonate rock containing the stromatolites, are generally found further south at the Campbellrand/Malmani succession at Postmasberg and not around Hotazel.

Cairncross et al (1997:103) have the following to say: "the importance of the iron and manganese ore deposits of Griqualand West impacts far beyond that of their local

economic and geological significance. These deposits hold vital clues to unraveling the evolution of ancient sedimentary environments on Earth during the period 2000 – 2 600 million year ago, particularly with respect to soil-forming processes and conditions in the oceans”.

## 6. ARCHAEOLOGICAL BACKGROUND

There has been very little systematic archaeological work undertaken north of Kuruman (David Morris pers. comm.) in the Northern Cape Province. There are reports of rock engravings just to the north of the town but the location of these could not be verified. Our knowledge of the archaeology of the region is largely dependent on the archaeological research programme undertaken by Humphreys & Thackeray (1983) to the south of Kuruman, in the Kuruman Hills and on the Ghaap escarpment, as well as that of Beaumont (1990).

Kathu Pan is some 5 km north-west of the town Kathu on a tributary of the Kuruman River. The pan is about 30 ha in extent and the natural water table rises to above the present surface in summer but lies below the surface in winter. In 1974 handaxes and faunal remains were noticed in the walls of a subsidence near the homestead (Kathu Pan 1). In addition to the stone artifacts, fragments of teeth enamel of the following animals: *Syncerus caffer*, *Pelorovis antiquus*, *Elephas recki* point to very different environmental conditions in the past. Over the next decade, Beaumont excavated numerous sites around the pan. In his assessment (Beaumont 1990), he observed that a combination of geological conditions resulted in the preservation of a long record of human habitation in the Northern Cape. He has identified three phases of the ESA, 2 phases of the MSA and a more or less continuous spread of the LSA at Kathu.

Excavations at Wonderwerk Cave, 40 km to the south of Kuruman, have uncovered both Early and Later Stone Age materials. The LSA at the site covers the last 10 000 years. There is evidence for the Kuruman Industry dating between 10 000 BP and 8 500 BP. It is characterised by rare retouched artefacts, mainly large banded ironstone and dolomite scrapers. This is replaced by the Wilton Complex around 8 500 BP with a greater variety of retouched artefacts made on fine-grained raw materials such as chert, chalcendony and jasper.

Blinkklipkop is a specularite mine some 5 km north-east of Postmasberg which was mined by indigenous communities prior to the arrival of Europeans. It was visited by many travelers passing through the Northern Cape in the 19<sup>th</sup> century. The basal layers date to around 1200 BP. Sheep/goat remains were found in the deposit as well, indicating that domestic stock was present in the Kuruman Hills by 1200 BD.

According to Humphreys and Thackeray, Iron Age farmers only settled in the Northern Cape after A.D. 1600. The main area of Iron Age settlement and the only area, in which there is direct archaeological evidence for such settlement in the form of stone walling, are to the north-east of Kuruman. By the time the first European travellers arrived in this area they met only Iron Age Tswana-speaking people such as the Tlhaping. The Tswana settlement of Dithakong was located to the north-east of Kuruman in an area with many large springs.

## **7. HISTORICAL BACKGROUND**

The area known as Griqualand West was first ‘roughly’ surveyed by F. Orpen and W. Stow in 1872, although their map does not show the area to the north of Kuruman. Rogers Geological Map of 1907 does include the area to Black Hills and he characterizes the geology around the farms as “recent and superficial. Chiefly sand. Limestone along rivers, gravels, surface quartzites”. An examination of the survey diagrams for the farms adjoining Adams and Erin has shown that they were all surveyed and beaconed in the years 1913-1914, suggesting that they were Crown Lands until this date (Figure 3). However, farmers in the area have confirmed that their ancestors were living on these farms prior to the 20<sup>th</sup> century. Permanent European settlement was only possibly after the advent of boreholes.

### **7.1 History of Manganese Mining in the Northern Cape**

Dirk Roos and Hendrik Wessels were given the task of surveying and naming the many farms in this region between 1915 and 1917 (Cairncross et al 1997). They did not realize however, that the ground beneath them was almost solid manganese. It was only in the late 1950’s that this discovery was revealed. A water diviner reported that he had seen black rocks beneath the surface of this farm and on a whim; a geologist visited this site and did tests. The results proved to be staggering. The farm was immediately secured and mining started here in 1958.

The only natural outcrop of the manganese ore beds of the Kalahari Manganese field forms a small isolated hill, composed of banded iron-formation rocks, surrounded by a grass and shrub covered sandy plain. This hill (to the north of Hotazel) was an important landmark for indigenous peoples and was known as Lentswana (Lentswe = hill) to the Tswana. However, it later became known as Black Rock, and its geology first described in 1907 by Dr A Rogers of the Geological Survey of the Cape of Good Hope (Cairncross et al 1997: 21). The significance of Black Rock was only realized in the 1940 when ASSMANG started prospecting here.

The first two mines to be developed after Black Rock in the 1950s were Devon and Smartt. Further exploration in the late 1950s led to the discovery of shallow, high-grade manganese ore bodies at Hotazel and Langdon. Shortly afterwards the *Adams mine* was opened by ASSMANG directly adjacent to SAMANCOR’s Mamatwan mine. Of all these mines, only the very large Mamatwan mine is still operating. It is located on the south-west corner of Adams 328 (Figure 3).

## **8. METHODS**

Mr. Venter of Adams and Mr. Le Roux (the step-son of Mr. Markram) of Erin were interviewed with regard heritage sites/resources on their properties. Further, discussions were also held with farm labourers on both farms in order to collect information on living heritage.

A literature survey was undertaken of the archaeological resources of the region and this is combined with information on the geology, palaeontology and history where this is



available. A fairly comprehensive survey of the ground surface was carried out by two archaeologists on 2 and 3 October 2008. Finds were photographed and described and GPS co-ordinates on the WGS84 datum were obtained (Figure 4).

## 8.1 Limitations

In discussions with Mr. Le Roux of the farm Erin 316, it transpired that the farm had been sub-divided in the past on two different occasions, and the map provided to us by Zama Mining did not reflect the current ownership. Mr. Le Roux only owns a portion of Erin 316 (Figure 2), while Grootboom to the south-east belongs to Mr. C Visser and an unnamed portion to the south and west belongs to Mr. D Kruger. We were not given the contact details of these two farmers and were not able to survey their lands. We did, however, drive through Grootboom and were able to examine both sides of the road. We also drove along the gravel road which runs on the south-western edge of the old Erin farm, and were able to examine the road reserve (Figure 4). *We are of the opinion that this limitation does not impact on the findings of our survey (see below).*

On discussions with the farm labourers on both Erin and Adams, we discovered that the labourers do not have a long association (employed within the last 5 years) with the farms and are therefore not very knowledgeable about the landscape. *This limitation impacts on our understanding of the living heritage of the farms.*

## 9. RESULTS OF FIELD SURVEY

### Erin

Mr. L Le Roux (Mr. Markram's step son) accompanied us on our survey of the farm Erin on the 2 October. His family had owned the farm for at least 4-5 generations. He informed us that there were no springs or pans which accumulated water on the farm and all water was obtained from boreholes.

**9.1 Grave of PC van Vuuren:** Mr. Le Roux was only aware of one grave on the farm, that of a distant relative, Mr. PC van Vuuren. He thought the grave might be that of his grandmother's father. The inscription (in Afrikaans) on the grave reads: "My eggenoot and ons vader Pieter Coenrad van Vuuren. Gebore 8 April 1898, Oorlede 8 Januarie 1935" and this is located at:



S 27 17 10.3  
E 23 02 41.8

**9.2 Well:** Mr. Le Roux related that his grandmother had told him that the depression in the veld in association with fragmented dolomite was an old well where people had dug for water in the past.

S 27 17 03.6

E 23 02 52.9

**9.3 Artifact scatter:** There is an open area of red soil in the veld (to the north-east of the farmhouse) which is littered with small pebbles of an exotic origin. A few of these pebbles have been flaked and there are some flakes with retouch. Some of the flakes have faceted platforms and appear to be of Middle Stone Age origin. The flakes are very dispersed and there is no indication that they are in primary context or related to a knapping surface.



S 27 17 04.1

E 23 02 46.2

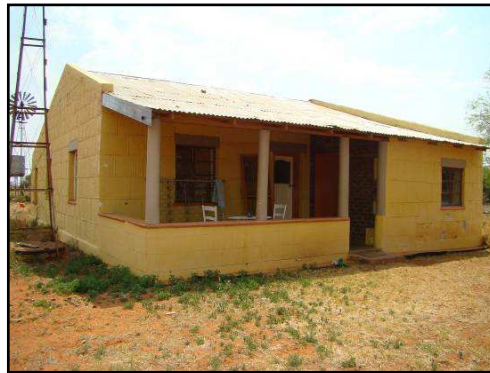
**9.4 Grave of S Tebogang:** Jack Tkhubu, a farm labourer on Erin, indicated the presence of a grave near the workers quarters. His wife reported that this was the grave of a certain Sarel Tebogang who had lived and worked on the farm many years ago.



S 27 17 19.9

E 23 02 34.2

**9.5 Main farmhouse at Erin:** The structures comprising the main farm complex consist of a house, a fairly modern garage, a stone reservoir/dam and a pump house. There are also some kraals encircled with wire fencing. Mr. Le Roux reported that the original farmhouse occupied by his grandmother had been destroyed and replaced with the current house. Many of the houses in the area between Kuruman and Hotazel are constructed from limestone blocks which have been removed from the “Witleegte” a dried up river bed/pan which runs through several of the farms. This is most easily identified with Mr. Tkhubu’s house which also had a semi-circular cooking shelter (“kookskerm”) outside the front door. It is more difficult to determine if the main house is constructed of the same limestone blocks as it has been plastered and painted. The stone reservoir was constructed in the 1950s.



S 27 17 16.1  
E 23 02 36.4

**9.6 Artifact scatter:** A second artifact scatter was discovered close to the farm gate of Erin. It seems to be part of the same scatter found elsewhere and is similar in composition.

S 27 16 47.3  
E 23 02 40.1

**9.7 Main farmhouse at Grootboom:** This house is standing empty, but has a sign “JP Visser: Groot Kameel”. There are some more recent labourers’ buildings nearby as well as a stone reservoir built in the same style as that of Erin.



S 27 18 29.9; E 23 02 59.8



## Adams

This farm was surveyed on the 3<sup>rd</sup> October. Mr. Venter, the owner of Adams, currently resides on the farm Kameel Aar which adjoins Erin. He related that his father had purchased Adams in approximately 1927. He said that his father had taught in a farm school for about 20 years but he was not clear on whether the school was located on Adams. We found no evidence of any substantial farm building on Adams. The only structure on the farm is a recently constructed labourer's cottage occupied by Mr. Jim Julies and his family. He informed us that he had moved to Adams from the Northwest Province some 5 years ago. It is possible that the original farmhouse was part of the section of the farm which was sold in 1958 for the establishment of the Adams mine and no longer exists. However, Mr Venter did say that his "father's family had lived at the vlei" (i.e. the "Witleegte") and we did find a large amount of early 20<sup>th</sup> century debris suggesting occupation of the area (see below).

Mr. Venter reported that there was no water on the farm and they had "dug wells in the past" (see 9.12 below). The dry river bed/vlei called "Witleegte" never contained any water even after heavy rains. He had never come across any Bushmen remains/artefacts on the farm and he was of the opinion that the area did not contain sufficient springs to make habitation likely in the past.

**99.7 Grave of GP Nel:** Mr. Venter did not know the origins of the person buried in the grave. The inscription (in Afrikaans) reads: "opgerig deur JH en JM Nel eggenote en kind. Hier rus my eggenoot en ons vader: George Phillipus Nel. Gebore 11 Okt 1878; Oorlede 5 Des 1939".



S 27 21 23.4  
E 23 02 42.5



**9.8 Windmill:** There is a windmill and a dam in the centre of the farm. There are calcrete chunks and some small pieces of red jasper which suggests that they may have been uncovered during the drilling for water.

S 27 22 27.7  
E 23 00 56.8

**9.9 Grave:** on the edge of the “Witleegte” close to the road, is a wide scatter of material suggesting prior occupation of the area. There is a rectangular area marked out with large chunks of red jasper which seem to indicate a possible grave (or even two) the one being orientated in a north-south direction.

S 27 21 10.3

E 23 02 43.5



**9.10 Water trough:** A few metres from the “grave” is a roughly constructed trough made from slabs of stone.

**9.11 Dam/Reservoir:** Behind the grave and the trough is a large dam/reservoir made of calcrete blocks and lined with some type of plaster.

**9.12 Well:** Nearby is a deep well, presently covered with barbed wire. The top section of the well is lined with limestone blocks, but the lower section is sunk into the soil. The soil removed from the well is distributed nearby and seems to contain a few stone artefacts. An adze, possibly made on an older flake, as well as a retouched piece were recovered in this soil. Both are made on exotic raw materials. It is possible that the large lumps of red jasper on the “grave” were also obtained from beneath the calcrete in the well.

S 27 21 09.0

E 23 02 43.5



**9.13 Earlier settlements:** To the north of the well and the reservoir are a number of raised areas which suggest prior occupation. There are occasional calcrete blocks which may indicate past structures, pieces of metal, occasional fragments of glass and a few fragments of European ceramics. The remains seem to suggest a late 19<sup>th</sup> or early 20<sup>th</sup> century settlement of an ephemeral nature. A large ash heap was identified at one raised area.



**9.14 Limestone source:** A small section of the farm Lizbeth runs along the eastern section of Adams. There is a calcrete depression in the “Witleegte” on this farm which appears to have been the source for the limestone blocks used in construction in the area. The edge of the depression has been cut away in a regular line, as blocks have been removed in the past.

## 10. DISCUSSION OF RESULTS AND SENSITIVITY OF THE AREA

The aridity of the area suggests that pre-colonial occupation would have been limited to periods of good rainfall when water collected briefly in pans or when springs flowed for a short period (such as in 1974). There is very little archaeological evidence for pre-colonial settlement. A few ephemeral scatters of stone tools were found on Erin. The artefacts are made on a variety of raw materials such as banded ironstone, cherts, dolomite, etc and appear to be of MSA origin. They are not concentrated in a specific area and there are few cores suggesting that these were not stone knapping areas. It would appear that these flakes are not *in situ*. The stone tools at Adams were found in soil which had been removed from a well, suggesting that they were buried at some depth beneath the soil surface. Only three stone tools were identified: a large dolomite scraper (possibly from the Kuruman Industry), a LSA chert adze which appears to have been made from an earlier (possibly MSA) flake and a single retouched flake. Clearly, evidence for pre-colonial settlement is extremely limited in this area. It is possible that there may be MSA artefacts (and even ESA artefacts if one considers Kathu Pan to the south-west) beneath the soil surface and these may be uncovered during mining. This area is considered to be of limited archaeological sensitivity.

No pottery was recovered which could indicate Khoekhoen or Iron Age settlement. Further there are no stone walling on the farms and this would confirm other observations that Iron Age settlement occurs to the north-east of Kuruman.



Orpen and Stow's map of 1872 (which does not extend as far north as Kuruman) indicates how sparsely this part of the Northern Cape was settled by Europeans prior to the 20<sup>th</sup> century. The farms between Kuruman and Hotazel were only surveyed and beacons in 1914. Prior to this period the land was all Crown Land. While there were farmers in this area during the latter part of the 19<sup>th</sup> century, their numbers were relatively small until the use of borehole water for farming during the 20<sup>th</sup> century. This is confirmed by the hand-dug well on Adams. The two headstones with inscriptions date to the 1930s and there are no buildings which appear to date to the early 20<sup>th</sup> century. While some of the structures may be 60 years old, this is difficult to determine. The only aspect of the buildings on Erin which are of interest is the use of limestone blocks in construction. Evidence for European settlement is therefore also of limited significance.

## **11. SIGNIFICANCE OF SITES, IMPACT OF DEVELOPMENT AND MITIGATION MEASURES**

### **11.1 Loss of existing sites: Stone artefact scatters**

**Comment:** The scatters are very ephemeral and do not appear to be *in situ*.

**Significance:** Section 35 of the NHRA prohibits any person, without a permit, from destroying, damaging, excavating, altering, defacing or disturbing any archaeological sites and material, palaeontological sites and meteorites. The stone scatters are of limited significance as they cannot provide significant new information on the settlement of the area.

**Mitigation measures:** Prospecting is unlikely to impact on the present distribution of artefacts. No mitigation is needed.

### **11.2 Loss of existing sites: Graves**

**Comment:** A total of four (4) graves were discovered. Two were found on Erin (a farm owner and a farm labourer) and two on Adams (a farm owner and that of an unknown individual).

**Significance:** Section 36 (3) (b) of the NHRA clearly stipulates that no person may, without a permit issued by the relevant heritage authority or SAHRA destroy, damage or exhume any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority. At least 3 of the identified graves are older than 60 years and may therefore not be destroyed or exhumed without a permit.

**Mitigation:** The graves may not be disturbed in any way unless an application has been made to SAHRA for a permit. It is recommended that they are fenced and protected.

### **11.3 Loss of existing sites: Buildings and farm structures**

**Comment:** A number of farm buildings including houses, sheds, dams/reservoir and boreholes are found on each of the farms. They are concentrated in specific areas which are readily identifiable.

**Significance:** Section 34 of the NHRA stipulates 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. However, the majority of the structures on Adams and Erin appear to be more recent than 60 years and appear to have limited significance. It is of interest, however, that many are constructed of locally mined limestone blocks.

**Mitigation:** It is unlikely that the buildings will be impacted by the prospecting for minerals. There are farm workers who still occupy buildings on the farms and in the case of Erin, the owner stays in his house on weekends. In the unlikely event that the houses may be impacted during mining operations, this would form part of a separate impact assessment.

### **11.4 Loss of possible undiscovered and/or buried sites: Palaeontological material**

**Comment:** From a literature survey and the advice of a palaeontologist (Dr John Almond), it is possible that *Stromatolites* (the fossilized cells of the earliest life forms dating to some 2 400 million years ago) may be discovered during prospecting. These fossils can take many forms, from bubble-like domes to multi-coloured laminates of sediment.

**Significance:** These fossils are protected by Section 35 of the NHRA. They are significant as they can inform us on the evolution of ancient sedimentary environments. However, according to Cairncross et al (1997), stromatolites have only been discovered further south in the Postmasberg vicinity.

**Mitigation:** No mitigation will be required during the prospecting stage. However, during mining operations it is advisable that a palaeontologist is able to examine rock specimens to determine if stromatolites are present.

### **11.5 Loss of possible undiscovered and/or buried sites: Stone Artefacts**

**Comment:** The discovery of stone tools near the well on Adams suggests that stone tools may be recovered from beneath the soil surface. Further south, at Kathu Pan, ESA implements have been found beneath the soil surface.

**Significance:** It is possible that *in situ* collections of ESA, MSA and LSA material is buried beneath the soil surface and they could contribute to our understanding of human occupation of the area (such as the Beaumont investigations revealed at Kathu Pan). However, prospecting is unlikely to disturb significantly large areas to be of concern.



**Mitigation measures:** No mitigation is required during prospecting. This assessment may need to be revised during mining operations.

#### **11.6 Loss of possible undiscovered and/or buried sites: Graves**

**Comment:** The presence of isolated graves on Erin and Adams suggests that further graves may be uncovered beneath the soil surface.

**Significance:** All graves are protected and since they are highly sensitive, it is essential that they are not damaged or destroyed during prospecting or mining.

**Mitigation measures:** If a grave is uncovered during prospecting, all work in the area must immediately stop and SAHRA must be advised. SAHRA will request an archaeologist to investigate the matter. This will be to the cost of the developer.

#### **11.7 Loss of possible undiscovered and/or buried sites: Structures**

**Comment:** It is unlikely that any sub-surface structures or buildings will be uncovered during prospecting.

**Significance:** Sub-surface structures are more likely to relate to European settlement but there is a small possibility that stone walling from the Iron Age period may be uncovered. The latter is likely to be very significant.

**Mitigation measures:** If any ruins of sub-surface structures are uncovered, work should cease and SAHRA should be advised. SAHRA will request an archaeologist to investigate the matter. This will be to the cost of the developer.

#### **11.8 Loss of Cultural Landscape**

**Comment:** The cultural landscape of the farms consists of undulating plains and occasional calcrete depressions. There are a few isolated farm houses and associated structures including dams and windmills. Some exotic trees have been introduced to provide shade. These farms are bisected by gravel roads.

**Significance:** While the landscape of this area is of interest as an example of a Bushveld farm landscape, these vistas are very common across a wide area of the Northern Cape and the prospecting for minerals is not likely to impact significantly.

**Mitigation measures:** No mitigation is required.

#### **11.9 Loss of Living Heritage**

**Comment:** Very little information could be collected. The farm owners who were interviewed provided some information which is provided above. The farm workers on both Erin and Adams were Tswana-speakers who had been appointed

within the last 5 years. They were not from the Kuruman area and they could not contribute any additional information on the farms. It is of interest that the farm worker on Erin had constructed a stone “kookskerm” (cooking shelter) outside his house and further oral history might uncover a Khoisan connection.

**Significance:** Nothing of significance could be collected.

**Mitigation measures:** No mitigation is required.

## 12. CONCLUSIONS AND RECOMMENDATIONS

This investigation into the heritage of Adams 328 and Erin 316 in the Kuruman area of the Northern Cape included fieldwork, a desk top survey of available literature and the collection of oral history.

This report:

- Did not find any palaeontological material;
- Concludes that there is no significant surface archaeological material on either property;
- Located four graves;
- Identified a number of 20<sup>th</sup> century farm buildings and associated structures which are of limited heritage significance;
- Was unable to identify any sites associated with Living Heritage;
- Determined that the Cultural Landscape is unlikely to be impacted by prospecting.

Prospecting for minerals on these properties is unlikely to impact to any significant degree on any of the above-mentioned heritage resources.

During our survey work, it was discovered that Erin 316 had been sub-divided in the past, and that the present farm with the name of Erin only constitutes a fraction of the original farm. Two other sections belong to other owners. We were not provided with the information on the other owners and were therefore only able to survey that portion of Erin which belongs to Mr Markram. *However, we were able to form an opinion on the heritage of the remaining portions of Erin based on our survey of the area and are able to conclude that the nature of the heritage on the remaining portions will not differ in any way.*

It is recommended that prospecting may continue but that work should cease if any of the following are uncovered:

- Human remains/graves
- Concentrations of stone tools or faunal remains
- Stone walling or any sub-surface structures
- Fossils

If any of the above is uncovered, SAHRA should be notified so that an archaeologist/palaeontologist can investigate further.

### **13. REFERENCES**

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Smith, A.B. 1995. Einiqualand: Studies of the Orange River Frontier. University of Cape Town.

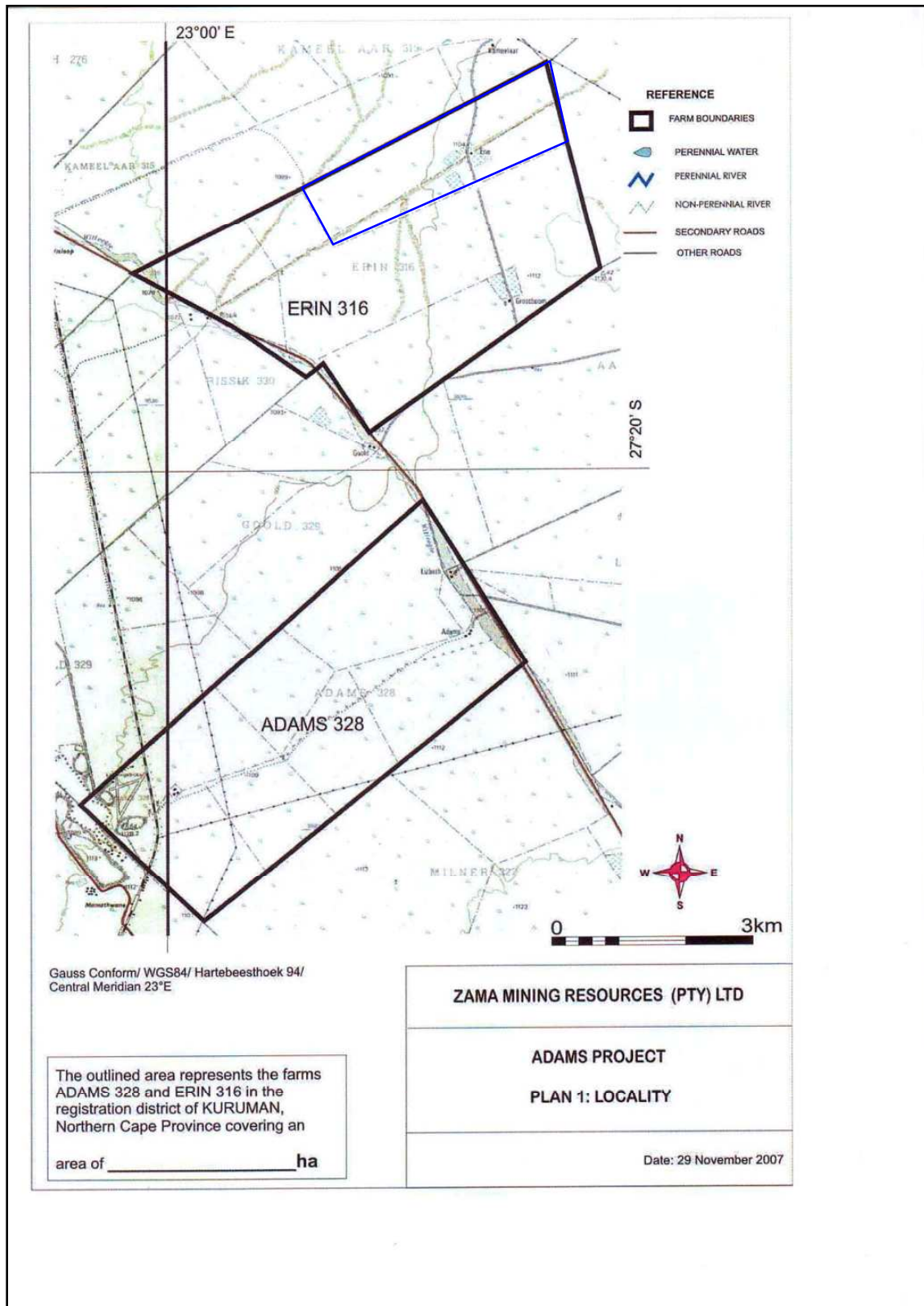


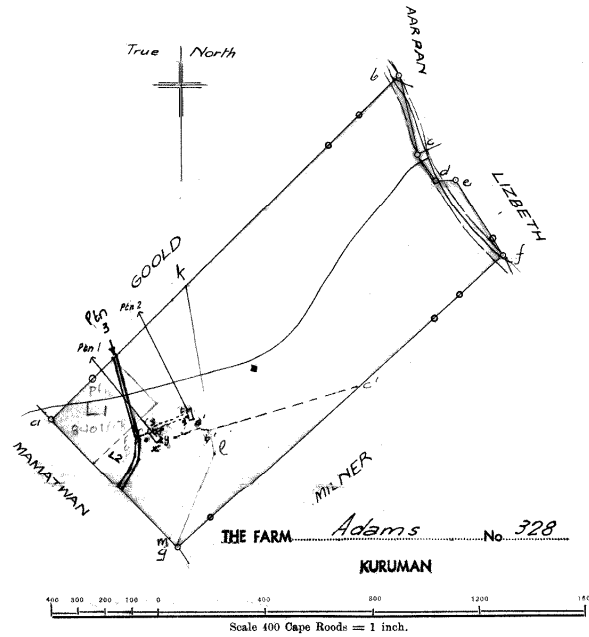
Figure 2: Composite of Map Sheets 2722 BD and 2723 AC, showing the location of Adams 328 and Erin 316. Erin has been further sub-divided and the area in blue was investigated.

No. 1294, 1914.

Approved.

*W. K. Maudslayi*  
Surveyor General.

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SIDES Cape Roods.	
a b	1828.09
b c	300.88
c d	121.00
d e	80.67
e f	333.84
f g	1649.03
g a	685.66
ANGLES.	
a	91 28 40
b	59 57 50
c	198 44 20
d	237 00 00
e	120 06 40
f	101 37 30
g	91 05 00
CO-ORDINATES.	
	y x
a	+2556.18 -8516.65
b	+1247.77 -9793.37
c	+1173.65 -9501.76
d	+1107.75 -9400.28
e	+1027.08 -9400.28
f	+859.60 -9111.49
g	+2090.14 -8013.72

The above diagram lettered a b c d e f g represents 2060 Morgen  
368 Square Roods of land situate in Field-Corsety No.  
DIVISION OF KURUMAN, being the farm ADAMS

Bounded N.W. GOULD  
N.E. AARPAN AND LIZBETH  
S.E. MILNER  
S.W. MAMATWAN

This diagram is annexed to the  
Title Deed No. 6/1924  
dated.....in favour of

FOR ENDORSEMENTS  
SEE BACK OF DGM.

Surveyed and beacons by me according to regulations.

1913-1914.

*W.R. Louham*  
Government Land Surveyor.

I certify that this Diagram belongs to the Title Deed ~~this day~~ issued  
in favour of L. L. Kruger, on 1.9.1924 (Vr4 N°6/1924) FOR ENDORSEMENTS  
SEE BACK OF DGM.

Department of Lands,  
Pretoria.

VIA NOTARIAL DEPARTMENT WITH DEEDS  
FOR SERV. OF DEPT. OF LANDS.  
S/S. 5727  
5727

Secretary for Lands

328

Figure 3: The Survey Diagram for Adams 328 indicating that it was surveyed and beacons in 1913-1914.



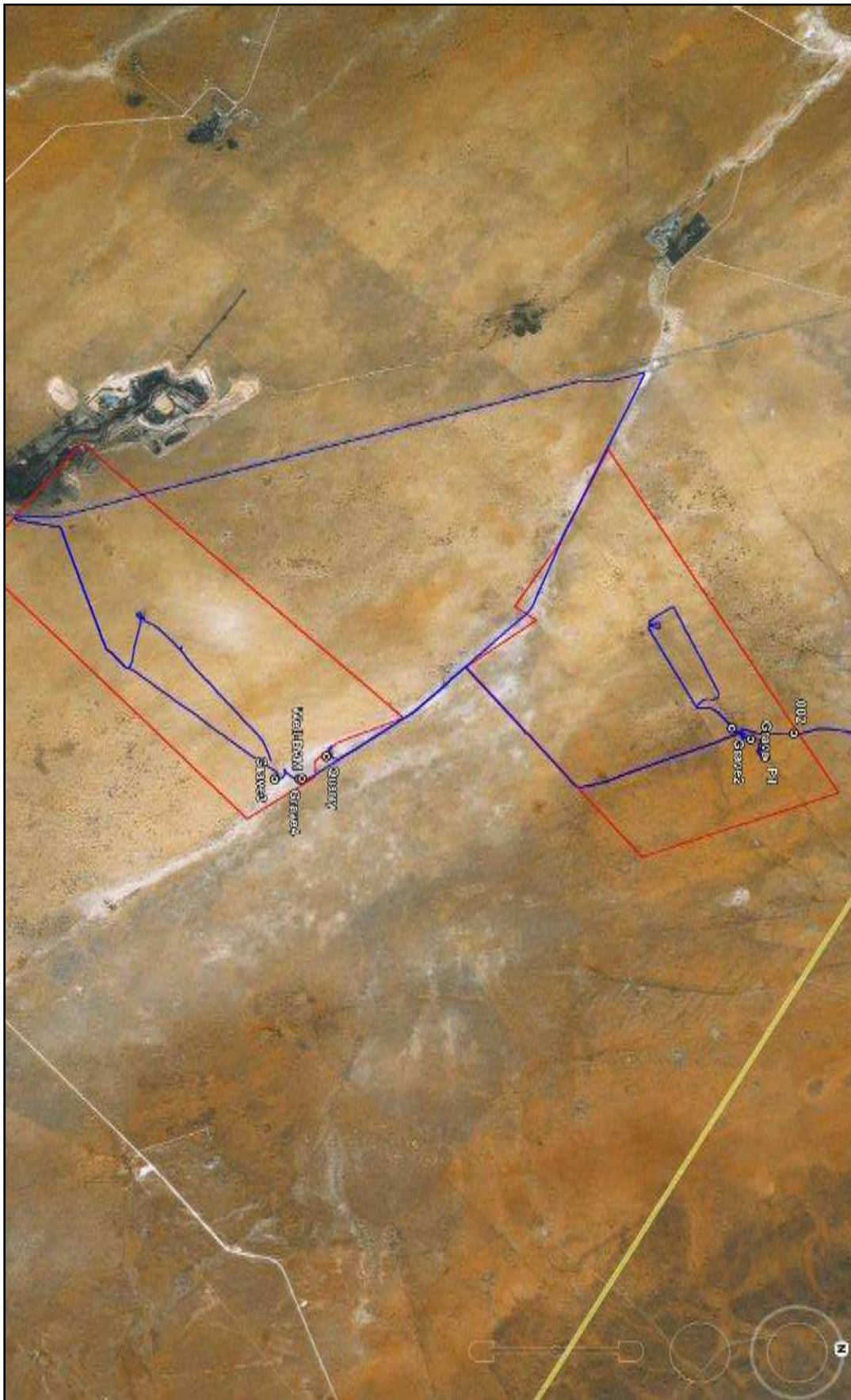


Figure 4: The farms Erin and Adams (indicated by the red boundaries) and the blue lines showing the routes followed during the survey.