ARCHAEOLOGICAL INVESTIGATION OF EIGHT PROPOSED BORROW PITS FOR THE PROPOSED REHABILITATION OF THE N9 FROM WOLWEFONTEIN TO COLESBERG NORTHERN PROVINCE

Prepared for

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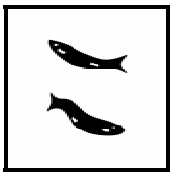

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Executive summary

An archaeological investigation of eight borrow pits located around the town of Colesberg in the Northern Cape Province has identified no significant impacts to pre-colonial archaeological heritage remains that will need to be mitigated prior to the proposed development activities.

The proposed borrow pits have been identified as material sources for the proposed rehabilitation and maintenance of Section 7 of National Route 9 (N9) between Wolwefontein and Colesberg and the proposed construction of a new grade separated interchange between the N1 and N9 at Colesberg.

The following findings were made:

Stone Age artefacts were documented at each of the proposed eight borrow pits, but the material are spread very thinly and unevenly over the surrounding landscape.

The archaeological remains have been rated as having low local significance.

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1. INTRODUCTION

1.1 Background and brief

CCA Environmental (Pty) Ltd, on behalf of South African National Roads Agency Limited (SANRAL) requested the Agency for Cultural Resource Management to undertake an archaeological investigation of eight borrow pits located alongside the National Route 9 (N9), between Colesberg and Wolwefontein and around the town of Colesberg in the Northern Cape Province.

The proposed borrow pits have been identified as possible material sources for the rehabilitation of the N9 Section 7, between Wolwefontein (km 63.63) and Colesberg (km 94.84) and the proposed construction of a new grade separated interchange between the N1 and N9 at Colesberg.

The aim of the study is to locate, identify and map archaeological heritage remains that may be negatively impacted by the implementation of the proposed project, and to propose measures to mitigate against the impact.

Dr John Almond has been appointed to undertake a Palaeontological Impact Assessment of the proposed project.

2. TERMS OF REFERENCE

The terms of reference for the archaeological study were:

- to determine whether there are likely to be any archaeological sites of significance within the proposed borrow pits;
- to identify and map any sites of archaeological significance within the proposed borrow pits;
- to assess the sensitivity and conservation significance of archaeological sites located within the proposed borrow pits;
- to assess the status and significance of any impacts resulting from the proposed development, and
- to identify mitigatory measures to protect and maintain any valuable archaeological sites that may exist within the proposed borrow pits.

3. THE STUDY AREA

Locality maps indicating the approximate location of the eight borrow pits are illustrated in Figures 1 to 3. Colesberg is situated about 280 kms south of Bloemfontein on the N1.

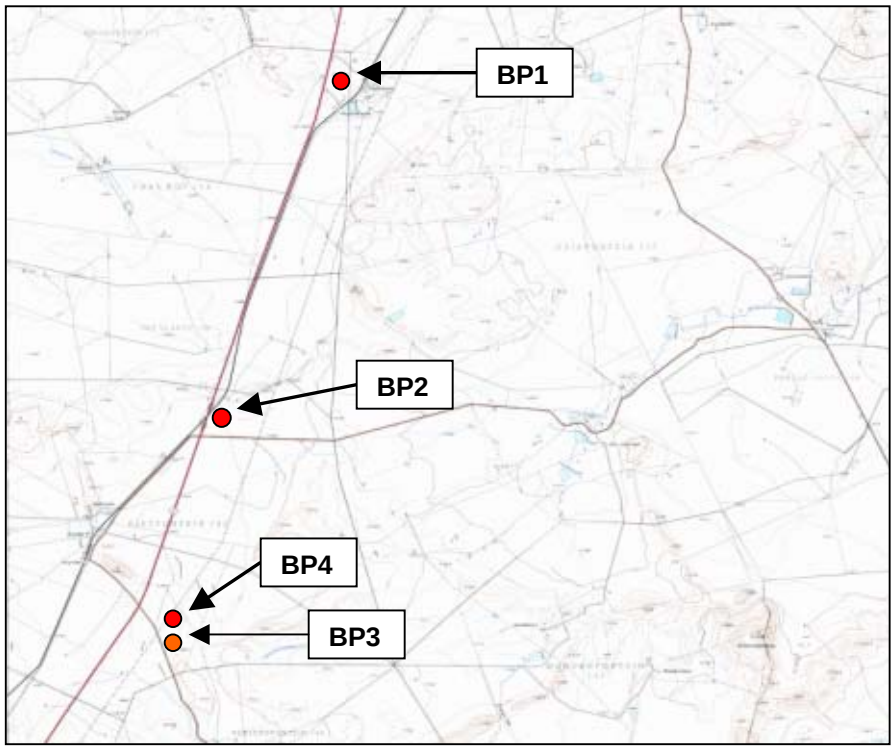

Figure 1. Locality map (3025CC Arundel)

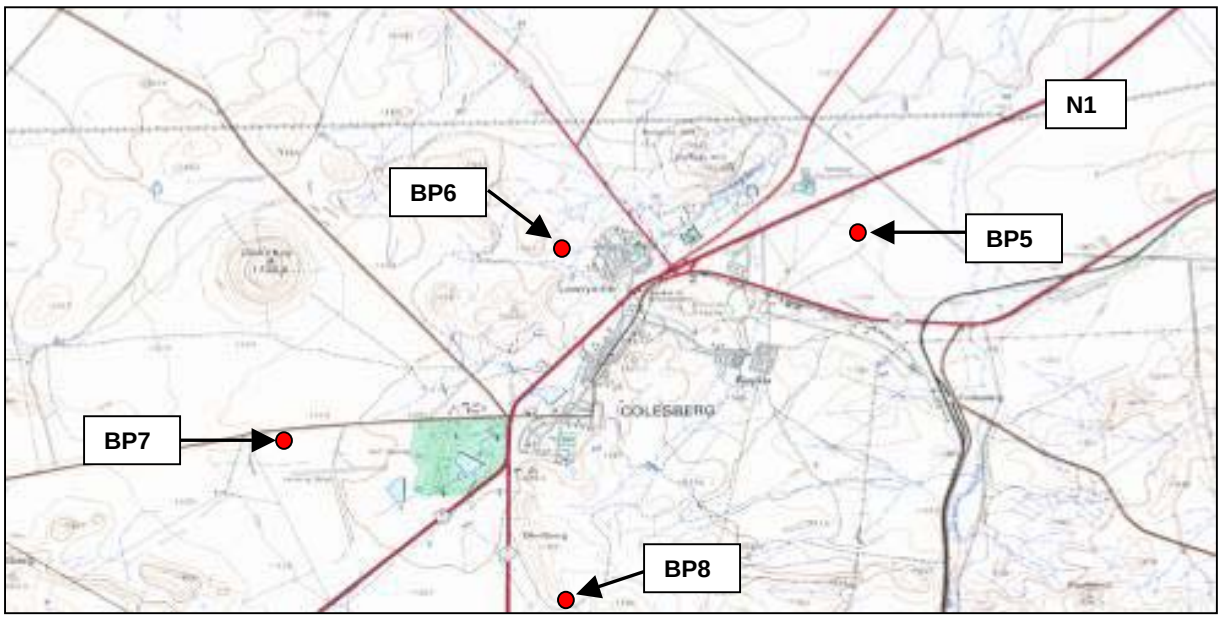

Figure 2. Locality Map (3025 CA Colesberg)

Figure 3. Aerial photograph indicating location of the 4 borrow pits around the town of Colesberg.

4. APPROACH TO THE STUDY

4.1 Method of survey

The approach followed in the archaeological study entailed a site inspection of each of the eight proposed borrow pits.

Archaeological heritage remains were recorded using a Garmin Geko GPS unit set on map datum wgs 84.

Borrow pits 1 to 4 were visited on 19 March 2008 and borrow pits 5 to 8 on 17 November 2008.

4.2. Constraints and limitations

There were no constraints or limitations associated with the study.

4.3 Identification of potential risks

There are no potential (archaeological) risks associated with the proposed project.

5. LEGISLATIVE REQUIREMENTS

The following section provides a brief overview of the relevant legislation.

5.1 The National Heritage Resources Act (Act No. 25 of 1999)

The National Heritage Resources (NHR) Act requires that "…any development or other activity which will change the character of a site exceeding 5 000m², or the rezoning or change of land use of a site exceeding 10 000 m², requires an archaeological impact assessment"

The relevant sections of the Act are briefly outlined below.

5.2 Structures (Section 34 (1))

No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the South African Heritage Resources Agency (SAHRA), or Heritage Western Cape.

5.3 Archaeology (Section 35 (4))

Section 35 (4) of the NHR stipulates that no person may, without a permit issued by HWC, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object.

5.4 Burial grounds and graves (Section 36 (3))

Section 36 (3) of the HHR stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority.

6. FINDINGS

6.1 Borrow Pit 1 (S 30° 49 934' E 25° 04 403')

The proposed site – an existing borrow pit up against a Koppie - is located on the Farm Taaiboslaagte alongside the eastern edge of the N9 (Figure 4-6). The proposed borrow pit is hidden from the N9 by a ridge. The borrow pit is about 3 m deep in places. Fill or selected base material will be sourced for the proposed rehabilitation of the road. The receiving environment slopes fairly gently from north to south and is covered with thick indigenous grasses and some sporadic bush. Several large dumps of stockpile material still occur on the site.

Findings:

A very thin and dispersed scatter of a few thin, Later Stone Age (LSA) dolerite flakes, chunks and an utilised flake, and two weathered and patinated thick, chunky Middle Stone Age (MSA) dolerite flakes were documented on the proposed site.

The archaeological remains have been rated as having low local significance.

Figure 4. Aerial photograph showing the location of Borrow Pit 1

Figure 5. Borrow Pit 1. View facing south

Figure 6. Borrow Pit 1. View facing north

6.2 Borrow Pit 2 (S 30° 54 763' E 25° 02 702')

The proposed site – a large, existing borrow pit - is located on the Farm Rietfontein, alongside the eastern edge of the N9, next to a railway crossing (Figures 7-9). The borrow pit is enclosed within a fence measuring ± 300 m x ±120 m. The current borrow pit depth varies between 2 m and 4 m. Fill or selected base material will be sourced for the proposed rehabilitation of the road. The receiving environment is flat and in an already, highly disturbed and degraded state. Large areas have already been scraped, while large patches once containing stockpile material were also noted.

Findings:

Scatters of thin, LSA dolerite flakes, including a few bladelets and some chunks and two small round cores were counted on the site, but these occur in a very disturbed and degraded context. A few flakes were also noted in the access road leading down into the existing borrow pit. Several weathered and patinated, MSA flakes were also noted lying about.

Figure 7. Aerial photograph showing the location of Borrow Pit 2

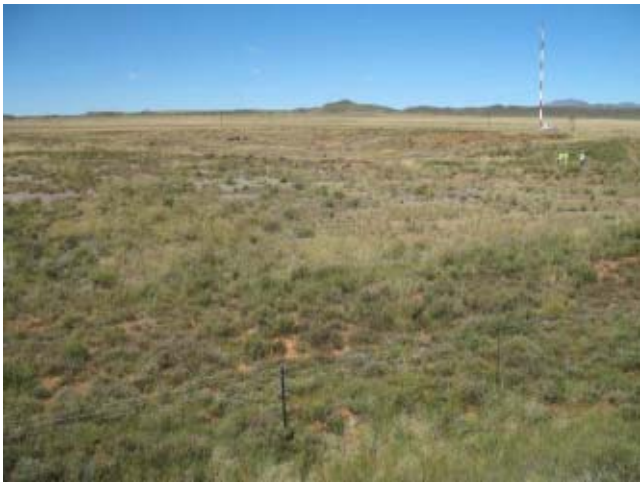

Figure 8. Borrow Pit 2. View facing east

Figure 9. Borrow Pit 2. View facing east

6.3 Borrow Pit 3 (S 30° 57 516' E 25° 02 012')

The proposed site – a fairly small, existing borrow pit - is located alongside the Bosberg Road on the Farm Arundel and about 450 m east of the N9 (Figures 10 & 11). The borrow pit is about 2.5 m deep. The site is fairly flat, but slopes gently toward the south east. Fill or selected base material will be sourced for the proposed rehabilitation of the road. Except for the existing borrow pit, the receiving environment is undisturbed and covered with thick indigenous grass. Very little surface stone is present. The north western edge of the extent of the proposed borrow pit is defined by a small stone littered, hill-washed slope, with a remnant dolerite dyke.

Findings:

A few weathered and patinated MSA quartzite and dolerite flakes were found at the bottom of the hill-washed slope in the north western portion of the site. One partially retouched LSA flake on a reworked MSA flake was also found. A few more flake tools were counted on the slopes, but these fall outside the proposed extent of the borrow pit.

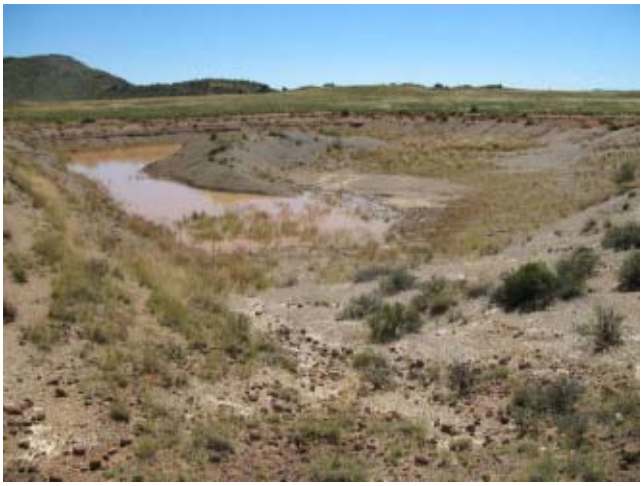

Figure 10. Borrow Pit 3. View facing north west

Figure 11. Borrow Pit 3. View facing north west

6.4 Borrow Pit 4 (S 30° 57 230' E 25° 02 040')

The proposed (existing) borrow pit is located about 300 m north west of Borrow Pit 3 and about 300 m east from the N9, on the Farm Arundel (Figures 12-14). The borrow pit is not visible from the road as it is hidden behind a stone covered Koppie. The existing borrow pit is about 5 m deep. The borrow pit would be extended by removing the Koppie adjacent to it, for fill or selected base material. The natural contour of the hill will be followed in order to minimise any visual impact.

Findings:

A low density scatter of weathered and patinated MSA and LSA dolerite flakes were documented on the approach to the proposed borrow pit. No stone flakes were found within the area of the proposed new borrow pit area.

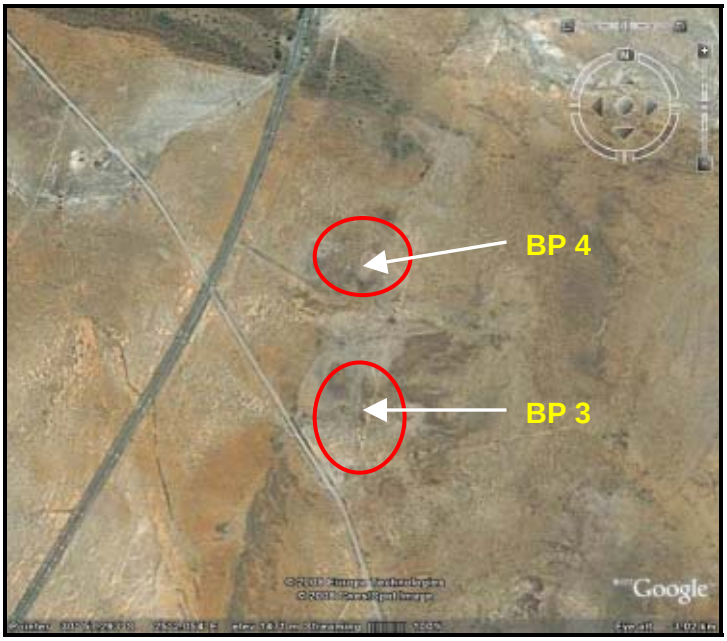

Figure 12. Aerial photograph showing the location of Borrow Pits 3 and 4

Figure13. Borrow Pit 4. View facing south

Figure 14. Borrow Pit 4. View facing east

6.5 Borrow Pit 5 (S 30° 42 22.8' E 25° 07 43.2')

The proposed site – an existing borrow pit - is located south of the N1 National Road, on municipal land (Remainder Erf 675) alongside a large, new municipal housing development (Figure 15). Access to the proposed site is via the R58 to Burgersdorp. The proposed borrow pit comprises a prominent kopje in an otherwise flat and degraded landscape (Figure 16). The existing borrow pit has been terraced and the sides of the kopje have been extensively worked. Large piles of fill material from the new development have been tipped alongside its southern edge (Figures 17-19). If utilised, selected fill material (and the existing fill material from the development) will be excavated from the southern side of the kopje, thus minimising any visual impact from the N1.

Findings:

One weathered chunk, one broken, partially retouched and weathered Middle Stone Age (MSA) flake and one flat weathered MSA flake was documented on the proposed site. All the tools are in dolerite.

The archaeological remains have been rated as having low local significance.

Figure 15. Aerial photograph indicating Borrow Pit 5

Figure 16. BP 5. View of the site facing east

Figure 17. BP 5. Site facing west

Figure 18. BP 5. View facing west

Figure 19. BP 5. View facing south

6.6 Borrow Pit 6 (S 30° 42 31.2' E 25° 05 29.6')

The proposed site – an existing borrow pit - is located in Colesburg, on municipal land (Remainder Erf 675). Access to the site is via the R369 to Petrusville. The proposed borrow pit is located alongside the town cemetery. The surrounding environment is severely degraded. The existing borrow pit has been extensively exploited (Figures 20-24). Several test pits have already been excavated on the proposed site. A small dolerite kopje and dolerite covered slopes occur immediately behind the proposed new site. Selected sub-base material from existing deposit will be exploited from the degraded south east facing slopes of the borrow pit.

Findings:

Three large, very weathered partially retouched dolerite MSA flakes and one broken, weathered flake were found on the proposed site.

No rock engravings were found among any of the boulders and the small kopje.

The archaeological remains have been rated as having low local significance.

Figure 20. Aerial photograph indicating Borrow Pit 6

Figure 21. BP 6. View facing north west

Figure 22. BP 6. View facing north

Figure 23. BP 6. View facing south

Figure 24. BP 6. View facing west

6.7 Borrow Pit 7 (S 30° 43 40.5' E 25° 04 07.8')

The proposed site – an existing borrow pit - is located north of the N1, on municipal land (Remainder Erf 675). Access to the proposed site is via a gravel road to Terewa, from the Engen Garage in Colesburg. The borrow pit is located directly alongside (i.e. west of) the gravel road (Figures 25-29) Very little surface stone occurs on the site, which is covered in dry winter grass and some sporadic bush. The site is moderately flat, sloping gently from north to south. There are no significant landscape features on the site. Several test pits have been excavated in the surrounding area. Selected base material (dolerite and mudstone) will be utilised from the proposed site.

Findings:

Three weathered MSA flakes, one weathered MSA chunk, one weathered MSA core and one flat Later Stone Age (LSA) flake were found on the proposed site. All the tools are in dolerite.

The archaeological remains have been rated as having low local significance.

Figure 25. Aerial photograph indicating Borrow Pit 7

Figure 26. BP 7. View facing south

Figure 27. BP 7. View facing east

Figure 28. BP 7. View facing north east

Figure 29. BP 7. View facing south east

6.8 Borrow Pit 8 (S 30° 45 16.8' E 25° 05 24.1')

The proposed site – an existing borrow pit - is located on the Farm Taaiboslaagte about 700 m east of the N9 (Figures 30-33) and about three kms south of Colesburg. The proposed borrow pit is obscured from the N9 by a low ridge. Fill or selected base material (dolerite and mudstone) will be sourced from the proposed site. Material will only be exploited from the southern edge of the existing borrow pit. The receiving environment is fairly flat but slopes gently from east to west and is covered with thick indigenous grasses and some sporadic bush. There are no significant landscape features on the proposed site, although there are prominent dolerite kopjes about 500 m south of the proposed borrow pit.

Findings:

Moderately large numbers of stone tools were documented on the site, but these occur in a disturbed context. Most of the tools were documented on a gravel patch near the south western edge of the existing borrow pit (refer to Figure 34), while some tools are spread unevenly in the surrounding landscape, mostly to the south east and near the edge of the existing borrow pit.

It is clear that this archaeological site has been disturbed/damaged by previous borrow pit activities. All the tools comprise highly weathered MSA flakes, chunks and a several rounded (prepared) cores. Some of the flakes are partially retouched, but no formal tools were found. The tools are identical to those that were documented in the 2008 study (Kaplan 2008). All the tools are in dolerite.

A collection of tools is illustrated in Figure 35.

The archaeological remains have been rated as having low local significance.

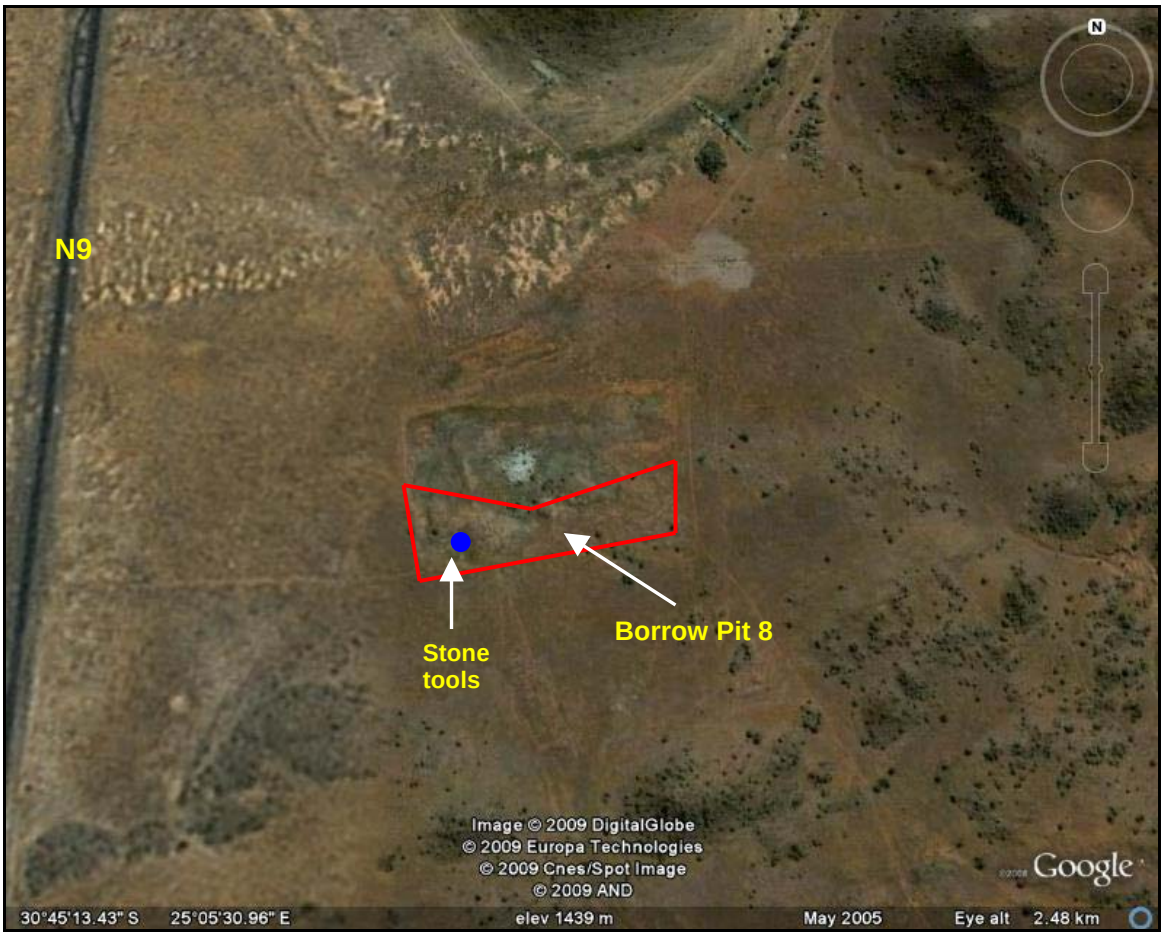

Figure 30. Aerial photograph indicating Borrow Pit 8

Figure 31. Borrow Pit 8. View facing north

Figure 32. Borrow Pit 8. View facing south west

Figure 33. Borrow Pit 8. View facing south west

Figure 34. Borrow Pit 8. View facing north

Figure 35. Stone tools. Scale is in cm

7. IMPACT STATEMENT

The archaeological investigation of eight borrow pits alongside the N9 near Colesberg, and around the town of Colesberg, has identified no significant impacts to pre-colonial archaeological remains that will need to be mitigated prior to construction activities commencing.

The proposed project will not have any negative impact on the heritage qualities of the receiving environment. Visual impacts will be minimised and the cultural landscape qualities of the study site and affected environment will not be compromised, either.

Table 1 presents an assessment of the archaeological impacts of the proposed project.

Table 1. Assessment of the archaeological impacts of the proposed project.

Borrow Pit (BP)	Extent	Duration	Intensity	Probability	Confidence	Significance Without Mitigation	Significance With mitigation
BP 1	Local	Short term	Low	Improbable	High	Very Low	N/A
BP 2	Local	Short term	Low	Improbable	High	Very Low	N/A
BP 3	Local	Short term	Low	Improbable	High	Very Low	N/A
BP 4	Local	Short term	Low	Improbable	High	Very Low	N/A
BP 5	Local	Short term	Low	Improbable	High	Very Low	N/A
BP 6	Local	Short term	Low	Improbable	High	Very Low	N/a
BP 7	Local	Short term	Low	Improbable	High	Low	Low
BP 8	Local	Short term	Low	Improbable	High	Low	Low

8. RECOMMENDATIONS

With regard to the proposed project, no archaeological mitigation is required, and the project should be allowed to proceed.