

ARCHAEOLOGICAL IMPACT ASSESSMENT

Proposed vineyard development on Farm 1726 Renosterkop, Farm 1290 & Farm 1537 Augrabies Northern Cape

Assessment conducted under Section 38 (3) of the National Heritage
Resource Act (No. 25 of 1999)

Prepared for:

PIETER BADENHORST PROFESSIONAL SERVICES

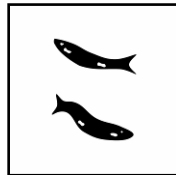
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Executive summary

1. Introduction

ACRM was requested by Pieter Badenhorst Professional Services to conduct an Archaeological Impact Assessment (AIA) for a proposed vineyard development on Farm 1726 Renosterkop, Farm 1290 and Farm 1537 Augrabies, near Kakamas in the Northern Cape Province.

The study site is located south east of the town of Augrabies. It lies directly north of the R64 and south and west of Renosterkop Peak. The Orange River borders the study site in the south and east.

The proposed agricultural development will cover a footprint area of about 77 ha. Water for the new vineyards will be supplied from a pump station located on the banks of the Orange River. The vineyards will be supplied with water via a 3.2km long buried pipeline placed alongside existing gravel farm roads.

A large portion of the proposed development site has (historically) been previously disturbed, and constitutes a highly degraded landscape.

The AIA forms part of an EIA process that is being conducted by Peter Badenhorst Professional Services.

2. Legal requirements

In terms of Section 38 (1) (c) (iii) of the National Heritage Resources Act 1999 (Act 25 of 1999), a Heritage Impact Assessment (HIA) of the proposed project is required if the footprint area of the proposed development is more than 5000m² in extent.

Section 38 (1) (a) of the Act also indicates that any person constructing a powerline, pipeline or road, or similar linear development or barrier exceeding 300m in length is required to notify the responsible heritage resources authority, who will in turn advise whether an impact assessment report is needed before development can take place.

3. Aim of the AIA

The overall purpose of the AIA is to assess the sensitivity of archaeological resources in the affected areas, to determine the potential impacts on such resources, and to avoid and/or minimize such impacts by means of management and/or mitigation measures.

The significance of archaeological resources was assessed in terms of their content and context. Attributes considered in determining significance include artefact and/or ecofact types, rarity of finds, exceptional items, organic preservation, potential for future research, density of finds and the context in which archaeological traces occur

4. Limitations

The layout of the proposed vineyard development was changed since the field assessment was done in August 2016. An 11.4ha block of land situated alongside the R359 was not searched for archaeological remains. However, given the overall results of

the study, and the disturbed context in which most of the resources were recorded, indications are that the affected piece of land is not a sensitive archaeological landscape. The possibility that a grave(s) may occur on the proposed site cannot be discounted. However, this is considered to be unlikely as the soils here are made up of extremely hard gravels and not conducive for the internment of bodies.

5. Findings

A 3-day foot survey of the proposed development site, including associated activities (i.e. pump station & pipeline route) was undertaken by ACRM in October 2016, in which the following observations were made:

A relatively large number of archaeological resources were documented during the study, but these are spread very thinly and unevenly over the surrounding landscape. Most of the implements comprise single, isolated finds, but dispersed (low & medium density) scatters of tools were also encountered on surface gravels below Renosterkop Peak. However, the more coherent (i. e. medium density) scatters of tools were recorded outside the revised footprint area.

The majority of the tools encountered during the study are assigned to the Later Stone Age (LSA), while a few Middle Stone Age (MSA) flakes, blade tools and points (in indurated shale, banded ironstone & quartzite), were also found. No Early Stone Age (ESA) implements were encountered during the study.

More than 95% of the tools documented are made on locally available, fine-grained banded ironstone, which is a favoured raw material on many sites in the Northern Cape. Many pieces of unworked banded ironstone pebbles and quartz were encountered on some of the surface gravels. The remainder are in indurated shale, chert, quartzite and quartz. Quartz outcrops locally, and pebbles of chalcedony and banded ironstone are derived from an older gravel/Dwyka tillite flushed from an area on top of Renosterkop Peak.

Most of the tools comprise unmodified, utilised and miscellaneous retouched pieces, flakes and chunks, while a small number of cores (in ironstone, quartzite & quartz) were also recorded. No formal retouched tools such as scrapers, points, backed pieces, awls or adzes were found, although many of the implements display scraper-type secondary retouch, occasional backing, and step flake retouch, and are best described as crude and unstandardized tools. One anvil was found, but no hammerstones or grindstones were noted. No organic remains such as pottery or bone were encountered, but two small fragments of weathered ostrich eggshell were found.

Most of the tools recorded, occur *ex-situ* on exposed gravels, where the top soils have either eroded/washed away or have been scraped by heavy plant machinery. Extensive channels (clearly visible on Google Earth) have also been excavated across much of the proposed development site. The south eastern portion of the farm alongside the R64, particularly has also been heavily ripped by bulldozers, while the central portion of Farm 1726, east of the new site office/parking complex was, historically, subjected to intensive diamond prospecting where large gravel dumps and deep excavations are visible across the transformed landscape (and on Google Earth).

As archaeological sites are concerned, most of the occurrences are lacking in context. While several low/medium density scatters of tools were recorded, these occur mostly outside the proposed footprint area. No evidence of any factory or workshop site, or the result of any human settlement was identified within the proposed development site. It is maintained that most of the archaeological remains comprise discarded flakes, flake debris and debitage.

6. Grading

Overall, despite the relatively large numbers of the tools that were recorded, the isolated and mostly disturbed context in which they were found, means that the archaeological resources have been graded as having *low* (Grade 3C) significance.

7. Built environment/historical structures

In terms of the built environment, apart from existing farm infrastructure, including the under construction new office/parking/store complex, no old buildings, historical structures or features, or any old equipment was found on the proposed development site.

The insubstantial stone walled structures associated with the Renosterkop diamond diggings (1927), and tin/tungsten mining (circa 1940) on Renosterkop Peak, will not be impacted by the proposed development or associated activities.

8. Graves

A single grave (Site 891) was recorded on the soft, red sands at the base of Renosterkop Peak. Comprising a pile of deliberately arranged stone, no head or foot stone is evident, suggesting that the grave is not a Christian burial. Historical evidence indicates that Renosterkop Peak, also known as !Nawabdanas, was settled by Namneiqua pastoralists, while groups of people, including 'Bastards', 'Kafirs', Korannas and Bushman were reported from the area in the late 1800s. The grave could conceivably belong to any one of these groups. It is also noted that some of the known Kakamas-Augrabies burials were exhumed from the banks of the Orange River at Renosterkop in 1936. No grave goods such as shell, glass or metal items/containers were found associated with the grave, also indicating considerable antiquity.

Graves/burials are graded as having *high* (3A) local significance.

9. Palaeontology

According to the South Africa Heritage Resources Information System (SAHRIS) fossil-sensitivity map, the proposed development site is of insignificant/zero palaeontological importance. A Letter of Exemption/desk top study will be written up by consulting palaeontologist Dr John Almond, and forms part of the Heritage Impact Assessment for the proposed development.

10. Impact statement

Overall, the results of the study indicate that the proposed activity (i. e. a vineyard development), including associated activities (i. e. pump station & water pipeline), will not

have an impact of great significance on the archaeological heritage, as these are expected to be limited. While a relatively large number of tools were documented, the majority occur in a disturbed context (or *ex-situ*), while many of the more coherent scatters fall outside the revised development footprint.

11. Conclusion

The study has captured a good record of the archaeological heritage present on the proposed development site. Indications are that, in terms of archaeological heritage, the receiving environment is not a very sensitive or threatened landscape. The impact significance of the proposed development on important archaeological heritage is therefore assessed as LOW.

Therefore, there are no objections to the authorization of the proposed vineyard development.

12. Recommendations

1. No mitigation is required prior to development activities commencing.
2. A buffer of 10m must be established around the recorded grave (Site 891). Alternatively, the grave must be fenced off prior to development commencing.
3. Should any unmarked human burials/remains or ostrich eggshell water flask caches be uncovered, or exposed during preparation of the lands for cultivation, these must immediately be reported to the archaeologist (Jonathan Kaplan 082 321 0172), or the South African Heritage Resources Agency (Ms Natasha Higgitt 021 462 4502). Burials, etc. must not be removed or disturbed until inspected by the archaeologist.
4. The above recommendations must be incorporated into the Environmental Management Plan (EMP) for the proposed development

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1. INTRODUCTION

ACRM was appointed by Pieter Badenhorst Professional Services on behalf of Oseiland Eiendom (Pty) Ltd to conduct an Archaeological Impact Assessment (AIA) for a proposed vineyard development on Farm 1726 Renosterkop, Farm 1290 and Farm 1537 Augrabies (Kai! Garib Municipality), near Kakamas in the Bushmanland region of the Northern Cape (Figures 1 & 2).

The proposed agricultural development will cover a footprint area of about 77 ha. Water for the new vineyards will be supplied from a pump station located on the banks of the Orange River. The vineyards will be supplied with water via a 3.2km long buried pipeline placed alongside existing gravel farm roads.

The property is currently zoned Agriculture. Existing access roads will be used, and no new access roads will be constructed. The farm is approximately 1km from the Orange / Gariep River.

Eight fairly contiguous portions of land (Blocks 1-8) have been identified for the new vineyard development (Figure 3). These have mostly been determined by the botanical constraints study.

The AIA forms part of an Environmental Impact Assessment (EIA) process that is being conducted by Pieter Badenhorst Professional Services.

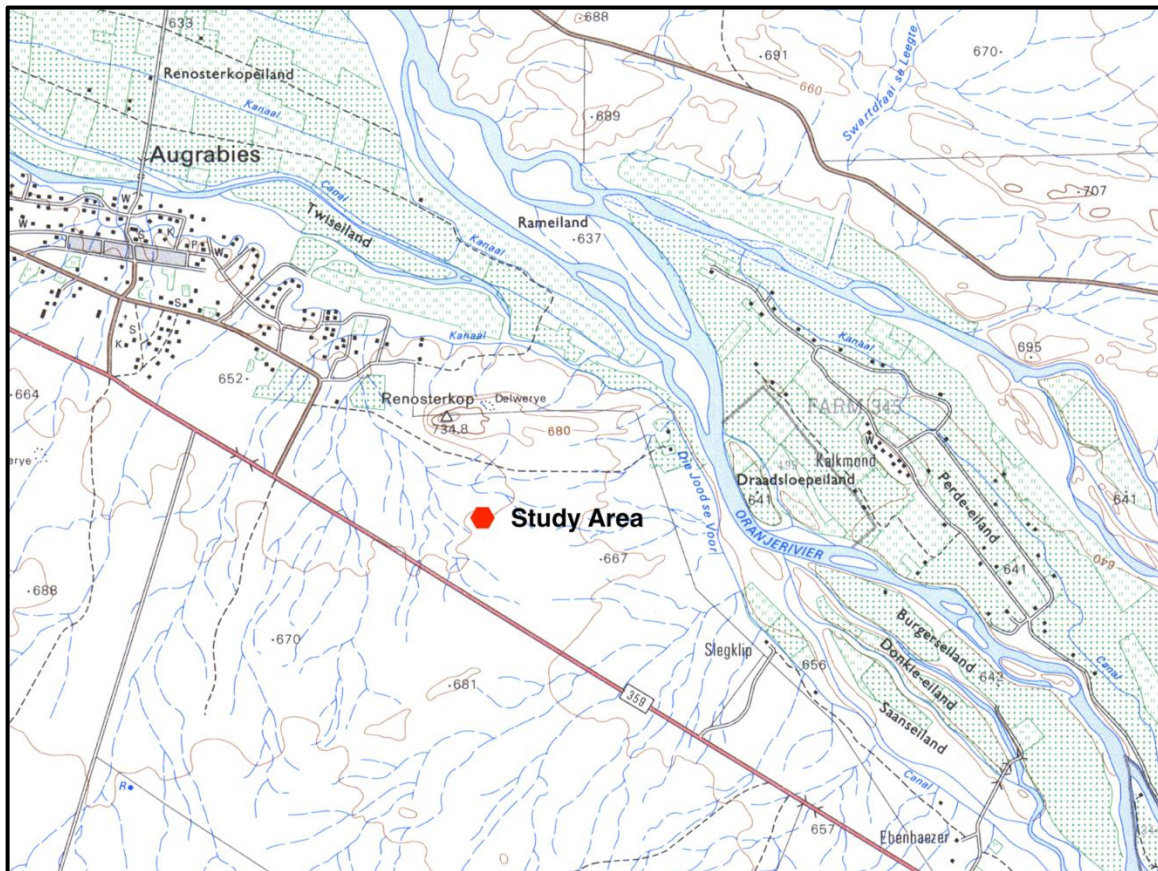


Figure 1. Locality Map. Red polygon illustrates the location of the study area

Archaeological Impact Assessment, proposed agricultural development on Farm 1726, Farm 1290 and Farm 1537 Augrabies, Northern Cape



Figure 2. Google image illustrating the location of the proposed development site (red polygon) in relation to Augrabies Falls National Park and the small town of Kakamas.

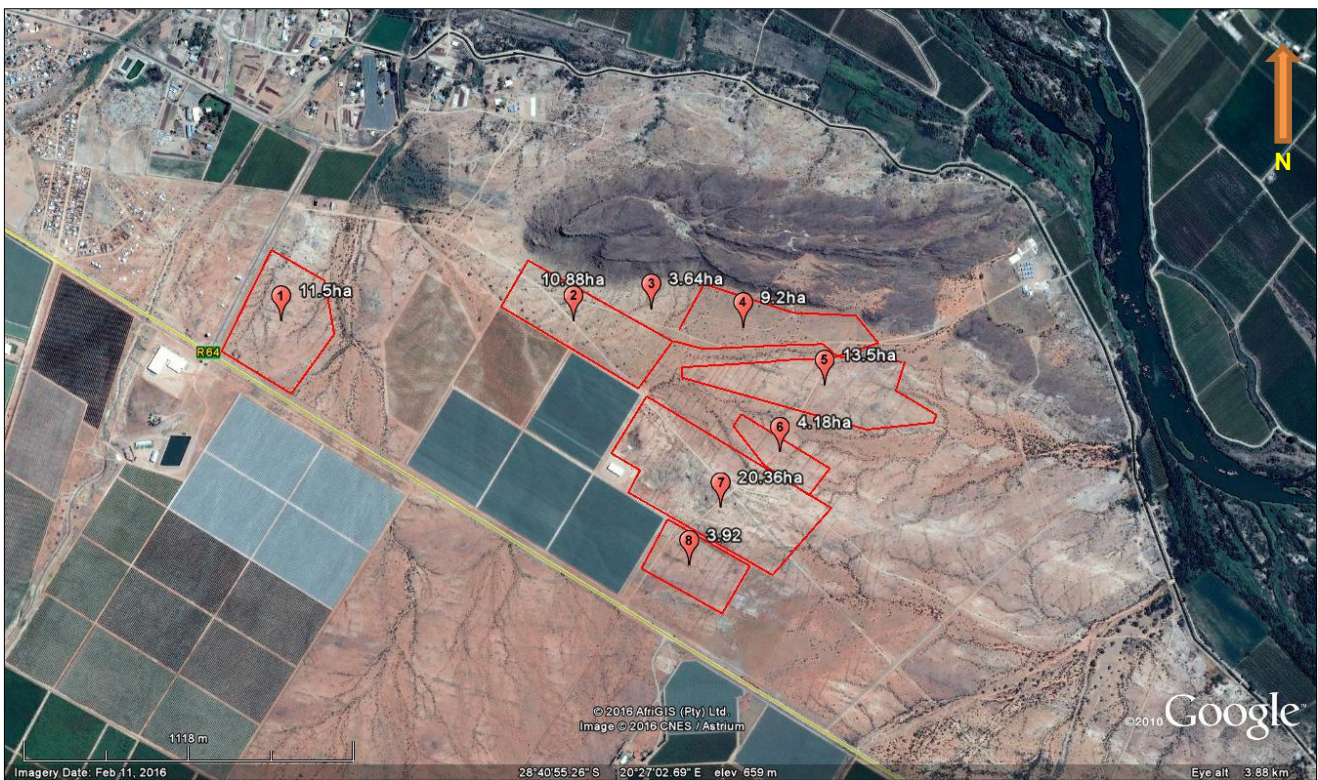


Figure 3. Google satellite map of the proposed development site. Note that Block 1 was not searched as it was only identified after the archaeological assessment had been concluded

2. HERITAGE LEGISLATION

The National Heritage Resources Act (Act No. 25 of 1999) makes provision for a compulsory Heritage Impact Assessment (HIA) when an area exceeding 5000 m² is being developed. This is to determine if the area contains heritage sites and to take the necessary steps to ensure that they are not damaged or destroyed during development.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37);
- 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) (Section 2 (d) (xxi)).

Section 38 (1) (a) of the Act specifically indicates that any person constructing a powerline, pipeline or road, or similar linear development or barrier exceeding 300m in length is required to notify the responsible heritage resources authority, who will in turn advise whether an impact assessment report is needed before development can take place.

3. TERMS OF REFERENCE

The terms of reference for the archaeological study were to:

- Determine whether there are likely to be any important archaeological resources that may potentially be impacted by the proposed development;
- Indicate any constraints that would need to be taken into account in considering the development proposal;
- Identify potentially sensitive archaeological areas, and
- Recommend any further mitigation action.

4. THE STUDY SITE

The study site is part of the Farm Renosterkop 1726, and is situated on the right hand side (i. e. north) of the R64/MR359, approximately 2kms before one enters the small town of Augrabies. It lies immediately south east of the town, and northwest of the settlement known as Marchand. The affected landholdings (refer to Figure 3) are located between the tar road and Renosterkop Peak, a prominent inselberg which more or less defines the northern boundary of the proposed development site, and south of the Orange River. The inselberg is the only significant landscape feature in an otherwise flat and fairly featureless landscape. Numerous ephemeral streams dissect the site, mostly in the east, but these have been excluded from the proposed development layout.

The terrain is generally flat, sloping gently from the base of Renosterkop Peak. Soils consist of shallow red sandy topsoils, with large exposed/wind eroded surface gravels. Small outcrops of rocks occur in places. The predominant vegetation is tufts of yellow grassland, with scattered low and mid high shrubs such as thorny blackthorn. Isolated trees occur in places on the open plains (Figures 4-7).

Large areas of the study site (e. g. Block 8) are severely degraded. The landholdings alongside the R64 have been heavily ripped by bulldozers when, this area was being prepared for cultivation. East of the new site office (i. e. Block 7); deep excavations and large gravel dumps dominate the arid landscape, which were historically subjected to intensive diamond prospecting. Extensive drainage channels (visible on Google Earth) have also been excavated across most of Block 2 and Blocks 5-8 (refer to Figure 3).

Apart from Renosterkop Peak, there are no other significant landscape features on the proposed development site. The Orange River is located about a kilometre from the proposed new vineyards. Surrounding land use is agriculture (vineyards & citrus), roads, residential, and vast tracts of vacant agricultural land.



Figure 4. Block 2. Panoramic view of the study site. View facing east. Note the extensive gravels below Renosterkop Peak



Figure 5. Panoramic view of the study site from the base of Renosterkop Peak. View facing south west



Figure 6. Block 8. Panoramic view of the study site. View facing north from the R64.



Figure 7. Block 8. Panoramic view of the study site. View facing north from the R64. Note the heavily ripped fields

5. STUDY APPROACH

5.1 Method of survey

The overall purpose of the HIA is to assess the sensitivity of archaeological resources in the affected area, to determine the potential impacts on such resources and to avoid and/or minimize such impacts by means of management and/or mitigation measures.

The significance of archaeological resources was assessed in terms of their content and context. Attributes considered in determining significance include artefact and/or ecofact types, rarity of finds, exceptional items, organic preservation, potential for future research, density of finds and the context in which archaeological traces occur.

Survey track paths were captured and the position of identified archaeological occurrences was fixed by a hand held GPS unit set on the map datum WGS 84 (Figures 8-11). A literature survey was also carried out to assess the archaeological context surrounding the proposed development site.

5.2 Constraints and limitations

Access to the site was easy and archaeological visibility was very good.

It is important to note that the layout of the proposed vineyard development was changed since the field assessment was done in August 2016. An 11.4ha area of land alongside the R359 (i. e. Block 1) was not searched for archaeological remains. However, given the overall results of the study, and the disturbed context in which most of the archaeological resources were recorded, indications are that the affected piece of land is not likely to be a sensitive archaeological landscape. The possibility that a grave(s) may occur on the proposed site cannot be discounted. However, this is considered to be unlikely as the soils here are made up of extremely hard gravels and not conducive for internment of bodies.

5.3 Identification of potential risks

While a relatively large number of archaeological resources (i. e. stone implements) were found, these comprise mostly single isolated finds, with a few dispersed scatters of tools occurring in places (mostly outside the proposed development site). It is maintained that the study has captured a good record of the archaeological heritage present on the proposed development site.

A pre-colonial grave (Site 891) was found at the base of Renosterkop Peak and must be protected throughout the operational phase of the proposed agricultural development.

5.4 Results of the desk top study

The archaeology of the Northern Cape is rich and varied, covering long spans of human history. According to Beaumont *et al* (1995:240) “thousands of square kilometres of Bushmanland are covered by a low density lithic scatter”.

Some archaeological work has been done in the Augrabies area (mainly impact assessments as part of the EIA process), while Morris and Beaumont (1991) undertook

a combined impact assessment and mitigation of sites on Renosterkop Peak, also known (historically), to pre-colonial local Namneiqua pastoralists as !Nawabdanas. Several, mostly low-density surface scatters of Middle (MSA) and Later Stone Age (LSA) material were identified on and around the hill, which is also the site of the historic Renosterkop Tin Mine (circa 1940). Archaeological investigation of a Ceramic LSA surface scatter (Renosterkop 1) and a small LSA rock shelter (Renosterkop 2) were undertaken by Morris and Beaumont (1991), who showed that the two sites likely pre-date the late 18th Century. Morris and Beaumont (1991) were also able to show, based on extensive historical research, a rapidly changing cultural and linguistic landscape from as early as the mid 1700's, up until the violent Northern Border (frontier) War of 1869/9.

In the wider region, Orton (2012) recorded low density scatters of LSA, MSA and ESA tools during a survey for a proposed solar energy farm near the Augrabies Falls National Park about 12kms from Renosterkop. Orton (2012) also describes a Stone Age sequence in the Augrabies Falls area where much of the information has been generated by excavations of open scatters containing stone tools, pottery and ostrich eggshell, as well as excavations of several small shelters near the falls, and the town of Augrabies (Morris & Beaumont 1991).

Small numbers of MSA tools were also documented by Van Schalkwyk (2013) during a HIA for a township development near Augrabies, while Pelsler (2012) recorded small numbers of LSA as well as ESA implements during an AIA for a solar energy farm near the National Park. Several other impact assessment reports were not available on the SAHRIS website (e.g. Van Schalkwyk 2011, & Beaumont 2008).

Morris and Beaumont (1991) also note that many skeletons, most dating to the 18th and 19th Centuries were exhumed from the area, along the banks of the Orange River near Augrabies in the late 1930s.

Finally, Morris (2014; Morris & Beaumont 1991) notes that there are substantial herder encampments along the floodplain of the Orange River, but these tend to be short duration visits by small groups of hunter-gatherers. Most of these camps have, however, been destroyed by intensive farming alongside the river.

6. FINDINGS

A 3-day foot survey of the proposed development site, including associated activities (i.e. pump station & pipeline route) was undertaken by ACRM in October 2016. Track paths and archaeological occurrences recorded during the survey are illustrated in Figures 8-11. A spreadsheet of waypoints and a description of archaeological finds are presented in Table 1.

A relatively large number of archaeological resources were documented during the study, but these are spread very thinly and unevenly over the surrounding landscape. Most of the implements comprise single, isolated finds, but dispersed (low & medium density) scatters of tools were also encountered on extensive surface gravels below Renosterkop Peak. However, the more coherent scatters were recorded outside the revised footprint area (Sites 927-932), not surprisingly, alongside the numerous dendritic drainage lines (refer to Figure 11).

The majority of the tools encountered are assigned to the LSA, while a few MSA flakes (Sites 972, 973, 876, 927-929, 998 & 1006), blade tools (Sites 910 & 924) and points (Sites 877 & 986), in indurated shale, banded ironstone and quartzite, were also found. No Early Stone Age (ESA) implements were encountered during the study.

More than 95% of the tools documented are made on locally available, fine-grained banded ironstone, which is a favoured raw material on many sites in the Northern Cape. Many pieces of unworked banded ironstone pebbles and quartz were encountered on some of the surface gravels. The remainder are in indurated shale, chert, quartzite and quartz. Quartz outcrops locally and pebbles of chalcedony and banded ironstone are derived from an older gravel/Dwyka tillite flushed from an area on top of Renosterkop Peak (Morris & Beaumont 1991).

Most of the tools comprise unmodified, utilised and miscellaneous retouched pieces, flakes and chunks, while a smaller number of cores were also found. Cortex flakes and chunks were also identified. Most of the cores are in banded ironstone, but several cores in quartz (Sites 887, 943 & 990) and chert (Site 906) were also noted. No formal retouched tools such as scrapers, points, backed pieces, awls or adzes were found, although many of the implements display scraper-type secondary retouch, occasional backing, and step flake retouch, and are best described as crude and unstandardized tools. One possible quartz point (Site 889) was found. One anvil (Site 977) was found, but no hammerstones or grindstones were noted. No organic remains such as pottery or bone were encountered, but two small fragments of weathered ostrich eggshell (Sites 888 & 896) were recorded.

Most of the tools recorded, occur *ex-situ* on exposed gravels, where the top soils have either eroded/washed away, or have been scraped by heavy plant machinery. Extensive channels (clearly visible on Google Earth) have also been excavated across much of the proposed development site. The south eastern portion of the farm alongside the R64, particularly has been heavily ripped by bulldozers while the landholdings east of the new site office/parking complex (Farm 1726), was historically, subjected to intensive diamond prospecting where large spoil dumps of gravel and excavations are visible over the transformed landscape.

As archaeological sites are concerned, most of the occurrences are lacking in context. While several dispersed scatters of tools were recorded, mostly outside the proposed footprint area, no evidence of any factory or workshop site, or the result of any human settlement was identified within the proposed development site. It is maintained that most of the archaeological remains therefore comprise discarded flakes, flake debris and debitage.

A collection of tools documented during the study and the context in which they were found are illustrated in Figures 12-29.

6.1 Grading of archaeological resources

Overall, despite the relatively large numbers of tools that were, recorded during the study, the mostly disturbed context in which they were found, means that the archaeological remains have been graded as having *low* (Grade 3C) significance.

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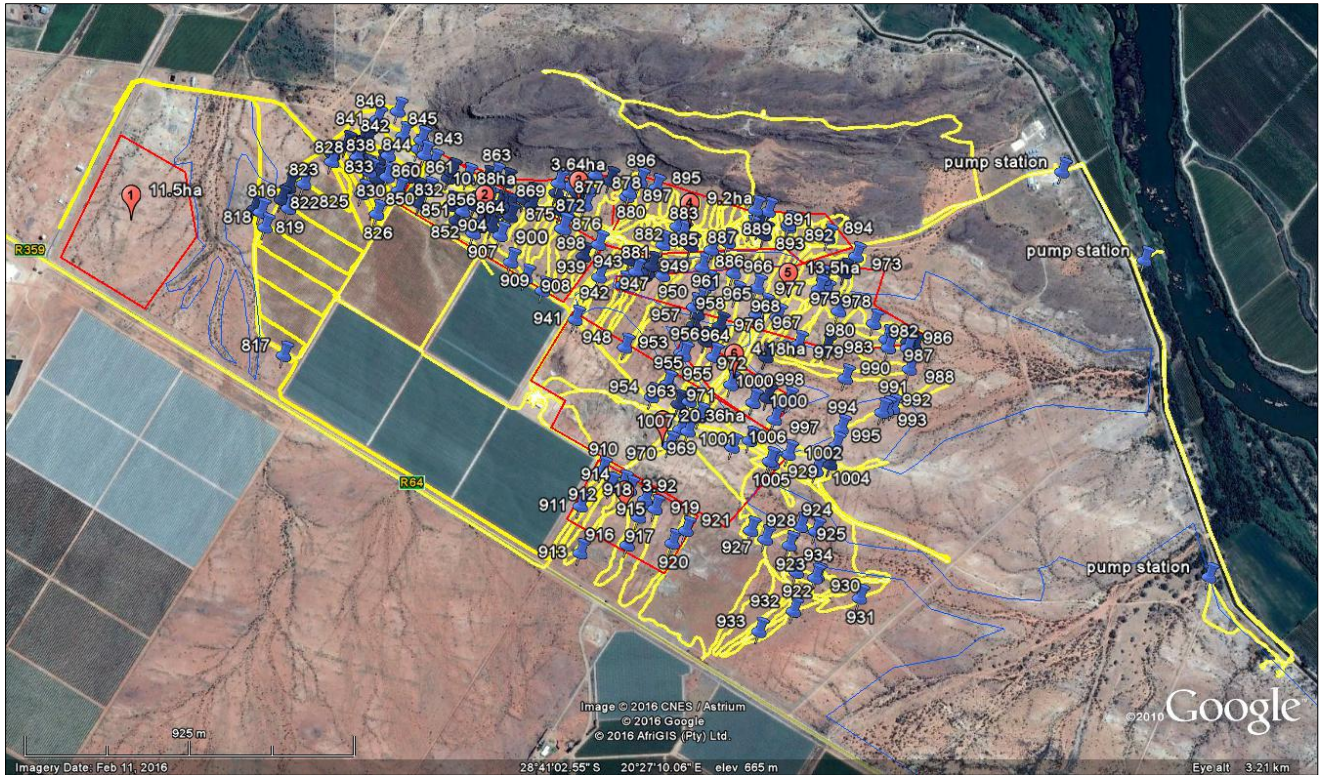


Figure 8. Google satellite map of the proposed development site, including waypoints of archaeological finds and survey track paths (in yellow)

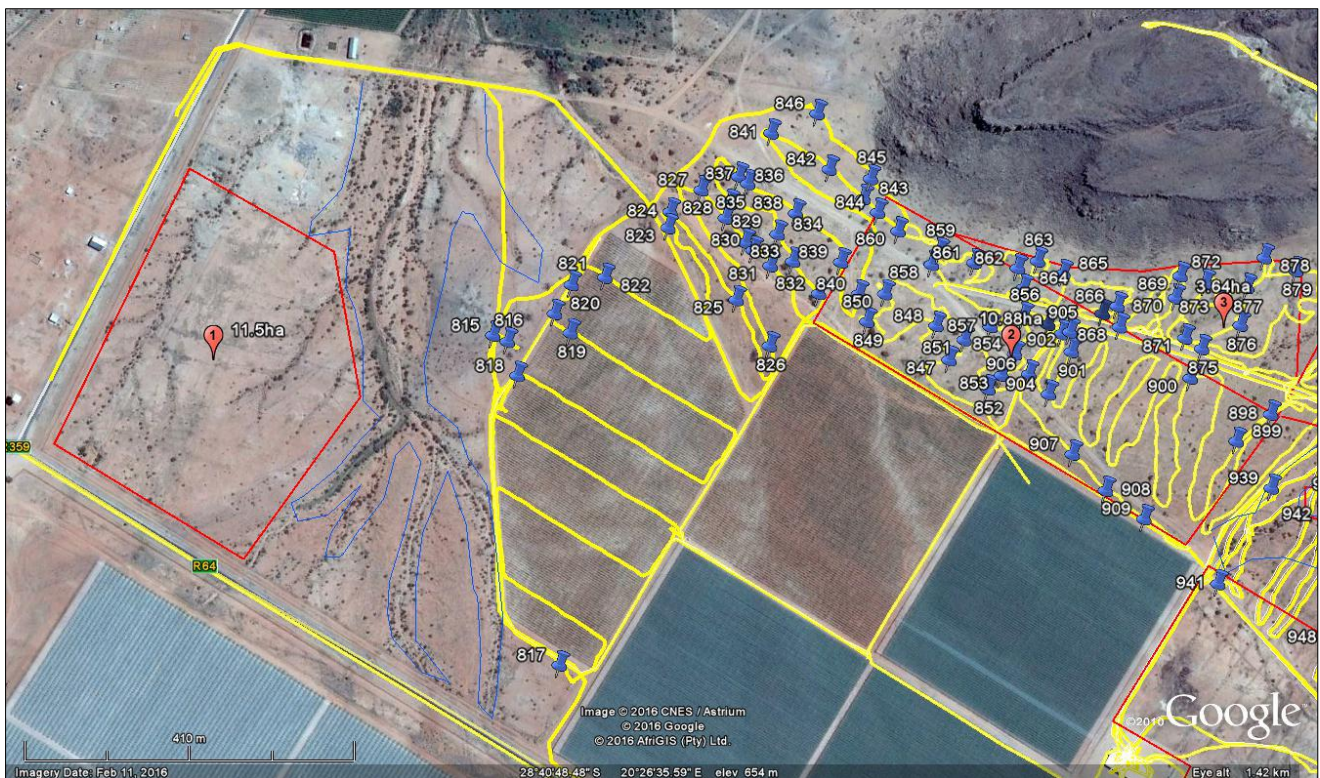


Figure 9. Close up Google satellite map of the proposed development site, including waypoints of archaeological finds and survey track paths (in yellow)

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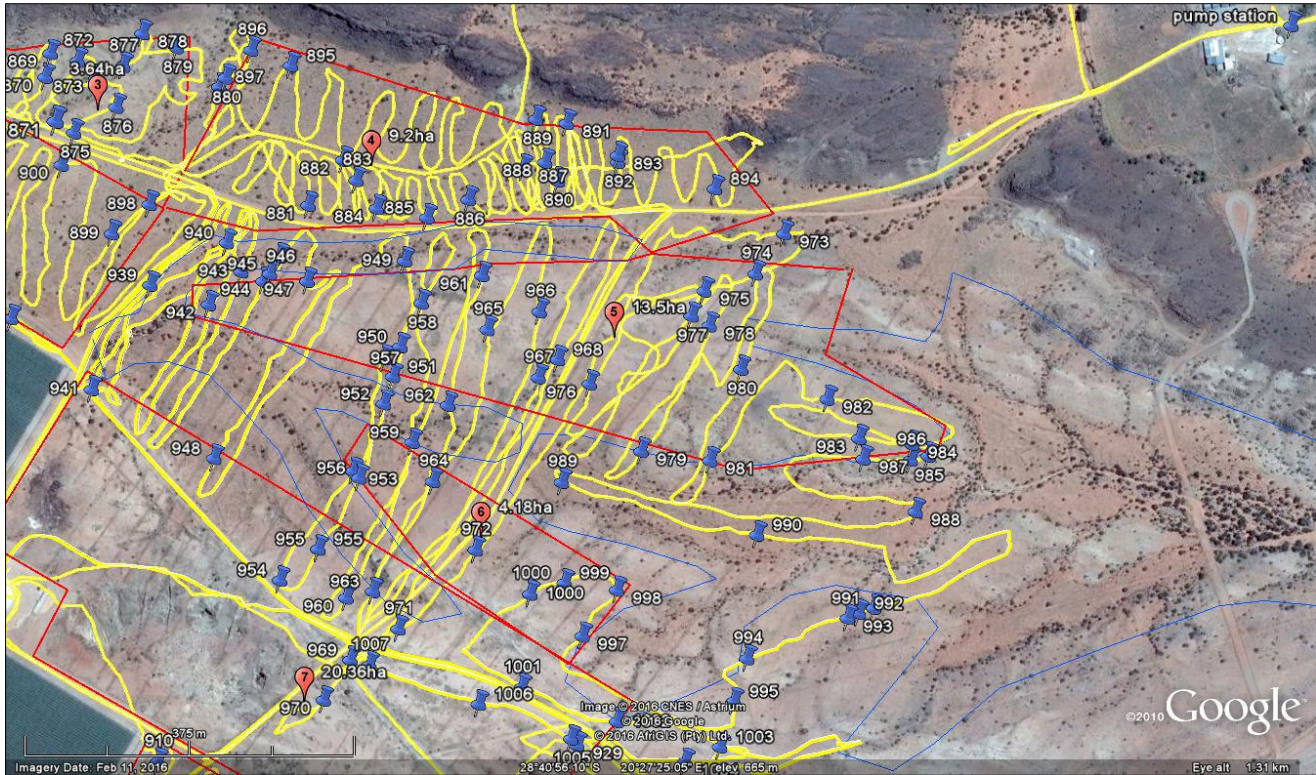


Figure 10. Close up Google satellite map of the proposed development site, including waypoints of archaeological finds and survey track paths (in yellow)



Figure 11. Close up Google satellite map of the proposed development site, including waypoints of archaeological finds and survey track paths (in yellow)

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1290 and Farm 1537 Augrabies, Northern Cape

Site	Farm name	Lat/long	Description of finds	Grading	Suggested mitigation
	Farm 1726 Renosterkop		All in banded ironstone unless otherwise stated		
815		S28° 40.767' E20° 26.464'	Retouched flake	3C	None required
816		S28° 40.772' E20° 26.475'	Retouched flake	3C	None required
817		S28° 40.989' E20° 26.515'	Retouched chunk	3C	None required
818		S28° 40.795' E20° 26.482'	Chunk	3C	None required
819		S28° 40.766' E20° 26.523'	Utilized flake	3C	None required
820		S28° 40.753' E20° 26.511'	Retouched flake	3C	None required
821		S28° 40.734' E20° 26.524'	Chunk and flake	3C	None required
822		S28° 40.729' E20° 26.550'	Chunk	3C	None required
823		S28° 40.695' E20° 26.598'	Flaked chunk/cobble	3C	None required
824		S28° 40.685' E20° 26.599'	Core	3C	None required
825		S28° 40.744' E20° 26.650'	Core/broken chunk	3C	None required
826		S28° 40.774' E20° 26.675'	Quartz chunk	3C	None required
827		S28° 40.670' E20° 26.623'	Thin, punch-struck utilised flake/bladelet	3C	None required
828		S28° 40.689' E20° 26.642'	Large core	3C	None required
829		S28° 40.705' E20° 26.657'	Broken core/chunk	3C	None required
830		S28° 40.710' E20° 26.663'	2 utilised/retouched flakes & round core	3C	None required
831		S28° 40.721' E20° 26.676'	Chunk, 2 flakes	3C	None required
832		S28° 40.739' E20° 26.713'	Flake	3C	None required
833		S28° 40.718' E20° 26.693'	Dispersed (low density) scatter of tools on surface gravels, including utilized/retouched flakes, chunks	3C	None required
834		S28° 40.700' E20° 26.681'	Same as above, low density scatter of tools in surface gravels, including chunks, flakes, utilised, retouched pieces	3C	None required
835		S28° 40.679' E20° 26.645'	Utilised/retouched flake	3C	None required
836		S28° 40.661' E20° 26.652'	Pebble/chunk	3C	None required
837		S28° 40.666' E20° 26.659'	Dispersed (low density) scatter of tools on surface gravels	3C	None required
838		S28° 40.686' E20° 26.695'	Dispersed (low density) scatter of tools on surface gravels / possibly scraped	3C	None required
839		S28° 40.718' E20° 26.730'	Same as above	3C	None required
840		S28° 40.740' E20° 26.744'	Same as above	3C	None required
841		S28° 40.632' E20° 26.677'	Same as above, including indurated shale flake & round core	3C	None required
842		S28° 40 394' E20 26.433'	Same as above – low density	3C	None required
843		S28° 40.676' E20° 26.747'	Same as above – low density	3C	None required
844		S28° 40.685' E20° 26.758'	Medium density scatter, on extensive surface gravels	3C	None required
845		S28° 40.662' E20° 26.753'	Same as above	3C	None required

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846		S28° 40.619' E20° 26.712'	Same as above	3C	None required
847		S28° 40.784' E20° 26.813'	Dispersed scatter of tools on surface gravels	3C	None required
848		S28° 40.761' E20° 26.803'	Same as above	3C	None required
849		S28° 40.758' E20° 26.750'	Same as above	3C	None required
850		S28° 40.740' E20° 26.764'	Medium-higher density scatter of tools on surface gravels, including utilised/retouched flakes, some quartz	3C	None required
851		S28° 40.770' E20° 26.824'	Dispersed (low density) scatter of tools surface gravels, including chunks, utilised/retouched flakes & round core.	3C	None required
852		S28° 40.804' E20° 26.842'	Blade & flake	3C	None required
853		S28° 40.794' E20° 26.853'	Dispersed – low density scatter on surface gravels	3C	None required
854		S28° 40.780' E20° 26.863'	Same as above	3C	None required
855		S28° 40.760' E20° 26.888'	Same as above	3C	None required
856		S28° 40.755' E20° 26.870'	Same as above	3C	None required
857		S28° 40.762' E20° 26.844'	Same as above	3C	None required
858		S28° 40.720' E20° 26.799'	Same as above	3C	None required
859		S28° 40.711' E20° 26.805'	Same as above, including weathered indurated shale chunk & core-reduced flake (slightly higher density)	3C	None required
860		S28° 40.698' E20° 26.774'	Dispersed scatter around small outcrop at base of Renosterkop Peak. Low / medium density scatter including retouched & utilised flakes, chunks	3C	None required
861		S28° 40.719' E20° 26.832'	Low density dispersed scatter	3C	None required
862		S28° 40.722' E20° 26.865'	Same as above	3C	None required
863		S28° 40.718' E20° 26.880'	Slightly lower density scatter on red sandy slope	3C	None required
864		S28° 40.736' E20° 26.869'	Low density scatter on red sandy slopes	3C	None required
865		S28° 40.726' E20° 26.900'	Same as above	3C	None required
866		S28° 40.748' E20° 26.941'	Same as above	3C	None required
867		S28° 40.753' E20° 26.930'	Same as above, including occasional quartz, chunk, flake, core & porphyry	3C	None required
868		S28° 40.762' E20° 26.943'	Low density scatter on surface gravels, including indurated shale (alongside road)	3C	None required
869		S28° 40.728' E20° 26.989'	Low density scatter on upper red sandy slopes below Renosterkop	3C	None required
870		S28° 40.742' E20° 26.986'	Dispersed scatter on surface gravels/? Scraped	3C	None required
871		S28° 40.769' E20° 26.993'	Low-density dispersed	3C	None required

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			scatter on surface gravels included MSA prepared platform		
872		S28° 40.732' E20° 27.008'	Low density, mostly isolated tools on upper red sandy slopes at base of Renosterkop	3C	None required
873		S28° 40.743' E20° 27.021'	Low-density scatter – same as above including quartz & MSA flake	3C	None required
874		S28° 40.743' E20° 27.021'	-	3C	None required
875		S28° 40.776' E20° 27.006'	Isolated tools on gravel surface gravel	3C	None required
876		S28° 40.761' E20° 27.035'	Low-density, dispersed scatter on extensive surface gravels, also weathered indurated shale MSA	3C	None required
877		S28° 40.736' E20° 27.040'	Pointed MSA flake	3C	None required
878		S28° 40.715' E20° 27.054'	Dispersed scatter on base of mountain	3C	None required
879		S28° 40.724' E20° 27.078'	Medium density scatter on slope below mountain.	3C	None required
880		S28° 40.743' E20° 27.112'	Flake	3C	None required
881		S28° 40.821' E20° 27.170'	Flake	3C	None required
882		S28° 40.793' E20° 27.194'	Chunk & flake	3C	None required
883		S28° 40.806' E20° 27.203'	Utilized/retouched flake	3C	None required
884		S28° 40.823' E20° 27.218'	Chunk and 2 flakes utilized/retouched	3C	None required
885		S28° 40.829' E20° 27.253'	Dispersed scatter, including vein quartz flake on surface gravels	3C	None required
886		S28° 40.818' E20° 27.282'	Dispersed scatter, including on surface gravels including large indurated shale flake	3C	None required
887		S28° 40.798' E20° 27.320'	Quartz core. Red sands, tufts of grass and sporadic trees	3C	None required
888		S28° 40.795' E20° 27.336'	Ostrich egg-shell fragment	3C	None required
889		S28° 40.768' E20° 27.329'	Indurated shale flake, quartz point, quartz chunk, indurated shale chunk, low density dispersed scatter	3C	None required
890		S28° 40.806' E20° 27.344'	Banded ironstone flake, quartz chunk & flakes	3C	None required
891		S28° 40.771' E20° 27.351'	GRAVE	3C	None required
892		S28° 40.771' E20° 27.351'	Banded ironstone flake	3C	None required
893		S28° 40.791' E20° 27.386'	Indurated shale, cobble/core	3C	None required
894		S28° 40.811' E20° 27.454'	Flake	3C	None required
895		S28° 40.735' E20° 27.158'	Flake & cortex/cobble chunk on red sands	3C	None required
896		S28° 40.726' E20° 27.130'	Fragment of ostrich egg shell	3C	None required

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897		S28° 40.748' E20° 27.107'	Dispersed scatter of tools on red sands and surface gravels. Manuports chunks, flakes (see Site 880)	3C	None required
898		S28° 40.821' E20° 27.059'	Quartz flake	3C	None required
899		S28° 40.839' E20° 27.032'	Indurated shale flake	3C	None required
900		S28° 40.796' E20° 26.997'	Dispersed scatter of tools on surface alongside excavated trench	3C	None required
901		S28° 40.778' E20° 26.906'	Chunk & flake	3C	None required
902		S28° 40.765' E20° 26.905'	Dispersed scatter of tools on surface gravels	3C	None required
903		S28° 40.807' E20° 26.889'	Flake on surface gravels	3C	None required
904		S28° 40.807' E20° 26.889'	Weathered MRP	3C	None required
906		S28° 40.794' E20° 26.874'	Cortex chunk & chert cobble core	3C	None required
907		S28° 40.847' E20° 26.907'	Dispersed scatter of tools between road and tunnel on gravelly red sands & diggings/drainage trench/spoil dump	3C	None required
908		S28° 40.872' E20° 26.932'	Flake and chunk (alles opgemeng) around spoil dumps. The whole area is degraded	3C	None required
909		S28° 40.891' E20° 26.962'	Lots of road gravel, loose piles of stone, pebbles, chunks and occasional flake	3C	None required
910		S28° 41.163' E20° 27.064'	Wide strip of gravel alongside vineyards. Lots of banded ironstone pebbles/cobbles. Some worked, including flakes, chunks, cores but LOW density dispersed MSA blade. Surrounding area very disturbed. scraped roads	3C	None required
911		S28° 41.217' E20° 27.027'	Fields are heavily ripped, mainly dispersed and isolated tools on extensive gravels. Diggings, piles, ripped fields, excavated drainage lines. Large piles of spoil. Ripped top-to-bottom, almost entirely: totally degraded.	3C	None required
912		S28° 41.187' E20° 27.079'	Same as above -	3C	None required
913		S28° 41.288' E20° 27.026'	Same as above	3C	None required
914		S28° 41.184' E20° 27.100'	Same as above	3C	None required
916		S28° 41.193' E20° 27.112'	Same as above	3C	None required
917		S28° 41.234' E20° 27.127'	Same as above	3C	None required
918		S28° 41.207' E20° 27.139'	Same as above	3C	None required
919		S28° 41.221' E20° 27.156'	Same as above	3C	None required

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920		S28° 41.274' E20° 27.185'	Same as above	3C	None required
921		S28° 41.254' E20° 27.209'	Same as above	3C	None required
922		S28° 41.317' E20° 27.400'	Flake and chunk on extensive surface gravels	3C	None required
923		S28° 41.277' E20° 27.388'	Occasional flake and chunk on exposed gravels. Large numbers of ironstone pebbles.	3C	None required
924		S28° 41.255' E20° 27.433'	Quartz flake and indurated shale blade (MSA).	3C	None required
925		S28° 41.248' E20° 27.407'	Chunk & quartz flake.	3C	None required
927		S28° 41.267' E20° 27.346'	Lots of quartz stone alongside ripped fields and gravel road. Surface gravels; isolated and dispersed scatter of tools, including indurated shale (MSA).	3C	None required
928		S28° 41.254' E20° 27.321'	Thin scatter of tools on surface gravels, including large round core, chunks, flat flake, utilised and retouched chunks. Lots of smooth banded ironstone pebbles/stone, quartzite chunk, MSA quartzite flake (prepared platform)	3C	None required
929		S28° 41.153' E20° 27.358'	Dispersed scatter of tools on surface gravels; diggings, scrapings, spoil dump, ripped drainage channels, MSA quartzite flake.	3C	None required
930		S28° 41.326' E20° 27.432'	Low-density scatter of stone age flakes on sandy slope. Tufts of grass	3C	None required
931		S28° 41.357' E20° 27.509'	Scatter of flakes on exposed gravels.	3C	None required
932		S28° 41.376' E20° 27.395'	Low density scatter on exposed gravels	3C	None required
933		S28° 41.407' E20° 27.335'	Vein quartz flake	3C	None required
934		S28° 41.324' E20° 27.435'	Indurated shale, banded ironstone, quartzite core. Chunks on red sands, along drainage channel (refer to Site 930).	3C	None required
936		S28° 40.845' E20° 28.001'	Chunk	3C	None required
937		S28° 41.324' E20° 28.112'	Flake	3C	None required
938		S28° 40.711' E20° 27.858'	Flake utilized/retouched	3C	None required
939		S28° 40.870' E20° 27.059'	Quartz flake, red sands, tufts of grass, quartz chunks	3C	None required
940		S28° 40.844' E20° 27.113'	Ironstone chunk	3C	None required
941		S28° 40.934' E20° 27.018'	Dispersed scatter of tools on surface gravels	3C	None required

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			alongside road. Chunks, quartz flake, quartz core.		
942		S28° 40.882' E20° 27.100'	Indurated shale flake	3C	None required
943		S28° 40.862' E20° 27.123'	Quartz core	3C	None required
944		S28° 40.868' E20° 27.138'	Chunk/cortex cobble	3C	None required
945		S28° 40.863' E20° 27.143'	Large ironstone chunk	3C	None required
946		S28° 40.853' E20° 27.150'	Chunk	3C	None required
947		S28° 40.868' E20° 27.169'	Isolated tools on extensive surface gravels of quartz	3C	None required
948		S28° 40.977' E20° 27.104'	Flake	3C	None required
949		S28° 40.855' E20° 27.237'	Chunk & flake	3C	None required
950		S28° 40.908' E20° 27.234'	Isolated tools on extensive surface gravels	3C	None required
951		S28° 40.926' E20° 27.229'	Dispersed scatter of tools including, flakes, chunk, manuports	3C	None required
952		S28° 40.943' E20° 27.223'	Small flake	3C	None required
953		S28° 40.984' E20° 27.201'	Several flakes on surface gravel	3C	None required
954		S28° 41.052' E20° 27.150'	Dispersed low-density scatter of isolated tools on extensive surface gravels	3C	None required
955		S28° 41.032' E20° 27.177'	Same as above	3C	None required
956		S28° 40.989' E20° 27.205'	Same as above	3C	None required
957		S28° 40.915' E20° 27.223'	Same as above	3C	None required
958		S28° 40.881' E20° 27.249'	Same as above	3C	None required
959		S28° 40.967' E20° 27.243'	Same as above	3C	None required
960		S28° 41.063' E20° 27.196'	Same as above	3C	None required
961		S28° 40.864' E20° 27.291'	Same as above	3C	None required
962		S28° 40.944' E20° 27.267'	Same as above	3C	None required
963		S28° 41.058' E20° 27.215'	Same as above	3C	None required
964		S28° 40.991' E20° 27.257'	Same as above	3C	None required
965		S28° 40.898' E20° 27.295'	Same as above	3C	None required
966		S28° 40.887' E20° 27.332'	Same as above, including large quartzite core/chunk	3C	None required
967		S28° 40.927' E20° 27.331'	Low-density scatter of isolated tools alongside road on surface gravels	3C	None required
968		S28° 40.916' E20° 27.344'	Low-density scatter of isolated tools alongside road on surface gravels	3C	None required
969		S28° 41.101' E20° 27.199'	Same as above	3C	None required
970		S28° 41.125' E20° 27.180'	Same as above	3C	None required
971		S28° 41.082' E20° 27.233'	Same as above	3C	None required
972		S28° 41.033' E20° 27.287'	Same as above	3C	None required
973		S28° 40.839' E20° 27.503'	Same as above	3C	None required
974		S28° 40.863' E20° 27.483'	Worked out core alongside drainage channel	3C	None required
975		S28° 40.874' E20° 27.447'	Isolated tools alongside drainage channel	3C	None required
976		S28° 40.931' E20° 27.367'	Same as above	3C	None required
977		S28° 40.889' E20° 27.438'	Quartzite chunk/?miscellaneous grindstone/Anvil	3C	None required

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978		S28° 40.895' E20° 27.451'	Core	3C	None required
979		S28° 40.972' E20° 27.403'	Chunk	3C	None required
980		S28° 40.922' E20° 27.473'	2 flakes	3C	None required
981		S28° 40.978' E20° 27.451'	Large chunk/core	3C	None required
982		S28° 40.940' E20° 27.533'	Quartzite cobble chunk	3C	None required
983		S28° 40.964' E20° 27.555'	Indurated shale flake & cobble chunk/core	3C	None required
984		S28° 40.968' E20° 27.593'	Indurated shale / cortex cobble flake	3C	None required
985		S28° 40.975' E20° 27.604'	Small flake	3C	None required
986		S28° 40.978' E20° 27.591'	Large, bifacial retouched MSA point & broken flake	3C	None required
987		S28° 40.977' E20° 27.558'	Ironstone chunk	3C	None required
988		S28° 41.009' E20° 27.595'	Cobble cortex core	3C	None required
989		S28° 40.991' E20° 27.347'	Weathered ironstone chunk/cortex	3C	None required
990		S28° 41.024' E20° 27.484'	Round quartz core	3C	None required
991		S28° 41.069' E20° 27.566'	Core-reduced flake & chunk	3C	None required
992		S28° 41.072' E20° 27.555'	Round core	3C	None required
993		S28° 41.075' E20° 27.547'	Isolated tools on gravels near drainage channel	3C	None required
994		S28° 41.100' E20° 27.477'	Same as above – deep drainage channels	3C	None required
995		S28° 41.126' E20° 27.468'	Same as above – drainage channels	3C	None required
997		S28° 41.086' E20° 27.362'	Same as above & quartzite flaked chunk	3C	None required
998		S28° 41.058' E20° 27.386'	Same as above & MSA flake	3C	None required
999		S28° 41.053' E20° 27.349'	Isolated core, flake chunk – drainage channels	3C	None required
1000		S28° 41.060' E20° 27.325'	Flaked chunk – drainage channels	3C	None required
1001		S28° 41.118' E20° 27.319'	Occasional isolated tools on exposed gravels alongside road	3C	None required
1002		S28° 41.139' E20° 27.386'	Same as above - drainage channels	3C	None required
1003		S28° 41.154' E20° 27.458'	Same as above	3C	None required
1004		S28° 41.163' E20° 27.433'	Same as above	3C	None required
1005		S28° 41.149' E20° 27.354'	Same as above	3C	None required
1006		S28° 41.128' E20° 27.289'	Same as above & MSA quartzite flake	3C	None required
1007		S28° 41.104' E20° 27.213'	Same as above	3C	None required

Table. Spreadsheet of waypoints and description of archaeological finds

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Figure 12. Collection of tools. Scale is in cm



Figure 13. Context in which some of the finds were made



Figure 14. Collection of tools. Scale is in cm



Figure 15. Collection of tools. Scale is in cm



Figure 16. Context in which some of the finds were made



Figure 17. Collection of tools. Scale is in cm

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Figure 18. Context in which some of the finds were made



Figure 19. Collection of tools. Scale is in cm



Figure 20. Context in which some of the finds were made



Figure 21. Collection of tools. Scale is in cm



Figure 22. Context in which some of the finds were made



Figure 23. Collection of tools. Scale is in cm



Figure 24. Collection of tools. Scale is in cm



Figure 25. Collection of tools. Scale is in cm



Figure 26. Anvil/flake chunk (Site 977). Scale is in cm



Figure 27. Collection of tools. Scale is in cm



Figure 28. Collection of tools. Scale is in cm



Figure 29. Collection of tools. Scale is in cm



Figure 30. Context in which some of the tools were found



Figure 31. Context in which some of the tools were found

6.2 Built environment/historical structures

In terms of the built environment, apart from existing farm infrastructure, including a new office/parking/store complex currently being built, no old buildings, structures or features, or any old equipment was found on the proposed development site.

The insubstantial stone walled structures associated with the short lived Renosterkop diamond diggings (1927), and tin/tungsten mining (circa 1940) on Renosterkop Peak (Morris & Beaumont 1991), will not be impacted by the proposed development or associated activities.

6.3 Graves

A single grave (Site 891) was recorded on the soft, red sands at the base of Renosterkop Peak (Figure 32). Comprising a pile of deliberately arranged stone, no head or foot stone is evident, suggesting that the grave is not a Christian burial (Figures 33 & 34). Historical evidence indicates that Renosterkop Peak, also known as! Nawabdanas, was settled by Namneiqua pastoralists, while groups of people, including 'Bastards', 'Kafirs', Korannas and Bushman were reported from the area in the late 1800s. The grave could conceivably belong to any one of these groups. It is also noted that some of the known Kakamas-Augrabies burials were exhumed from the banks of the Orange River at Renosterkop in 1936 (Dreyer & Meiring 1937; Morris & Beaumont 1991). No grave goods such as shell, glass or metal items/containers were found associated with the grave, therefore indicating considerable antiquity. The grave is about 30m from Site 889 which comprises a thin scatter of tools in banded ironstone, indurated shale and quartz.

Graves/burials are graded as having *high* (3A) local significance.

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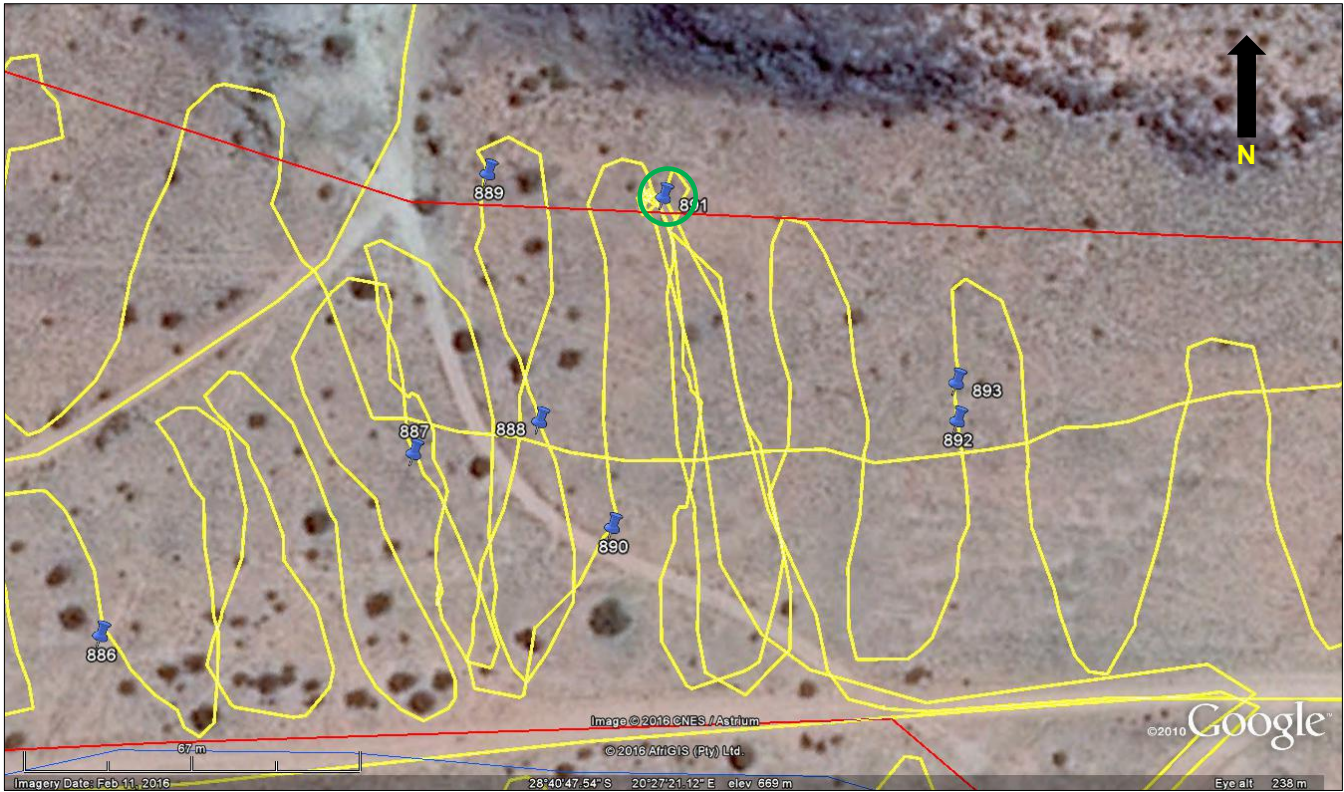


Figure 32. Green polygon indicates the grave (Site 891) at base of Renosterkop Peak. Yellow lines are track paths



Figure 33. Grave (Site 891). View facing south



Figure 34. Grave (Site 891). View facing north west

7. ASSESSMENT OF IMPACTS

In the case of a proposed vineyard development on Farm 1726 Renosterkop, Farm 1290 and Farm 1537, including associated infrastructure (i.e. pump station & water pipeline), it is expected that archaeological impacts will occur during the implementation phase of the project, but that the overall impact on archaeological resources will be *LOW* (Table 2).

Potential impacts on archaeological heritage	
Extent of impact:	Site specific
Duration of impact;	Permanent
Intensity	Low
Probability of occurrence:	Probable
Significance without mitigation	Low
Significance with mitigation	Negative
Confidence:	High

Table 2. Assessment of archaeological impacts.

8. CONCLUSION

The study has captured a good record of the archaeological heritage present on the proposed development site. Indications are that, in terms of archaeological heritage, the affected environment is not a sensitive or threatened landscape. The impact significance of the proposed development on important archaeological heritage is therefore assessed as *LOW*.

Therefore, there are no objections to the authorization of the proposed vineyard development.

9. RECOMMENDATIONS

With regard to the proposed vineyard development on Farm 1726 Renosterkop, Farm 1290 and Farm 1537, the following recommendations are made:

1. No mitigation is required prior to proposed development activities commencing.
2. A buffer of 10m must be set around the grave (Site 891). Alternatively, the grave must be fenced off prior to development activities commencing.
3. Should any unmarked human burials/remains or ostrich eggshell water flask caches be uncovered, or exposed during preparation of the lands for cultivation, these must immediately be reported to the archaeologist (Jonathan Kaplan 082 321 0172), or the South African Heritage Resources Agency (Ms Natasha Higgitt 021 462 4502). Burials, etc. must not be removed or disturbed until inspected by the archaeologist.
4. The above recommendations must be incorporated into the Environmental Management Plan (EMP) for the proposed development.

10. REFERENCES

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