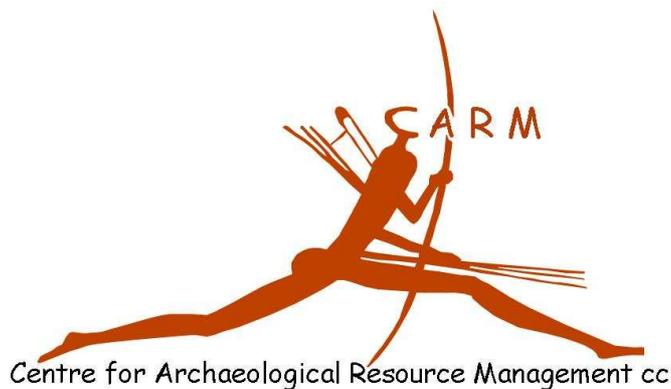


Archaeological Impact Assessment

**Portion 2 of the Farm Malgaskraal 142 Rem, District of George,
Western Cape Province: Application for Mining Right – Extension of
Witfontein Quarry**

prepared for
Site Plan Consulting and Lafarge SA (Pty) Ltd

by
Peter Nilssen



C A R M
PO Box 176
Great Brak River
6525

Company No. CK 2006\133900\23
VAT No. 4240230989

17 April 2007

Executive Summary

An Archaeological Impact Assessment was conducted on portion 2 of the farm Malgaskraal 142 on 13 April 2007. The study area - comprised mostly of a felled pine plantation – was accessed on foot from the existing Witfontein Quarry immediately south. Dense vegetation makes portions of the property difficult to access and archaeological visibility is generally low. Nevertheless, sufficient extents of exposed surfaces, erosion gullies, rock shelters/overhangs and profiles were inspected for an archaeological impact assessment.

Not a single archaeological trace was identified. Exposed profiles show a variable thickness of topsoil overlying Table Mountain Sandstone that is mostly close to the surface. The lack of sediments that may contain archaeological materials suggests that the study area is unlikely to contain significant archaeological materials. Topsoil and sediments – potentially including archaeological materials - overlying Table Mountain Sandstone are disturbed by former activities associated with pine plantations as well as earlier mining activities along the western portion of the property.

Mining activities will cut through topsoil and into Table Mountain Sandstone in order to extract quartzitic sandstone. If archaeological materials occur in the topsoil, then mining activities will negatively and permanently impact those materials. The absence of archaeological traces in the studied area, however, indicates that the property is not archaeologically sensitive and is unlikely to contain significant archaeological resources.

In the unlikely event that archaeological materials are exposed during mining operations, this must be reported to Heritage Western Cape and dealt with in accordance with the National Heritage Resources Act (No. 25 of 1999) and at the expense of the developer(s) and/or property owner(s).

Table of Contents

<u>Content</u>	<u>Page</u>
Executive Summary	2
1. Introduction	4
1.1. Background	4
1.2. Purpose of the Study	4
1.3. Study Area	4
1.4. Approach to the Study	5
2. Results	5
3. Sources of Risk, Impact Identification and Assessment	6
4. Required Mitigation Measures.....	6
Figures and Plates	7

1. Introduction

1.1 Background

Due to the proposed extension of the Witfontein Quarry to include Portion 2 of the Farm Malgaskraal 142 Rem, George District, Western Cape Province (Figures 1 & 2 and Plates 1 & 2), Mr. Stephen van der Westhuizen of Site Plan Consulting - on behalf of Lafarge SA (Pty) Ltd - appointed CARM to conduct an Archaeological Impact Assessment (AIA).

- The proposal and application for mining rights is to extend the existing Witfontein Quarry to the north for the purpose of mining quartzitic sandstone from the lower Table Mountain Sandstone group.
- To this end, vegetation clearing, earthmoving, blasting and large scale excavations will be undertaken.
- The mine layout plan is shown in Figure 2.

1.2. Purpose and Scope of the Study

Objectives of the Archaeological Impact Assessment are:

- To assess the study area for traces of archaeological materials;
- To identify options for archaeological mitigation in order to minimize potential negative impacts; and
- To make recommendations for archaeological mitigation.

Terms of Reference:

- a) Locate boundaries of the study area.
- b) Conduct a foot survey of the study area to identify archaeological resources.
- c) Assess the impact of the proposed mine extension on archaeological materials.
- d) Recommend mitigation measures where necessary.
- e) Prepare and submit a report to Mr. Stephen van der Westhuizen of Site Plan Consulting that meets standards required by Heritage Western Cape in terms of the National Heritage Resources Act, No. 25 of 1999.

1.3 Study Area

The property for the proposed extension of the existing Witfontein Quarry is situated immediately north of the latter, some 2 km north west of George, Western Cape Province, on Portion 2 of the Farm Malgaskraal 142 Rem (Figures 1 & 2 and Plates 1 & 2). The study area was approached by vehicle via the N9 and Montagu Pass gravel road - the old road between George and Oudtshoorn (Plate 1). After meeting at the Witfontein Quarry, Mr. Andrew Schmidt of Lafarge SA (Pty) Ltd directed me to the study area, which was accessed on foot along its southern boundary by crossing the Malgas River (see walk tracks in Figure 3 and Plate 2; also see Plate 3). The study area is approximately 6 hectares in extent and the middle of the Malgas River – between points A and E – comprises its western, southern and south eastern boundaries (Figure 2 and Plate 2). The remaining property boundary points - rounded to the nearest meter - are as follows (map datum WGS 84; see Figure 2 and Plate 2):

- A, S33.92727 E22.41961 (decimal degrees); 23 Y0053666 X3755746 (SA Grid)
- B, S33.92809 E22.42187 (decimal degrees); 23 Y0053455 X3755836 (SA Grid)
- C, S33.92863 E22.42100 (decimal degrees); 23 Y0053536 X3755896 (SA Grid)
- D, S33.92912 E22.42080 (decimal degrees); 23 Y0053554 X3755950 (SA Grid)
- E, S33.92950 E22.42083 (decimal degrees); 23 Y0053551 X3755992 (SA Grid)

The bulk of the property comprises gentle slopes (Figure 1 – see contour lines outside oval - and Plates 3 & 4[022 & 023]), but the western slope of the Malgas ravine is steep (Figure 1 – see contour lines within oval – and Plates 3 & 4[012, 016 & 021]).

Vegetation varies notably in the study area and was likely affected when the property was used for pine plantations (Plate 4). In areas vegetation is too dense for foot survey (see Plates 2 & 4). Sufficient areas of exposed ground surfaces such as pedestrian and vehicle tracks, eroded areas and accompanying profiles, formerly mined areas with associated profiles as well as areas with patchy vegetation were present in the study area for a meaningful archaeological impact assessment. Examples of areas with good archaeological visibility are shown in Plate 5.

The steep sloped area at the western extent of the study area included several rock shelters and overhangs that were examined for archaeological materials and rock art such as paintings and engravings (Plate 6).

1.4 Approach to the Study

Archaeological impact assessments in the broader area of George and the foothills of the Outeniqua Mountains revealed that generally, archaeological traces – other than those of the historic period – of Stone Age origin occur in low densities often referred to as “background noise”. No archaeological work was conducted in the immediate vicinity of the study area.

Mr. Stephen van der Westhuizen of Site Plan Consulting provided a map, a layout plan as well as surveyor’s coordinate data concerning the location and extent of the study area. Mr. Andrew Schmidt of Lafarge SA (Pty) Ltd accompanied me to the point of access to the study area from where boundary points A through E were located by navigating with a hand held GPS unit. The walk tracks - as fixed by hand held GPS - show that a substantial area of the property was covered during the foot survey (Figure 3 and Plate 2). The bulk of the survey was conducted in transects crossing a large portion of the study area. Certain areas are too densely vegetated to walk through and/or archaeological visibility is very poor (see Plate 2).

In addition to generating a record of walk tracks, GPS fixes were taken to record localities of interest and the positions where photographs were taken so that the latter could be contextualized as done in Plates 4 through 6 with reference to Plate 2. Notes and a high quality, comprehensive digital photographic record were also made (full data set available from author).

2. Results

Figure 3 and Plate 2 show walk tracks - black dash-dot line in centre of yellow line - as fixed with a hand held GPS during the foot survey (complete record of GPS data is available from author). In 5 hours of survey a distance of 3.9 km was walked covering an area of around 2.4 hectares. Due to impenetrable vegetation and areas of poor archaeological visibility, the inspected area is smaller than 2.4 hectares.

Other than former pine plantations, vehicle tracks, pedestrian tracks and mining, no archaeological materials were identified (Plates 2 & 5; see former mining Plate 4[034] and Plate 5[034/035]). Vegetation cover at rock shelters and overhangs prevents inspection of the ground (Plate 6). No rock art was observed on the surfaces of shelters and overhangs. Evidence for other heritage-related concerns is lacking.

3. Sources of Risk, Impact Identification and Assessment

- The proposed extension of the Witfontein Quarry as outlined in 1.1 will involve vegetation clearing, earthmoving and large scale mining of quartzitic sandstone from the lower Table Mountain Sandstone group.
- Mining activities could have a permanent negative impact on archaeological resources.
- Archaeological traces cannot occur in the Table Mountain Sandstone since the latter is too old.
- While theoretically possible for archaeological materials to occur in the topsoil layer, their total absence in the studied area strongly suggests that significant archaeological resources are unlikely to occur in the study area.
- If present in the past, activities associated with pine plantations and previous mining probably disturbed archaeological remains on or near the surface.
- Given their total absence from the studied area, the scarcity of deposit that could contain them and the disturbance of topsoil, archaeological remains are unlikely to occur in the study area and thus the property is not archaeologically sensitive.

Table 1 summarizes the potential impact of the proposed mining operations on archaeological heritage resources.

Table 1. Potential Impact on and Loss of Archaeological Heritage Resources

Extent	Local
Duration	Permanent
Intensity	Low to None
Probability	Low to None
Significance	Low to None
Status	Low to None
Confidence	High

4. Required Mitigation Measures

The following is required:

- In the event that vegetation clearing and earthmoving activities expose archaeological materials, such activities must be halted and Heritage Western Cape must be notified immediately. Archaeological materials must be dealt with in accordance with the National Heritage Resources Act (No. 25 of 1999) and at the expense of the developer(s) and/or property owner(s).

Figures and Plates (on following pages)

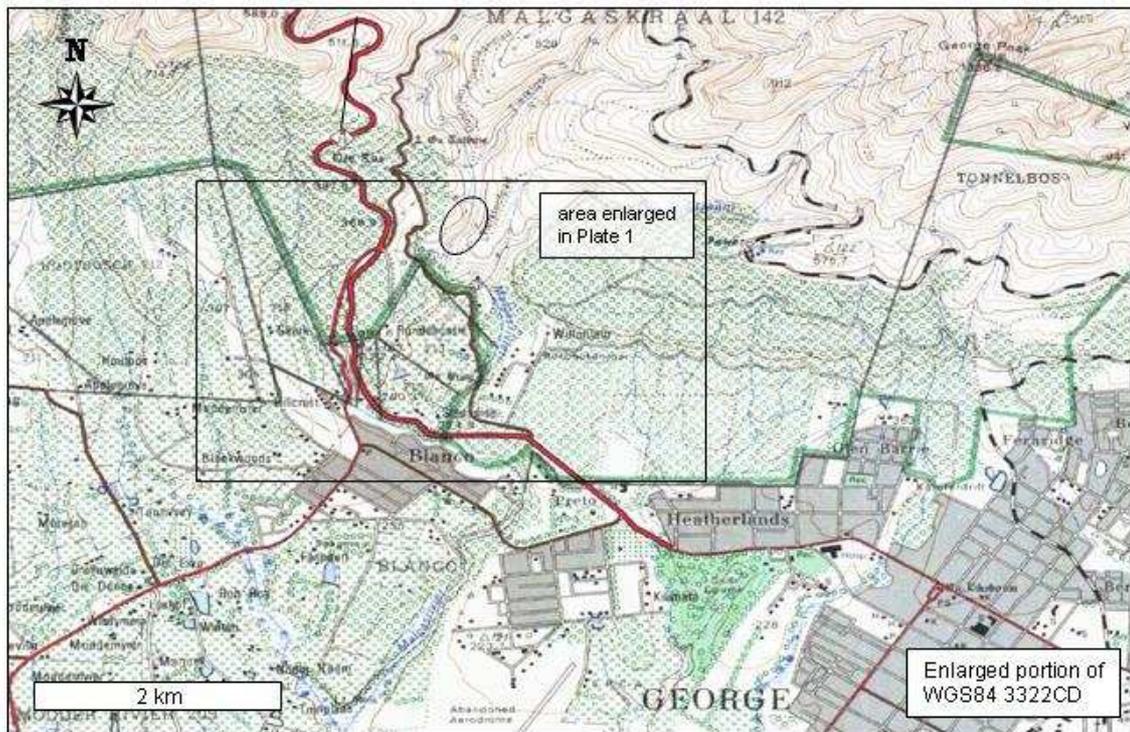


Figure 1. General location of the study area is shown relative to George and Blanco, Western Cape Province. Oval encloses steep slope.

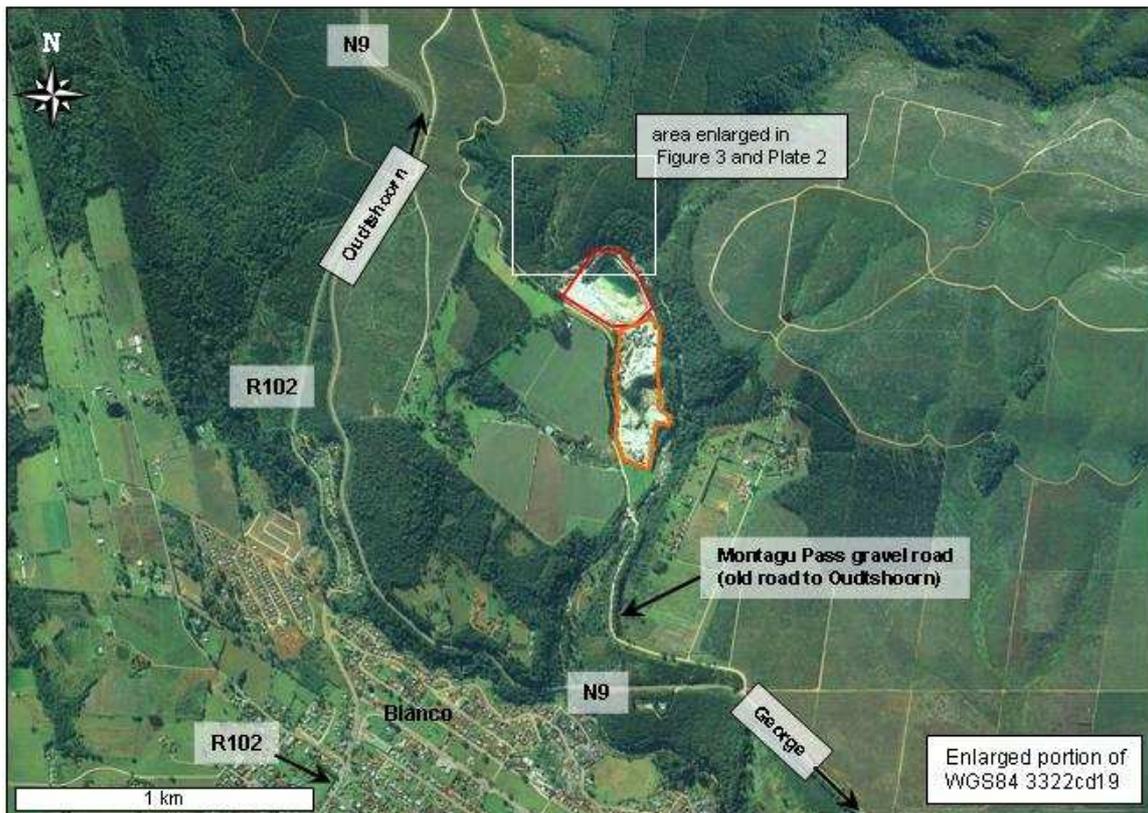


Plate 1. Enlarged area as indicated in Figure 1. The location of the study area is framed in white and the existing mine is outlined in red. Lafarge crushing and processing site is outlined in orange.

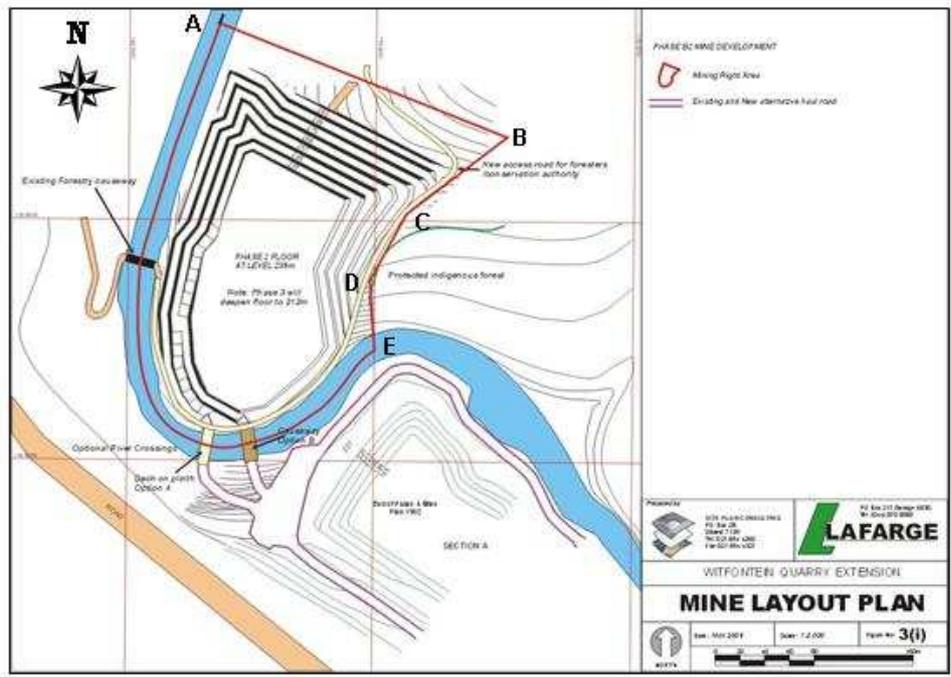


Figure 2. Proposed mine layout plan relative to the existing Witfontein Quarry (courtesy Lafarge SA (Pty) Ltd and Site Plan Consulting). The study area is outlined in red.

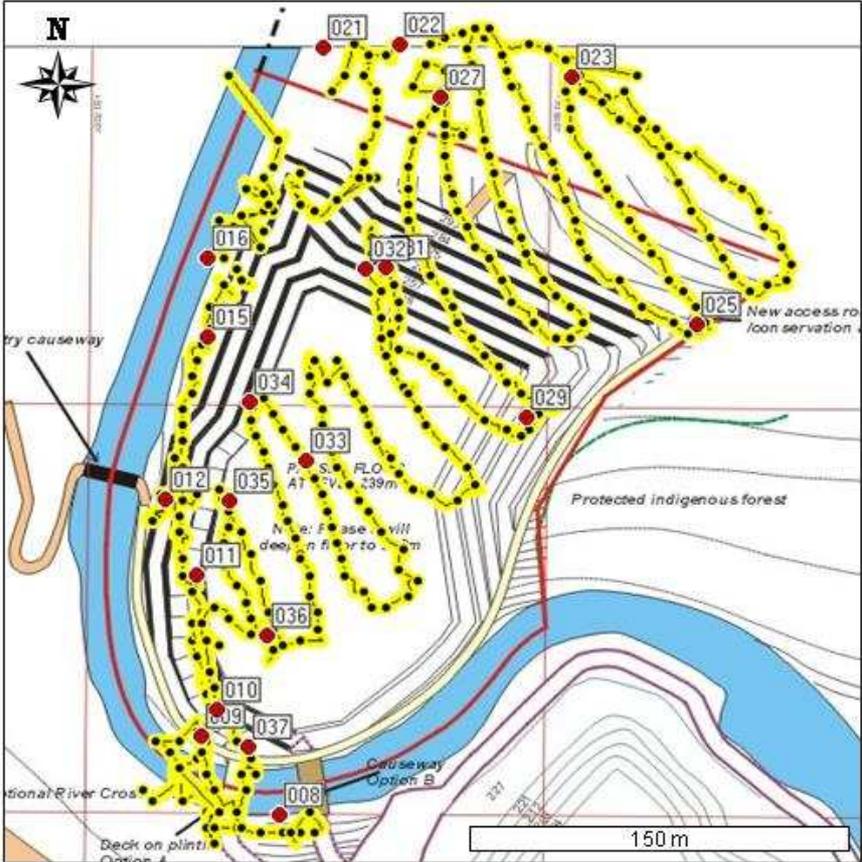


Figure 3. Enlarged area as indicated in Plate 1 with study area outlined in red, AIA walk tracks in yellow and numbered red dots represent selected localities discussed in text. Note that overlays – property boundary, walk tracks and numbered points - are not precise (see text).

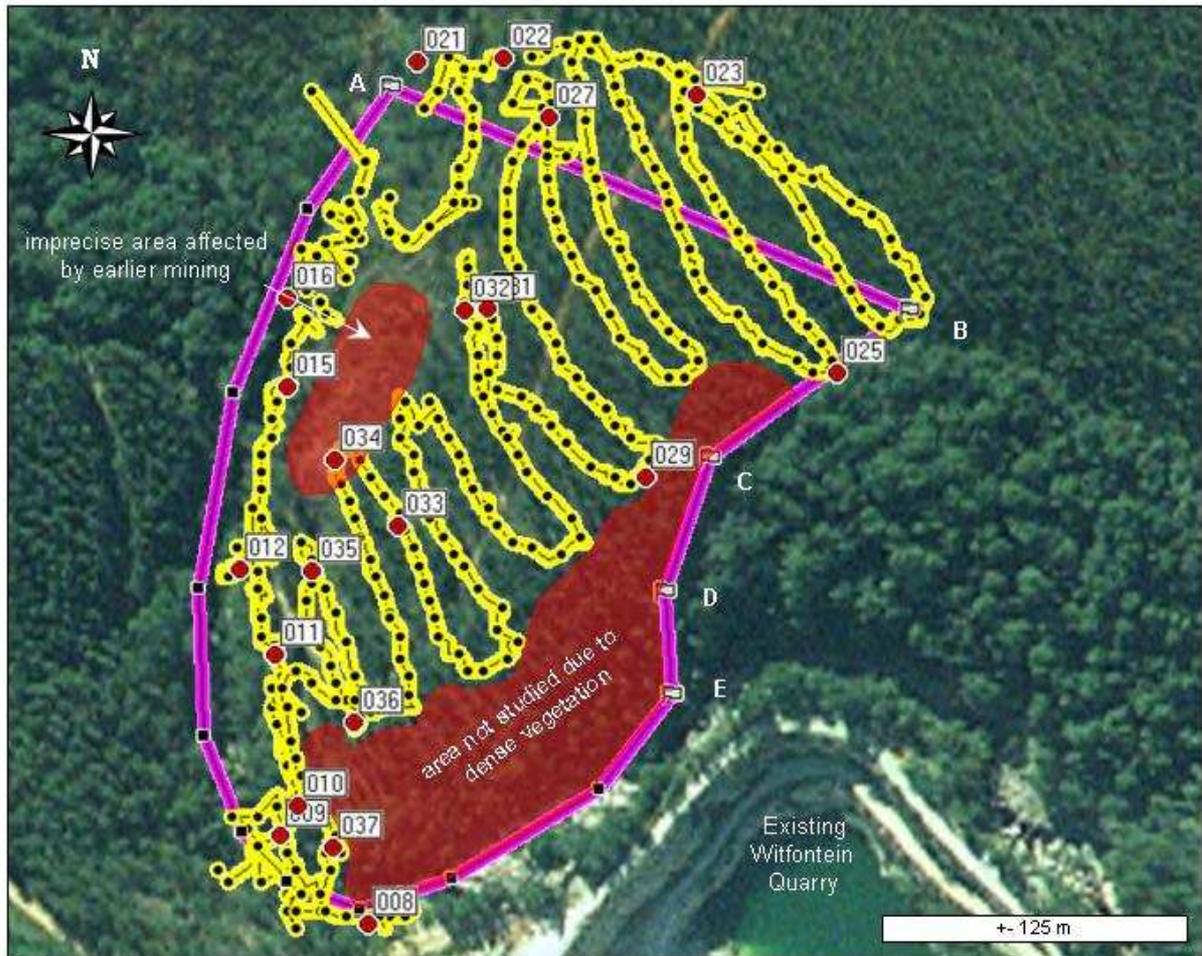


Plate 2. Enlarged area as indicated in Plate 1. The extent of the study area is shown in purple, AIA walk tracks in yellow and numbered red dots represent selected localities discussed in text. Note that overlays – property boundary, walk tracks and numbered points - are not precise (see text).



Plate 3. North facing panoramic view of the study area taken from point 008 at the southern boundary (see Plate 2). The Malgas River is the western, southern and south eastern boundary of the property.



Plate 4. Examples of vegetation cover in the study area. Thumbnail numbers refer to locations at which images were taken (see Plate 2). Numbers 025, 033, 036 and 037 show examples of impenetrable vegetation. Note that the south east portion of the study area could not be surveyed on foot due to dense vegetation. Point 034 shows disturbance by former mining activities (see Plate 2).



Plate 5. Examples of exposed ground surfaces and profiles where thorough searches for archaeological traces were conducted. Thumbnail numbers refer to locations at which images were taken (see Plate 2).

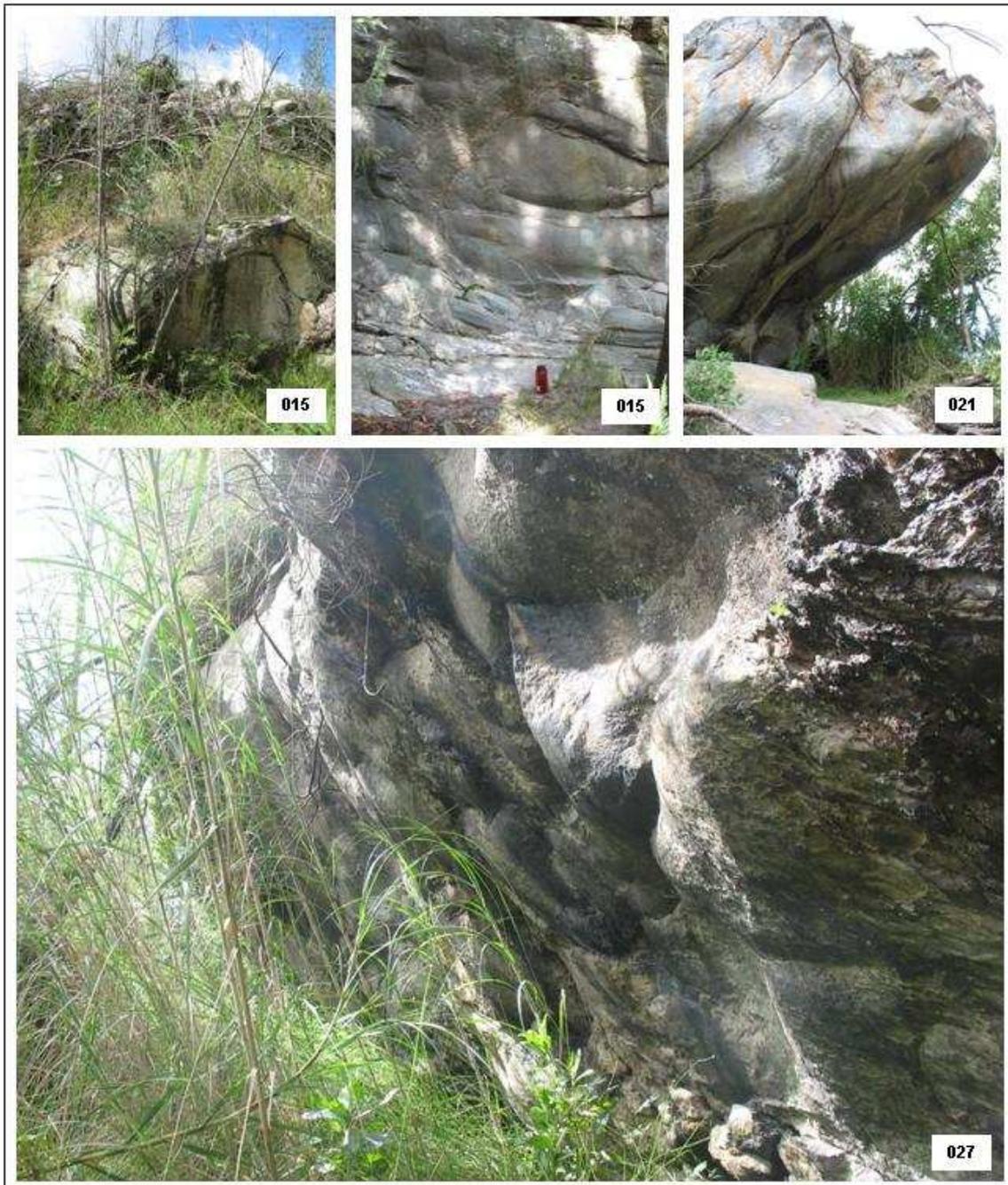


Plate 6. Examples of rock shelters and overhangs inspected along steep slope in the west to north west portion of the study area. Thumbnail numbers refer to locations at which images were taken (see Plate 2).