ARCHAEOLOGICAL IMPACT ASSESSMENT OF THE PROPOSED DEVELOPMENT OF A NEW BORROW PIT AT HELPMEKAAR 147 (PTN. 7) AND THE EXTENSION OF THREE EXISTING BORROW PITS AT MONTAGU FARMS 74, 217 (PTN. 2) & RATELFONTEIN 71, MONTAGU AND LANGEBERG DISTRICTS, WESTERN CAPE

(Assessment conducted under Section 38 (8) of the National Heritage Resources Act as part of a Heritage Impact Assessment)

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EXECUTIVE SUMMARY

Natura Viva cc was appointed by Vidamemoria Heritage Consultants on behalf of Nadeson Consulting Services to undertake an Archaeological Impact Assessment (AIA) for the proposed development of a new borrow pit, MR00294/6.8/L/100(MONT) (Vidamemoria pit no. 96), and the extension of three existing borrow pits, MR00294/13.6/R/10/A/R3 (Vidamemoria pit no. 92), MR00294/29.55/R/50/A/R74 (Vidamemoria pit no. 93), and MR00294/44.75/R/900/A/R52 (Vidamemoria pit no. 100), in the Montagu and Langeberg Districts in the Little Karoo area of the Cape Winelands. Material excavated from the proposed pit and extensions will be used for the re-gravelling of the MR294. The pits will be rehabilitated and re-vegetated once mining activities have ceased. Pit 93 may be retained as a dam.

This study forms part of the Heritage Impact Assessment triggered by the development. The brief for the study was a field visit and short report identifying and assessing archaeological resources and any impact on them, an assessment of significance and recommendations regarding any mitigation required.

Pits 92 and 96 occur in the lower altitude area between Montagu and the Ouberg Pass, approximately 14 to 16 km to the northeast of Montagu. Pits 93 and 100 occur on higher altitude ground beyond the Ouberg Pass, en route to the Anysberg Nature Reserve and the Sanbona Wildlife Reserve.The field assessment was conducted on foot between 18 and 20 August 2012. Archaeological visibility ranged from very good to poor in patches at the different sites.

Pit 92: Occasional stone artefacts and a few dispersed small clusters of several artefacts were observed in a handful of places throughout the affected area. The quartzite artefacts consist of several flakes, possible blade fragments and chunks. There are no clearly diagnostic artefacts but some may date to the MSA. They all occur in areas where there was clear evidence of disturbance by surface run-off.

Pit 93: No archaeological material was observed.

Pit 96: Two quartzite flakes, including a MSA flake blade, and one small LSA quartz scraper were observed in areas affected by surface run-off.

Pit 100: No archaeological material was observed.

The disturbed context of the stone artefacts at the proposed sites for Pits 92 and 96 indicates that the material is in a secondary context and is therefore of low archaeological heritage significance.

No significant impact on such resources is expected if the proposed borrow pit and extension are developed. There will be no impact on archaeological heritage resources at proposed Pits 93 and 100.

No further archaeological studies or mitigation are recommended for any of the pit sites.

If any human remains are found during the development of the proposed pits, work in that area must cease and the South African Heritage Resources Agency (SAHRA) must be notified immediately.

TABLE OF CONTENTS

1. INTRODUCTION

Natura Viva cc was appointed by Vidamemoria Heritage Consultants on behalf of Nadeson Consulting Services to undertake an Archaeological Impact Assessment (AIA) for the proposed development of a new borrow pit, MR00294/6.8/L/100(MONT) (Vidamemoria pit no. 96), and the extension of three existing borrow pits, MR00294/13.6/R/10/A/R3 (Vidamemoria pit no. 92), MR00294/29.55/R/50/A/R74 (Vidamemoria pit no. 93), and MR00294/44.75/R/900/A/R52 (Vidamemoria pit no. 100), in the Montagu and Langeberg Districts, Cape Winelands (Figure 1). Pits 92 and 96 occur in the lower altitude area between Montagu and the Ouberg Pass, whereas Pits 93 and 100 occur on higher altitude ground beyond the Ouberg Pass, closer to the Anysberg Nature Reserve and the Sanbona Wildlife Reserve. Material excavated from the proposed pit and extensions will be used for the re-gravelling of the MR294. No new roads will have to be constructed as access to the quarry sites will be via existing roads and tracks. The pits will be rehabilitated and re-vegetated once mining activities have ceased. Pit 93 may be retained as a dam.

Figure 1: Google earth image showing the location of the proposed borrow pit sites MR00294/13.6/R/10/A/R3 (Pit 92), MR00294/29.55/R/50/A/R74 (Pit 93), MR00294/6.8/L/100(MONT) (Pit 96) and MR00294/44.75/R/900/A/R52 (Pit 100). The Ouberg Pass separates the lower and higher altitude areas to the northeast of Montagu. The Anysberg lies some 20 km to the northeast of Pits 93 and 100. The relevant 1:50 000 topographical maps are 3320CB Allemorgens, 3320CC Montagu and 3320CD Scheepers.

2. LEGAL FRAMEWORK

Section 38 of the National Heritage Resources Act (Act 25 of 1999) is triggered by certain types of development, including changes of character to an area exceeding 5 000m², and makes provision for compulsory Heritage Impact Assessments to assess the potential impacts of such proposed developments on heritage resources. In terms of Section 38(1), a Notification of Intent to Develop (NID) form was submitted to Heritage Western Cape (HWC) by Vidamemoria. Following comment from HWC (case number 111124JL18) an AIA was included amongst the requirements according to Section 38(8) of the Act.

3. TERMS OF REFERENCE

The terms of reference for the AIA stipulated a field visit to locate and map archaeological resources, a short report dealing with the field observations, an assessment regarding the significance of the resources (in the context of other studies in the area) and any impacts on them, as well as recommendations regarding any mitigation required.

4. STUDY APPROACH

4.1 Methods

Fieldwork for the four pits was undertaken by the author between 18 and 20 August 2012. Site plans indicating the affected areas were provided by Nadeson for the Phase 1 survey. Each area was covered on foot and archaeological occurrences and tracks were recorded by a Garmin GPSMAP 62s set on the WGS84 datum (Figures 2, 12 16 & 25). All four sites were extensively photographed.

4.2 Limiting factors

Visibility of archaeological remains on the ground varied at the sites and will be mentioned in each relevant section.

5. DESCRIPTION OF AFFECTED ENVIRONMENT AND SITES

5.1 Archaeological background:

Archaeological impact studies in the general Montagu area provide a context for the proposed Pit 92 development and the extension of Pit 96, located in the area between Montagu and the Ouberg Pass. For example, relatively large numbers of Middle Stone Age (MSA) and Later Stone Age (LSA) artefacts, as well as smaller numbers of Early Stone Age (ESA) stone tools, have been observed along the R62 between Montagu and Barrydale (Kaplan 2005). Although most of these artefacts were located in highly disturbed and modified contexts, one large scatter on the farm Derde Heuvel 210 seemed to consist of tools belonging to a single archaeological occurrence and was assigned medium to high significance (Kaplan 2005). A subsequent study at the Derde Heuvel site was in fact done by Orton (2009). Grey quartzite flakes, blades, chunks and cores, probably MSA in character, were distributed throughout the ferruginous gravel of the study area which

extended over an area of more than 1 km. All the artefacts were in a secondary context as a result of natural erosion and weathering of the geological strata. The principal site in the Montagu region where stone artefacts have been recorded in a stratified context is the well-known Montagu Cave, located in the Langeberg south-west of Montagu. Excavations by Keller revealed a long sequence covering the ESA, MSA and LSA (Keller 1970, 1973). The cave also contains some rock art.

Relevant background for the proposed extensions of Pits 93 and 100 which lie in the higher altitude area to the northeast of the Ouberg Pass is the scoping study of the heritage of the Sanbona Wildlife Reserve, situated between Montagu and Barrydale (Halkett 2002). Pit 100 is in fact situated on the western margin of Sanbona. Some preliminary observations were made by Halkett (2002) about the range, density and distribution of heritage sites ranging from ESA, MSA, LSA, San rock painting sites, a possible Khoekhoen herder site to colonial period buildings and ruins. ESA and MSA open sites appear to occur throughout the reserve. LSA sites were less common and were largely confined to the foothills and kloofs of the Warmwaterberg. Several small rock shelters containing archaeological deposits and a number of rock painting sites with human, animal (e.g. eland, hartebeest), finger dots and possible therianthrope figures were recorded. A large quantity of broken potsherds and ostrich eggshell beads were noted at the possible Khoekhoen herder site. The colonial period on Sanbona is evident in the form of ruins and farmsteads, some being the remains of sun-dried mud brick and stone structures probably dating to the time of the pioneer trekboers of the later part of the 18th century.

Rock paintings have also been recorded at the Anysberg Nature Reserve (Rust 2000).

5.2 Borrow pit MR00294/13.6/R/10/A/R3 (Vidamemoria pit no. 92)

Approximate area: 300m x 56m
Location: S 33° 45′ 06.89″ E 20° 15′ 21.65″
Farm name and number: Potion 2 of Montagu Farm No. 217

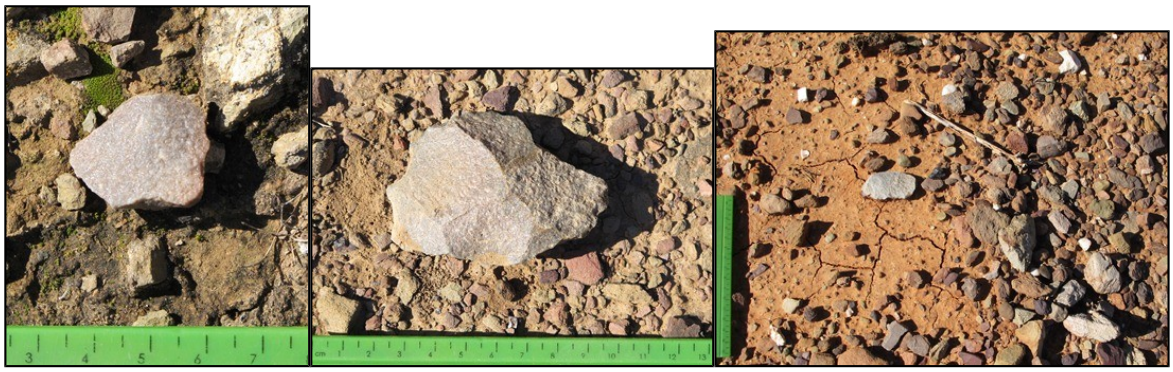
Environment: The affected area lies in the lower altitude terrain between Montagu and the Ouberg Pass. The existing shallow borrow pit and proposed extension are bounded to the north by the MR294 and a fence. A small stream to the south and west, and a farm track to the east provide an indication of the other boundaries (Figure 2). The terrain slopes gently towards the stream. The extraction of material will start at the existing face and then move back in a westerly and easterly direction. Gravelly silty sand and sandy silt are underlain by highly cleaved mudrocks and impure sandstones of the Bokkeveld Group (J. Almond, pers. comm.). Some portions of the study area contain more gravel and isolated blocks of sandstone. The existing pit is surrounded by uncultivated land with grass, euphorbias, ‘vygies’ and shrubs such as *Pentzia incana*., *Salsola* sp. and *Lycium* sp. Vegetation to the east of the pit is generally dense, particularly after the good rains (Figures 5 & 6), so the visibility of archaeological material on the ground was poor in places, especially where grass and small *Oxalis* plants covered the soil. The vegetation was more scattered in the western half of the polygon (Figures 3, 4 & 7) and archaeological visibility was thus good. The site will be rehabilitated and re-vegetated after mining activities.

Figure 2: Pit 92 - Google earth image showing the proposed extension of the existing borrow pit 92 (near the centre of the polygon) and the tracks of the field survey. A new gate has been erected where the small arrow is and a 'new' track leads from this gate to the track on the right on the Google image. Please note that the straight blue lines do not indicate survey tracks. The relevant 1:50 000 topographical map is 3320CD Scheepers.

Figures 3 and 4: Pit 92 - view from the western part of the affected area towards the east with the existing pit in the centre of the photo; View of the existing pit towards the west. The photo was taken from the new gate.

Figures 5 and 6: Pit 92 - view towards the east of the more densely vegetated eastern half; view towards the northwest of the south-eastern portion of the affected area. The 'new' track is visible on the left.

Figures 7 and 8: Pit 92 - view towards the west of the north-western corner of the polygon; a selection of quartzite artefacts. The scale is in cm.



Figures 9, 10 and 11: Pit 92 - quartzite artefacts – small flake; chunk; flake in an area showing surface run-off. The scale is in cm.

Results of the survey: The survey of the proposed extension was undertaken on 19 August 2012. Occasional stone artefacts and a few dispersed small clusters of several artefacts were observed in a handful of places throughout the affected area. The artefacts, all manufactured from quartzite, consist of several flakes, possible blade fragments and chunks (Figures 8, 9, 10 & 11). There are no clearly diagnostic artefacts but some may date to the MSA. There was clear evidence of disturbance by surface run-off (e.g. Figure 11). The archaeological material is thus in a disturbed, secondary context and is considered to be of low archaeological heritage significance.

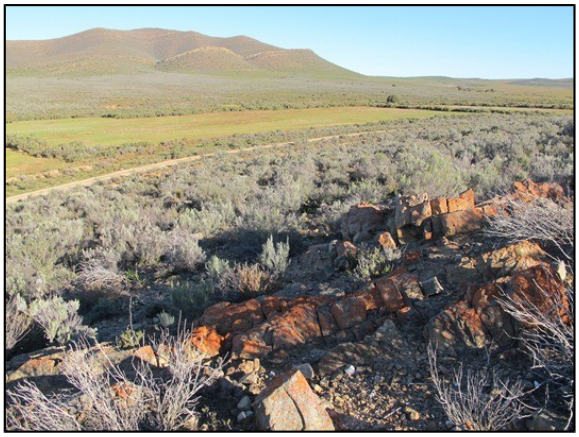
5.3 Borrow pit MR00294/29.55/R/50/A/R74 (Vidamemoria pit no. 93)

Approximate area: 148m x 150m
Location: S 33° 39' 15.54" E 20° 17' 27.32"
Farm name and number: Montagu Farm No. 74 (Papekuils Fontein)

Environment: The existing borrow pit, used as a dam, is located at the foot of the northwest-facing slope of a low hill (koppie) situated in private land along the MR294 on the higher altitude ground to the north of the Ouberg Pass. The proposed development of the pit will extend from the dam into the hill in a south-westerly direction (Figure 12). The extension is bordered by a faint footpath to the northwest and a track to the southeast. Down-wasted surface gravels of sandstone with quartz fragments overlie weathered mudrock of the Klipbokkop Formation of the Upper Bokkeveld Group (J. Almond, pers. comm.). The southern and south-eastern slopes and the top of the hill are rockier and more rugged than the northern slope (Figures 13 & 15). Sparse grass, scattered bushes and shrubs (e.g. *Elytropappus* sp., *Pentzia incana*, *Galenia africana)* and 'doringvygies' occur. *Elytropappus* sp. is especially dense on the rockier southwest-facing slope. Archaeological visibility was generally good as there were gaps between the bushes. The site will either be re-vegetated or retained as an earth dam for agricultural purposes.

Figure 12: Google earth image showing the proposed extension of the existing borrow pit 93 and the tracks of the field survey. The affected area is located on a small hill. Please note that the straight blue lines do not indicate survey tracks. The relevant 1:50 000 topographical map is 3320CB Allemorgens.

Figure 13: Pit 93 - view towards the northeast showing the existing pit (dam). The photo was taken from the top of the hill. The gravels with larger sandstone blocks are evident in the foreground.



Figures 14 and 15: Pit 93 - view towards the southwest from the western side of the existing pit; view down onto the southeast-facing slope of the affected area from the top of the hill.

Results of the survey: No archaeological remains were observed during the survey on 18 August 2012. The site is not in the immediate vicinity of any rocky areas where rock paintings might be found.

5.4 Borrow pit MR00294/6.8/L/100(MONT) (Vidamemoria pit no. 96)

Approximate area: 110m x 80m (approximately 8 800m²)
Location: S 33° 46' 45.9" E 20° 12' 10.3"
Farm name and number: Portion 7 of Farm Helpmekaar No. 147

Environment: This proposal concerns the development of a new borrow pit in the area between Montagu and the Ouberg Pass. It is proposed that material be obtained from a small hill (koppie) in uncultivated land adjacent to the MR 294. The affected area is bounded by a fence to the south and a small stream bed to the east (Figures 16, 17, 18 & 22). A lower-lying area occurs in the western half of the polygon (Figures 18, 19 & 21) with the actual koppie situated in the eastern half (Figures 18 & 20). The proposed extraction of material will start just beyond the fence and move back in a northerly direction. Ferruginised surface gravels overlie cleaved bedrock comprising siltstones and impure sandstones of the Klipbokkop Formation of the Bokkeveld Group (J. Almond, pers. comm). Besides the sandstone gravel, natural chunks of quartzite occur amongst the surface gravels. There are signs of disturbance from animal burrowing and run-off over the entire site. The visibility of archaeological material on the ground was poor in the more densely vegetated areas – the eastward-facing slopes of the hill (Figures 17 & 22) and the northern part of the polygon (Figure 21) – where shrubs such as *Lycium* sp. and *Salsola* sp., *Oxalis* herbs and moss grow. Archaeological visibility was good in the south-western part of the affected area, the southern slopes and the top of the koppie where more widely spaced bushes such as *Eriocephalus* sp., *Elytropappus* sp. and *Pteronia* sp., as well as 'vygies' and *Tylecodon* spp. occur (Figures 18 & 19). The site will be rehabilitated and re-vegetated after mining has ceased.

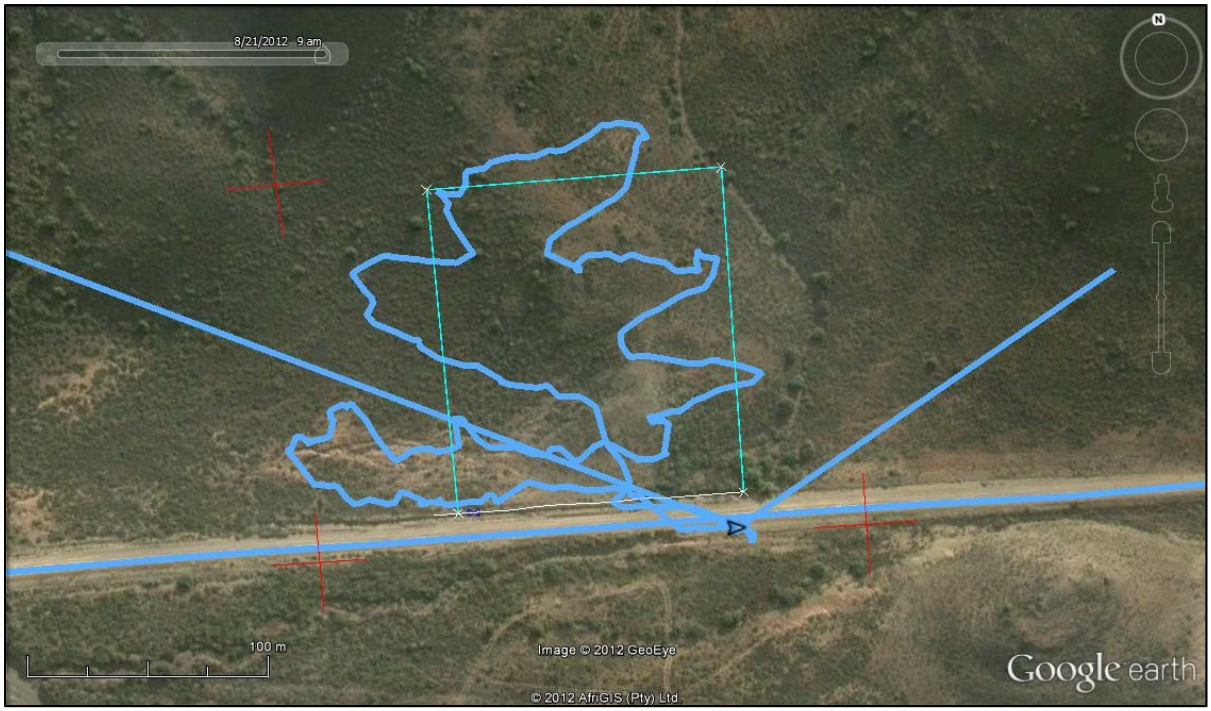
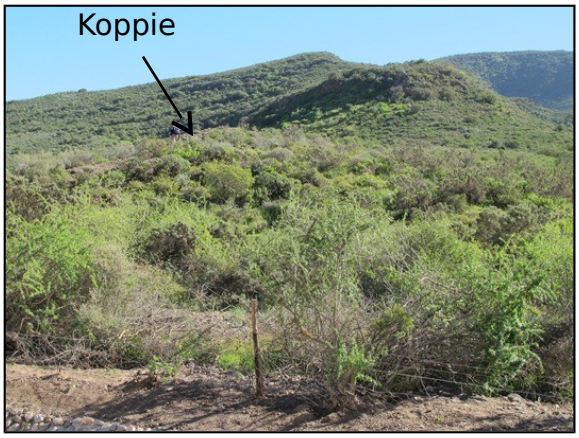
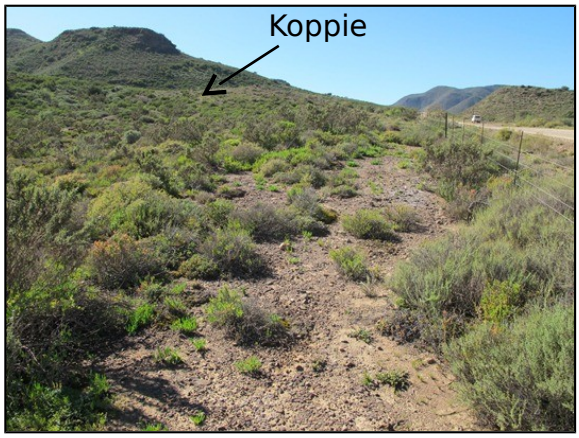


Figure 16: Google earth image showing the proposed borrow pit 96 and tracks of the field survey. Please note that the straight blue lines do not indicate survey tracks and that the vegetation on the ground is denser than it appears in this image. The relevant 1:50 000 topographical map is 3320CC Montagu.





Figures 17 and 18: Pit 96 - view from the road towards the northwest of the low koppie with the more densely vegetated southeast-facing slope close to the fence and the small stream; view towards the east of the southern part of the affected area along the fence.

Figures 19 and 20: Pit 96 - view towards the northeast of the koppie with the lower-lying western portion in the foreground; view towards the south taken from the northern part of the affected area.

Figures 21 and 22: Pit 96 - view from the top of the hill towards the west, showing the brown area which is badly affected by sheet wash; view towards the north of the eastward-facing slope down to the stream bed.

Results of the survey: The survey was undertaken on 19 August 2012 and three stone artefacts were observed. Two quartzite flakes (Figure 23) found in close proximity to each other on the north-east facing slope and one small scraper made of milky quartz with impurities (Figure 24) found in the south-western area affected by gully erosion and sheet wash. One of the flakes is clearly a MSA blade and the scraper belongs to the LSA. The fact that the artefacts were found in disturbed, secondary contexts suggests that they are of low archaeological significance.

Figures 23 and 24: Pit 96 - quartzite MSA blade and flake of indeterminate age; quartz LSA scraper.

5.4 Borrow pit MR00294/44.75/R/900/A/R52 (Vidamemoria pit no. 100)

Approximate area: 135m x 100m (approximately 13 500m²)
Location: S 33° 40' 16.02" E 20° 26' 56.5"
Farm name and number: Ratelfontein No. 71

Environment: The proposed extension to an existing borrow pit lies on private land, at the western margin of the Sanbona Wildlife Reserve, on the higher altitude ground to the north of the Ouberg Pass. The Anysberg Nature Reserve lies approximately 18 km to the northeast and Montagu lies some 30 km to the southwest of the pit. The existing pit lies at the north-eastern foot of a small hill (koppie)(Figures 25, 26 & 29). Extraction of material would start at the existing face and move back in a south-westerly direction into the koppie. Most of the affected area concerns the slopes round the hill but a flatter-lying portion of ground occurs in the northern half of the polygon (Figures 25, 27 & 28). The boundaries of the polygon are not clear on the ground but lie away from the track on the northeast and a small stream bed on the west (Figures 25 & 27). The sandy stream bed contains occasional flat slabs of mudrocks rather than quartzite cobbles which would be a good source of raw material for stone artefacts. Brown silty sandy gravel derived from mudrocks of the Waboomberg or Klipbokkop Formations of the Bokkeveld Group is overlain by a layer of colluvial soil (J. Almond, pers. comm.). The area below the southern and south-eastern slopes is rockier. Scattered larger shrubs such as *Euclea undulata* and *Rhus* sp. occur on the hill-slopes which are generally devoid of vegetation except for some succulents (Figure 26). Low Asteraceae bushes, e.g. *Pentzia incana* and *Eriocephalus* sp. are found on the flatter-lying areas below the hill. The visibility of archaeological material on the ground was very good. The site will be rehabilitated and re-vegetated after mining has ceased.

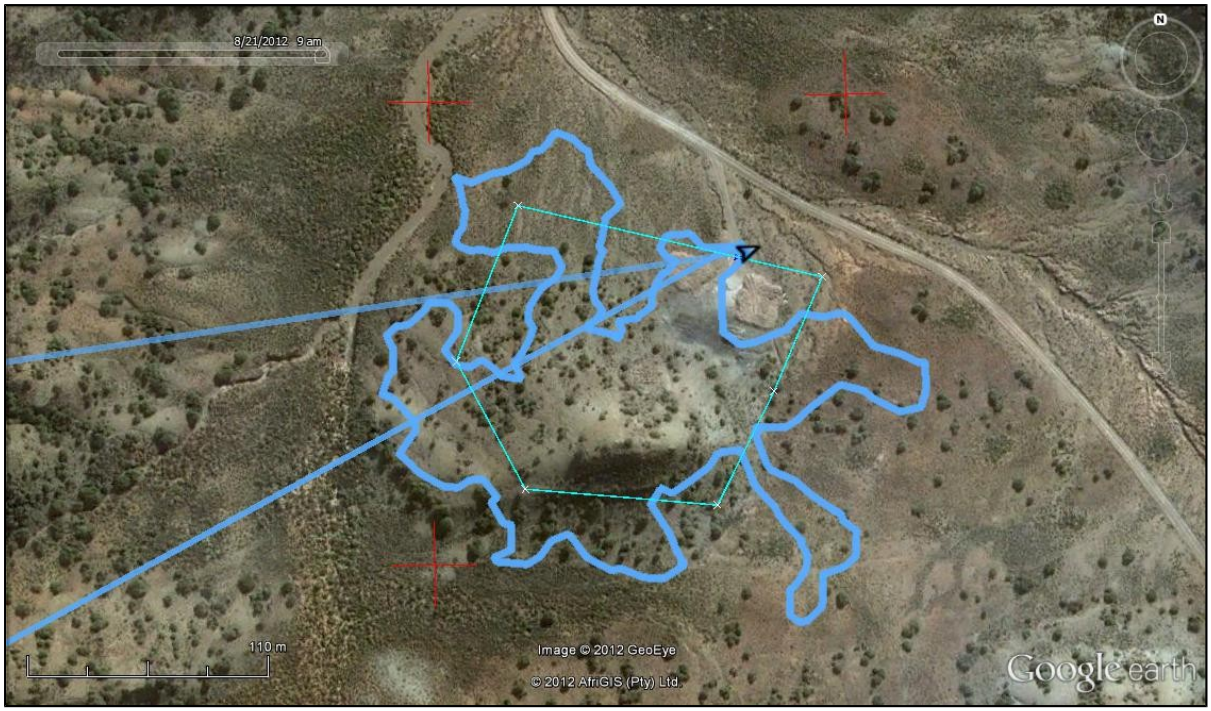


Figure 25: Google earth image showing the proposed extension of the existing borrow pit 100 and the tracks of the field survey around the koppie. Please note that the straight blue lines do not indicate survey tracks. The relevant 1:50 000 topographical map is 3320CB Allemorgens.

Figures 26 and 27: Pit 100 - view towards the southwest of the existing borrow pit at the foot of the koppie; view towards the north showing the slope and lower ground of the affected area, as well as the stream bed on the left and the main track on the right.

Figures 28 and 29: Pit 100 - view across the lower part of the affected area towards the southwest; view towards the northeast over the eastern part of the affected area. The Anysberg is visible on the horizon.

Results of the survey: The lower slopes and flatter-lying areas at the foot of the koppie were surveyed. It was not deemed necessary to cover the steep upper slopes. No archaeological remains were observed. No rocky areas where shelters with archaeological deposits or paintings may be found occur in the immediate vicinity of the proposed extension.

6. SIGNIFICANCE AND RECOMMENDATIONS

No archaeological material was observed at Pit 93 and Pit 100 so there will be no impact on archaeological heritage resources at these sites.

The disturbed context and mixing of the stone artefacts at the proposed sites for Pits 92 and 96 indicates that the material is in a secondary context and is therefore of low archaeological heritage significance. No significant impact on such resources is expected if the proposed extensions are developed.

No further archaeological studies or mitigation are recommended for any of the pit sites.

If any human remains are found during the development of the proposed pits, work in that area must cease and the South African Heritage Resources Agency (SAHRA) must be notified immediately.

7. REFERENCES

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8. ACKNOWLEDGEMENTS

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