

**ARCHAEOLOGICAL IMPACT ASSESSMENT: PROPOSED
EXPANSION OF BORROW PIT BP R27.8 KM 32.6 RHS 6.2, ON
PORTION 1 OF THE FARM BLOEDZUIGERSFONTEIN NOORD
782 (MERINO), CALVINIA, NORTHERN CAPE PROVINCE**

(In terms of Section 38(8) of the NHRA of 1999)

Prepared for

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EXECUTIVE SUMMARY

ACO Associates were appointed by CCA Environmental (Pty) Ltd to undertake an archaeological impact assessment on behalf of the South African National Roads Agency Limited (SANRAL). They are proposing to expand a borrow pit (BP R27-8 km 32.6 RHS 6.2) which is located approximately 4 km from the intersection of the R27 and the R364, between Nieuwoudtville and Calvinia in the Northern Cape. Expansions are planned to the north, south and west of the existing borrow pit on Portion 1 of the farm Bloedzuigersfontein Noord 782.

This particular borrow pit has been surveyed previously as part of an archaeological assessment for the strengthening of the R27 between Nieuwoudtville and Calvinia (Halkett & Hart 2011). The authors did not identify any archaeological remains. Their report (Halkett & Hart 2011) is lodged on SAHRIS as Case ID 3835.

The site was surveyed by Webley on the 25 August 2014. The proposed expansion of the borrow pit will take place against the side of a hill, facing west towards the R364.

Results

No archaeological remains were identified in the expansion area. The slope of the hill is too steep for pre-colonial settlement and there are no suitable rocks or overhangs for engravings or paintings.

A scatter of about 4 stone tools (including one upper grindstone) was found in some old ploughed lands at the base of the hill and outside the quarry expansion area.

There is a cluster of low hills to the west of the quarry expansion area which was identified as potentially of archaeological interest.

Recommendations

- The stone artefacts are of low significance and outside the quarry expansion area. No mitigation is necessary;
- In the unlikely event that human remains are uncovered during the mining of the hill, then work should stop in that area and SAHRA should be notified;
- If SANRAL intends at some future date to expand the quarry to the cluster of hills to the west, then it is recommended that a further archaeological assessment is undertaken to ensure that there are no archaeological remains.

It is recommended that the expansion of the borrow pit may proceed.

GLOSSARY

Archaeology: Remains resulting from human activity which is in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures.

Early Stone Age: The archaeology of the Stone Age between 300 000 and 1 000 000 years ago.

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

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

Holocene: The most recent geological time period which commenced 10 000 years ago.

Late Stone Age: The archaeology of the last 20 000 years associated with fully modern people.

Middle Stone Age: The archaeology of the Stone Age between 20 000 - 300 000 years ago associated with early modern humans.

National Estate: The collective heritage assets of the Nation.

Palaeontology: Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

Structure (historic): Any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith. Protected structures are those which are over 60 years old.

SAHRA: The compliance authority in the Northern Cape.

Acronyms

DEA	Department of Environmental Affairs
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency

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1. INTRODUCTION

ACO Associates were appointed by CCA Environmental (Pty) Ltd to undertake an Archaeological Impact Assessment for the expansion of a borrow pit located close to the intersection of the R27 and the R364, between Nieuwoudtville and Calvinia in the Northern Cape (Figure 1).

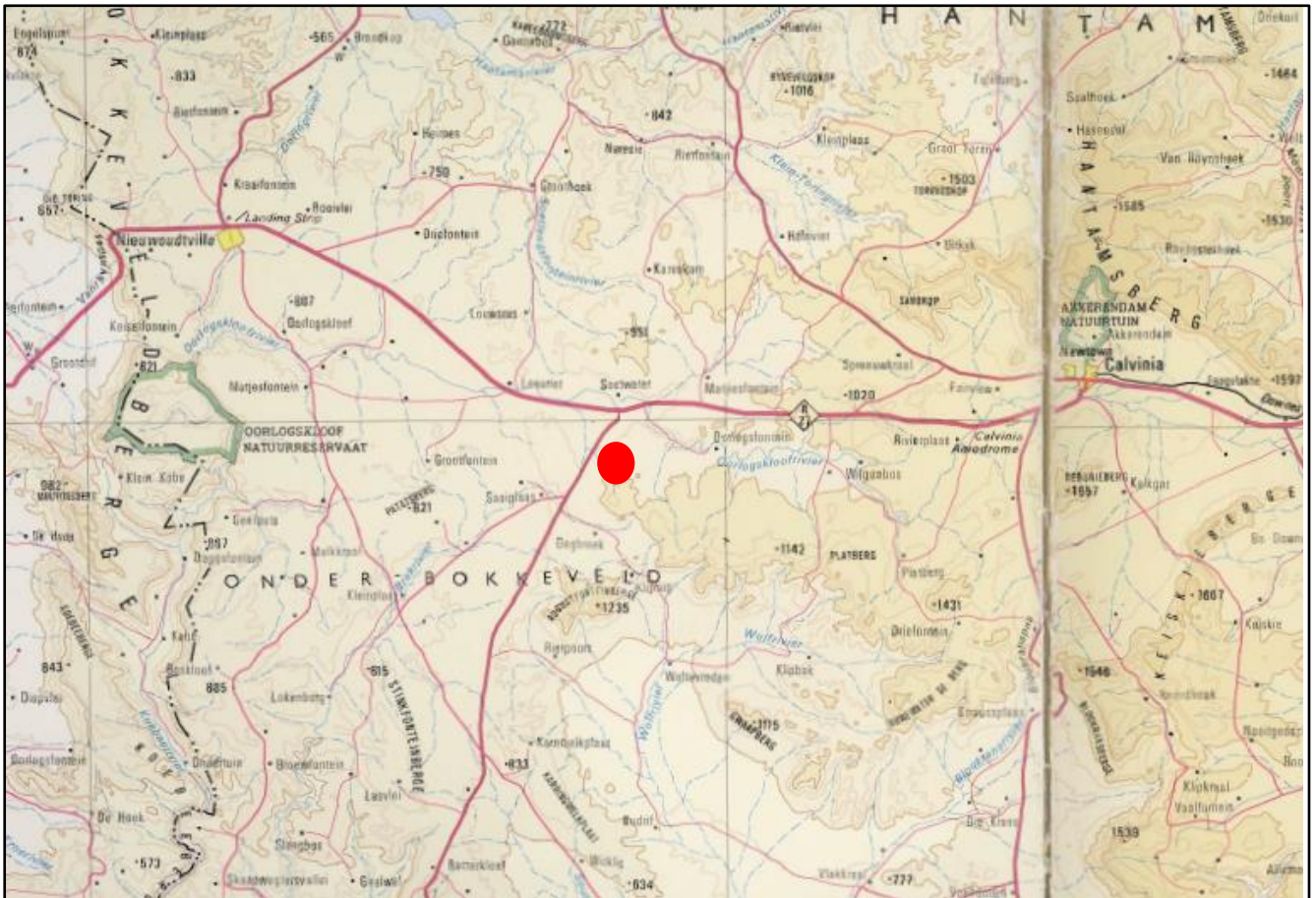


Figure 1: The location of the study area. The proposed extension of the borrow pit will take place on the R364, close to the intersection with the R27 and midway between Calvinia and Nieuwoudtville in the Northern Cape.

2. THE PROPOSAL

The South African National Roads Agency Limited (SANRAL) is proposing expand the extent of Borrow Pit BP R27-8 km 32.6 RHS 6.2. It is located approximately 4 km from the intersection of the R27 and the R364 (Figure 1). The existing borrow pit is fenced from the rest of Portion 1 of the farm Bloedzuigersfontein Noord 782 known as Merino. Expansions are planned to the north, south and west of the existing borrow pit (Figure 2).



Figure 2: The four proposed expansion areas are shown on the map (Map supplied by client).

3. HERITAGE LEGISLATION

The National Heritage Resources Act (NHRA) No. 25 of 1999 protects a variety of heritage resources including palaeontological, prehistoric and historical material (including ruins) more than 100 years old (section 35), human remains older than 60 years and located outside of a formal cemetery administered by a local authority (section 36) and non-ruined structures older than 60 years (section 34). Landscapes with cultural significance are also protected under the definition of the National Estate (section 3 (3.2d)). Section 38 (2a) states that if there is reason to believe that heritage resources will be affected then an impact assessment report must be submitted. This report fulfils that requirement.

In 2011 Halkett & Hart of ACO Associates undertook the specialist archaeological assessment for the proposed strengthening of the R27 between Nieuwoudtville and Calvinia. As part of their survey, they also looked at Borrow Pit R27-8 32.6 RHS 6.2 but did not identify any archaeological remains. Their report (Halkett & Hart 2011) is lodged on SAHRIS as Case Id 3835.

4. METHOD

4.1 Literature Survey

A survey of available literature was carried out to assess the general heritage context of the area. This literature included published material and unpublished commercial reports.

4.2 Field Survey

The polygon of the proposed development was provided to ACO Associates in advance and loaded onto hand held GPS receivers. The site was visited by Dr Lita Webley on the 25 August 2014. The survey tracks are displayed in Figure 3.

A brief background search of other CRM projects in the area was made via the SAHRIS database. A summary is presented in a following section of the report.

4.3 Limitations

There were no limitations to the study.

However, the existing borrow pit is fenced from the rest of the farm with a high fence. There is no access to the new area to the south-west.

5. DESCRIPTION OF AFFECTED ENVIRONMENT

The study area is located off the R27 between Calvinia and Nieuwoudtville in the Northern Cape. The landscape in question forms part of the high Karoo plateaux above the great escarpment. It is characterised by a sparse population, open plains punctuated by hills and mountains. The geology consists of shales and sandstones interrupted by dolerite extrusions and dykes. The main commercial activity is stock farming; however the region experiences a seasonal economic boost with the annual influx of tourists during the spring flower season. Out of season this is an isolated part of country with small permanent populations on sparse farms and in the towns of Calvinia and Nieuwoudtville.

The existing borrow pit is located against the side of a hill.



Plate 1: View of the existing borrow pit from the R363 which connect the R27 with Clanwilliam.



Plate 2: View of the existing mine.



Plate 3: View from the hill looking out over the existing mine area.

5.1 Archaeological Background

The Hantam Mountains to the north of Calvinia has not been subjected to any archaeological research programs or surveys in the past and virtually nothing is known of this area. There are numerous web pages which report on the rock art of the Oorlogskloof Nature Reserve which is located 70 km south-west. Webley & Orton (2012) undertook an assessment for the construction of chalets in the Oorlogskloof Nature Reserve and recorded some rock art as well as graves. A literature search has only produced one published account, namely that of Mr. J Hollman who reported on numerous rock shelters containing rock art in the Koebee River valley, about 40 km south of Oorlogskloof. Mr. D Morris (2007) of the McGregor Museum has undertaken a contract survey for the upgrading of railway infrastructure north of Loeriesfontein and discovered a small shelter with a Middle Stone Age scatter on the Krom River (D. Morris pers comm.). ACO has conducted two small

surveys in the Calvina District but did not identify any significant archaeological material (Webley & Halkett 2009a; 2009b).

During their survey, Halkett & Hart (2011) did not find any archaeological remains at the borrow pit.

5.2 Colonial period history

Calvina was officially named in 1851 and became a municipality in 1904, but the earliest farms were already being allocated to farmers in 1813 (Schoeman 2013). The farm Bloedzuigersfontein North 782 was surveyed by the Government Land Surveyor in August 1916. This portion of the property contains no buildings.

6. FINDINGS

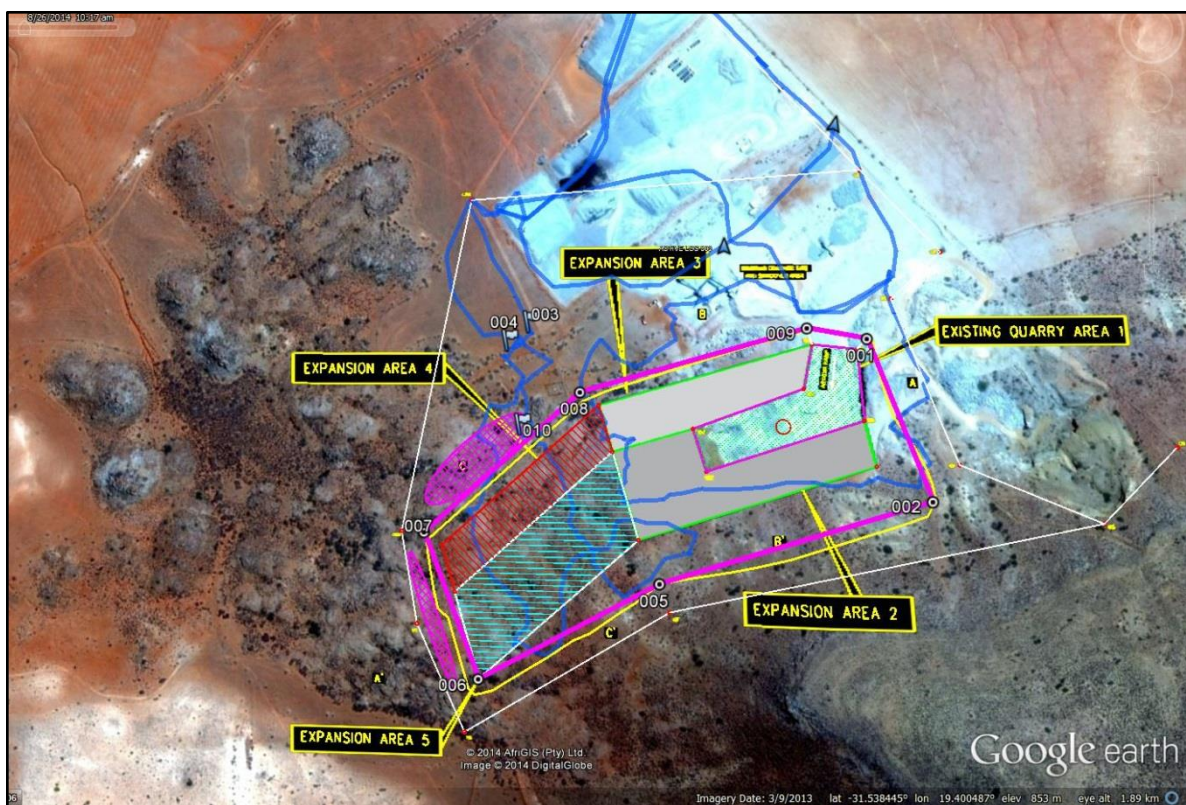


Figure 3: The tracks recorded during the survey are shown as the blue line. The sites (003, 004 and 010) are indicated with the flag icon.

No archaeological remains were identified along the slope of the hill. However, a few stone artefacts were recovered from an old ploughed land at the base of the hill and are designated on Figure 3 as Sites 003, 004 and 010.

Strictly speaking, none of these “sites” comprise more than a single stone artefact.

Site 003 comprised a single Upper Grindstone (Plate 4) while Site 004 comprised a flake and core on quartzite (Plate 5). Site 010 was located closer to the study but consisted of a single silcrete flake.

The artefacts were very sparsely distributed across the old lands at the base of the hill. It is possible that they may have been uncovered by ploughing, or by the shallow ditch which runs at right angles across the property and is probably related to farming activities.

There are however, a number of small hills (Figure 4) in proximity to the proposed quarry area and it is recommended that further field studies be undertaken if the decision is ever taken to extend the quarry in this direction. The hills are presently under no threat from the proposed quarry extension.



Plate 4: An Upper Grindstone made on quartzite; **Plate 5:** A quartzite core.

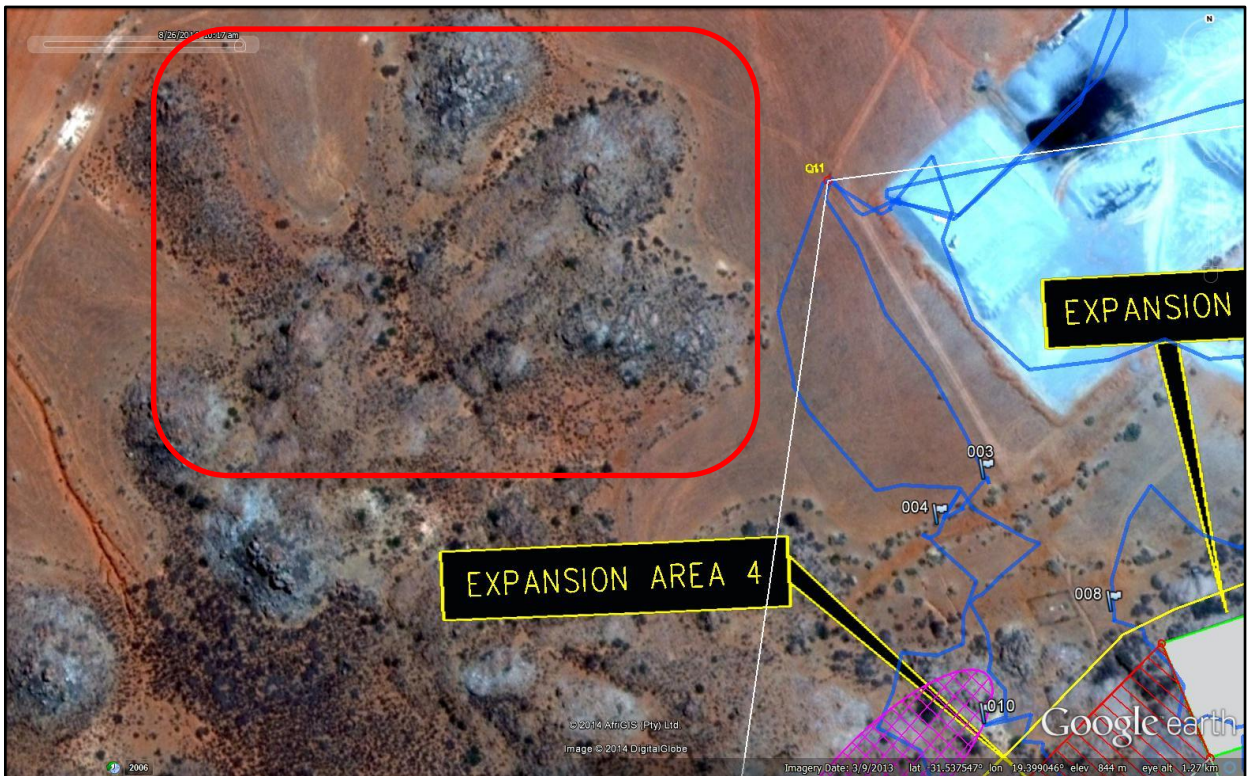


Figure 4: A cluster of low hills lies to the west of the proposed study area and is encircled in red. They are not threatened by the proposed extension of the quarry.

If there are any plans at any time in the future to expand the quarry to the west, to incorporate this cluster of hills, then further field surveys should be undertaken. This is merely a precautionary recommendation to ensure that there are no archaeological sites amongst the hills.

7. ASSESSMENT OF IMPACTS

Archaeological material is highly context sensitive, which means that its disturbance or removal from site of origin destroys its significance. Disturbance or destruction can occur as a result of any activity that involves ground surface disturbance or alterations to the landscape. The impacts that result from

this are generally permanent, but the significance of the impact relates to the rarity or importance of the archaeological material, and the extent to which it will be disturbed. Borrow pits represent a possible source of impact as they involve disturbance of the land surface.

Table 1: Assessment of impacts to pre-colonial archaeology.

CRITERIA	WITHOUT MITIGATION	WITH MITIGATION
Extent	Local	Local
Duration	Indefinite	Indefinite
Intensity	Very low	Very low
Probability	Low	Low
Confidence	High	High
Significance	Low	Low
Cumulative impact	Low	Low
Nature of Cumulative impact	Diffuse scatters of artefacts are to be found throughout the Karoo although good quality archaeological sites are quite rare. Since the material identified is highly diffuse, but common, the cumulative impacts are negligible.	
Degree to which impact can be reversed	Impacts to archaeological material are not reversible, however the material identified in this study is of such low significance, that irreversibility of any impacts is of no consequence.	
Degree to which impact may cause irreplaceable loss of resources	The archaeological material located is typical, and found elsewhere. No irreplaceable loss of resources is expected.	
Degree to which impact can be mitigated	Mitigation is not warranted.	

7.1 Mitigation

No mitigation is required as the archaeological material which has been identified is of very low significance.

8. CONCLUSIONS AND RECOMMENDATIONS

No archaeological remains were identified in the expansion area. The slope of the hill is too steep for pre-colonial settlement and there are no suitable rocks or overhangs for engravings or paintings.

A scatter of about 4 stone tools (including one upper grindstone) was found in some old ploughed lands at the base of the hill and outside the quarry expansion area.

There is a cluster of low hills to the west of the quarry expansion area which was identified as potentially of archaeological interest.

It is recommended that:

- The stone artefacts are of low significance and outside the quarry expansion area. No mitigation is necessary;
- In the unlikely event that human remains are uncovered during the mining of the hill, then work should stop in that area and SAHRA should be notified;
- If SANRAL intends at some future date to expand the quarry to the cluster of hills to the west, then it is recommended that a further archaeological assessment is undertaken to ensure that there are no archaeological remains.

It is recommended that the expansion of the borrow pit may proceed.

9. REFERENCES

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