ARCHAEOLOGICAL SCOPING PROPOSED BULKWATER SUPPLY INFRASTRUCTURE PLANNING FOR THE CITY OF CAPE TOWN

Prepared for

ORRIE WELBY - SOLOMON BKS (Pty) Ltd JOINT VENTURE

Ву

AGENCY FOR CULTURAL RESOURCE MANAGEMENT

PO Box 159 Riebeek West 7306

Ph/Fax: 022 461 2755 Mobile: 082 321 0172 Email: acrm@wcaccess.co.za

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EXECUTIVE SUMMARY

Orrie Welby - Solomon BKS (Pty) Ltd Joint Venture requested that the Agency for Cultural Resource Management undertake archaeological scoping for the proposed Bulkwater Supply Infrastructure Planning for the City of Cape Town.

The project comprises various locational options for the siting of a new water treatment plant, reservoir and associated supply pipelines and infrastructure in the vicinity of Franschoek, Pniel, Paarl, Klapmuts, and Durbanville.

Archaeological scoping identifies potential need for archaeological specialist studies as well as any other heritage issues.

The approach followed in the scoping study entailed undertaking a vehicle and foot assessment of the proposed project.

A desktop study was also undertaken.

No significant precolonial archaeological remains were located during archaeological scoping of the proposed project, although ancient Stone Age implements were noted.

Historical corrugated iron railway houses (c 1870-1880) at Klein Drakenstein and Simondium, in the Franschoek/Paarl area, occur alongside the railway line in the proposed pipeline route. These buildings are protected under the National Heritage Resources Act (No. 25 of 1999) and have potentially high conservation value.

Overall, the receiving environment for the proposed project constitutes an already severely modified, altered and disturbed environment. It is estimated that more than 95% and 98% respectively of the proposed pipeline route from the Dasbos Outlet to Muldersvlei, and from Muldersvlei to Spes Bona, passes through agricultural land.

The proposed alternative water treatment plant and reservoir sites in the Muldersvlei/Joostenberg area, are also located in old agricultural land and/or in already severly modified and degraded environments.

Archaeological scoping has shown that no potential significant precolonial impacts are likely to occur during planning, construction and implementation of the proposed project.

There are also no potential precolonial archaeological risks associated with the proposed project.

The siting of the proposed development in a sensitive rural landscape such as the Groot Drakenstein–Simondium area may, however, impact negatively on the rural quality and cultural significance of the landscape.

The potential impact of the proposed Bulkwater Supply Infrastructure Planning for the City of Cape Town on precolonial archaeological remains is rated to be low provided that:

- An appropriate specialist investigates the historical corrugated iron railway houses alongside the railway line at Klein Drakenstein and Simondium.
- The locational option for the siting of the supply pipeline, the water treatment plant and reservoir are subjected to a Phase 1 Archaeological Impact Assessment.
- A cultural-heritage landscape study of the proposed project in the Groot Drakenstein-Simondium area is undertaken by an appropriate specialist.

The proposed supply pipeline, water treatment plants and reservoir sites are suitable for development and neither site is more preferred than the other is.

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1 INTRODUCTION

1.1 Background and brief

Orrie Welby - Solomon BKS (Pty) Ltd Joint Venture requested that the Agency for Cultural Resource Management undertake archaeological scoping for the proposed Bulkwater Supply Infrastructure Planning for the City of Cape Town.

The project comprises various locational options for the siting of a new water treatment plant, reservoir and associated supply pipelines and infrastructure in the vicinity of Franschoek, Pniel, Paarl, Klapmuts and Durbanville.

It is envisaged that raw water will be abstracted from the Dasbos outlet near Franschoek. The treated water will then be conveyed from a proposed water treatment plant to a planned transfer reservoir at Spes Bona, just north of Durbanville. It is also proposed to locate a storage reservoir in the Muldersvlei/Joostenberg area.

Archaeological scoping identifies potential need for archaeological specialist studies as well as any other heritage issues.

2 TERMS OF REFERENCE

The terms of reference for the scoping study were:

- to identify potential heritage resources;
- to determine the importance of the heritage resources, and
- to identify the potential need for archaeological specialist studies as well as any other heritage issues.

3 STUDY APPROACH

3.1 Method of survey

The approach used in the study entailed undertaking a vehicle and foot assessment of the proposed project.

A desktop study was also undertaken.

Archaeological work undertaken in the Franschoek area has recorded relatively large numbers of Stone Age tools (Kaplan 1998, 1999, 2000, 2001a, 2002a,b, 2003a,b,c,d,e). The most commonly-occurring tools in the area are assigned to a period known as the Early Stone Age¹ (ESA). ESA tools were first discovered on terraces above the Eerste River in Stellenbosch

¹ A term referring to the period between 2 million and 200 000 years ago.

(Peringuey 1902, 1911). Among these was an artefact type of great antiquity recognised as an early handaxe. For many years after this, the ESA of South Africa was referred to as the `Stellenbosch Culture' until the term was re-defined in the 1960s (Goodwin & Van Riet Lowe 1929).

Today the ESA is divided into the `Olduwan' period, which is up to 1.7 million years old. This industry is associated with the oldest and most simple human-made artefacts. This was followed by the `Acheulean' Tradition, a more developed stone artefact industry, characterised by the presence of specific types of stone tools such as handaxes, choppers and cleavers.

Acheulean sites have been recorded throughout South Africa and are especially associated with pans, river terraces, streams, and certain types of rock outcrops. Acheulean tools are also commonly found on mountain slopes, in degraded areas such as slope washes, road and bridge cuttings, excavations, in gravels deposits, vineyards, and in ploughed fields.

Younger Middle Stone Age² (MSA) and Later Stone Age³ (LSA) remains appear to be less common in the Franschoek area, but such sites are known to occur. LSA rock paintings occur in the Wemmershoek area and on the farm Môrelig (Kaplan 2003).

Little archaeological work has been undertaken in the Klapmuts area, other than a study commissioned in 2001 (Kaplan 2001b). A few Stone Age implements were noted, but the material was located in a severely disturbed context.

In the Klipheuwel/Durbanville area, two Early Stone Age⁴ (ESA) quarry sites were located during an archaeological assessment of the proposed alignment of the Main Road 174, N1 to Klipheuwel (Hart 1998; Kaplan 2003f,g). The sites are associated with large silcrete outcrops and large numbers of flaked stone, including waste stone and formal tools that have resulted from quarrying of the silcretes by precolonial people.

In Durbanville, LSA tools were located at the site of the proposed Spes Bona Reservoir (Kaplan 2001c). The tools were found in a severly disturbed context, however.

4 THE STUDY AREA

A locality map of the proposed project is illustrated in Figure 1.

4.1 Limitations

There are no constraints or limitations associated with the proposed project.

² A term referring to the period between 200 000 and 20 000 years ago.

³ A term referring to the last 20 000 years of precolonial history in southern Africa.

⁴ A term referring to the period between 2 million and 200 000 years ago.

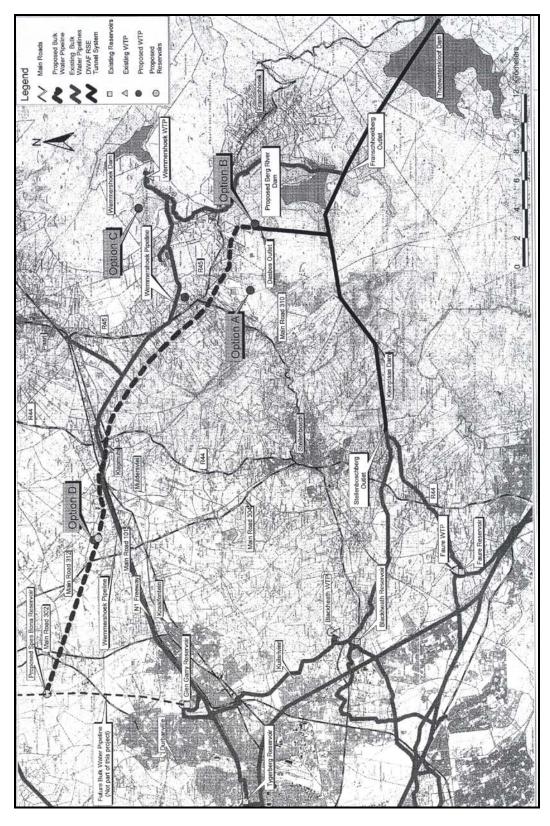


Figure 1. Archaeological Scoping Bulk Water Supply Infrastructure Planning for the City of Cape Town. Locality Map.

5 LEGISLATIVE REQUIREMENTS

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

The construction of a road, pipeline or other similar form of linear development exceeding 300 m in length, or 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 in terms of the National Heritage Resources Act (No. 25 of 1999).

5.1.1 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 Heritage Western Cape (HWC), the responsible provincial resources authority.

5.1.2 Archaeology (Section 35 (4))

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.

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

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.

As the delegated provincial heritage authority, and in compliance with the terms of the National Heritage Resources Act, a copy of this report must be submitted to HWC, for their approval⁵.

6 DESCRIPTION OF THE PROJECT

6.1 Alternative sites for the WTP

Four alternative sites for the siting of a new water treatment plant (WTP) have been identified between Franschoek and Muldersvlei (Figure 1). These include

- A. Dwars River Valley
- B. Dasbos Outlet
- C. Wemmershoek
- D. Muldersvlei/Joostenberg

⁵ The report should be sent to Dr Antoniette Jerardino, Archaeologist, Heritage Western Cape, Private Bag X9067, Cape Town, 8000.

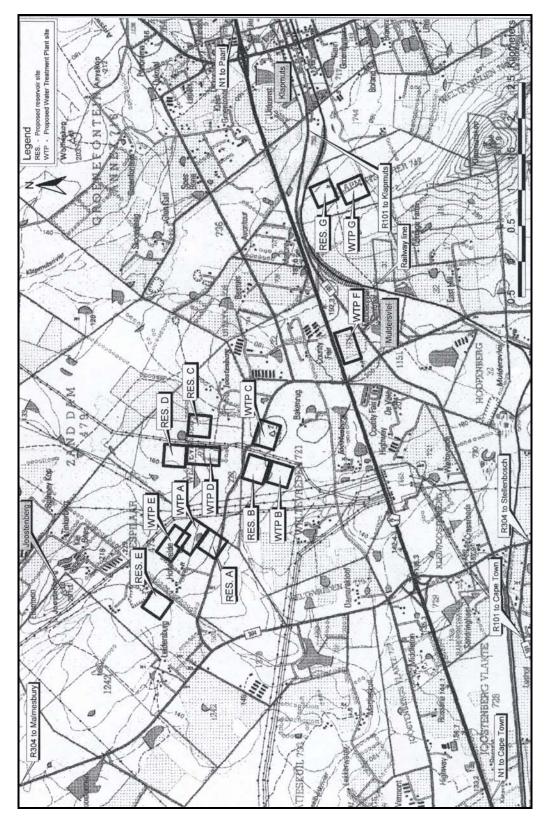


Figure 2. Archaeological Scoping Bulk Water Supply Infrastructure Planning for the City of Cape Town Locality Plan of Option D Alternatives.

6.2 Positioning of the Storage Reservoir

It is proposed to locate a storage reservoir in the Muldersvlei/Joostenberg area. Figure 2 illustrates a locality plan of Option D (WTP and Reservoir) alternatives.

6.3 Pipeline route location

The total length of the main pipeline from the Dasbos outlet to the planned transfer reservoir at Spes Bona, just outside Durbanville is approximately 38 km. A schematic indication of the main pipeline route between the Dasbos outlet and the transfer reservoir at Spes Bona is indicated in Figure 1. A number of alternative pipeline routes have also been identified (refer to Aerial Orthophoto drawings that indicate the proposed pipeline supply routes).

7 IDENTIFICATION OF POTENTIAL RISKS

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

The siting of a proposed industrial development in a sensitive rural landscape such as the Groot Drakenstein–Simondium area may, however, impact negatively on the rural quality and cultural significance of the landscape (Winter 2000).

8 FINDINGS

8.1 Supply pipeline

It is estimated that from the Dasbos outlet to Muldersvlei, a total pipeline length of some 26-km, about 95% of the proposed route and two proposed alternative routes goes through agricultural land. These comprise mainly vineyards, grazing areas and/or land used for any other agricultural use (Figures 3-9).

It is further estimated that from Muldersvlei to Spes Bona, a total pipeline length of some 12-km, about 98% of the proposed route and three proposed alternative routes goes through agricultural land. These comprise mainly vineyards, grazing areas and/or land used for any other agricultural use (Figures 10-19).

From Dasbos to Muldersvlei, mainly large ESA tools in quartzite were noted during archaeological scoping. ESA tools were noted in a cobble-strewn sandy track near a small tributary of the Berg River near the Dasbos outlet. ESA tools were also noted on a number of farms/wine estates and smallholdings, including amongst others, Bellingham, L'Ormarins, Normandy, Rhodes Fruit Farms, Vrede en Rust, Backsberg, Babylonstoren, Klein Paradys, Glen Carlou, Cowlin, and Anura near Klapmuts. Tools were noted mainly in gravel farm roads, small culverts/excavations, among piles of stone (river cobbles) from cleared fields, and in blocks of vineyards. All the tools were found in a severely disturbed context.

From Muldersvlei to Spes Bona, ESA tools in quartzite were noted in vineyards and in large tracts of agricultural lands, but not necessarily within the proposed and proposed alternative pipeline routes. Tools were noted on the farms Hoopenburg and Goedverwacht and on other farms in the area west of the MR 174. The tools were all found in a severely disturbed context.



Figure 3. Archaeological Scoping Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Dasbos outlet to Muldersvlei.



Figure 4. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Dasbos outlet to Muldersvlei.



Figure 5. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Dasbos outlet to Muldersvlei.



Figure 6. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Dasbos outlet to Muldersvlei.



Figure 7. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Dasbos outlet to Muldersvlei.

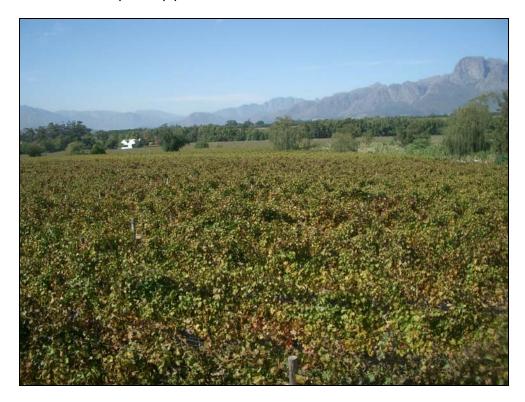


Figure 8. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Dasbos outlet to Muldersvlei.



Figure 9. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Dasbos outlet to Muldersvlei.



Figure 10. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Muldersvlei to Spes Bona.



Figure 11. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Muldersvlei to Spes Bona.



Figure 12. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Muldersvlei to Spes Bona.



Figure 13. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Muldersvlei to Spes Bona.



Figure 14. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Muldersvlei to Spes Bona.



Figure 15. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Muldersvlei to Spes Bona.



Figure 16. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Muldersvlei to Spes Bona.



Figure 17. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Muldersvlei to Spes Bona.



Figure 18. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Muldersvlei to Spes Bona.



Figure 19. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed pipeline route from Muldersvlei to Spes Bona.

It is interesting to note that fewer Stone Age artefacts were noted between Muldersvlei and Spes Bona, than in the area between Franschoek and Klapmuts, but this may reflect a survey bias.

One corrugated iron railway house and associated outbuildings were located alongside the railway line at Klein Drakenstein alongside the R45 (Figures 20 & 21).

A further nine corrugated iron railway houses with associated outbuildings were located alongside the railway line at Simondium, alongside the R45 (Figures 22 & 23).

According to Industrial Archaeologist, Mr David Worth (pers. comm.), these railway houses were built sometime between 1870 and 1880 (when the railway lines were first laid out), but not later than the early 1900's. They were built by the old South African Railway Services (SARS) mainly to accommodate railway staff and their families.

These historic buildings are older than 60 years and therefore protected under National Heritage Resources Act (No. 25 of 1999). They occupy a `sense of place' in the history of South African railway system and have potentially important conservation and cultural-historical value.

8.2 Reservoirs

Six proposed alternative reservoir sites have been identified (Figure 2).

RES. G

The site is located in old grazing lands west of the town of Klapmuts (Figure 24). No archaeological remains were noted.

RES. B

The site is located in a block of vineyards on the farm Hoopenburg (Figure 25). No archaeological remains were noted.

RES. C

The site is located in old agricultural lands on the farm Goedverwacht (Figure 26). No archaeological remains were noted.

RES. D

The site is located in old agricultural lands on the farm Goedverwacht (Figure 27). A few ESA tools were noted in recently ploughed fields.

RES. A

The site is located in old agricultural lands (Figure 28). No archaeological remains were noted, but some ESA tools were noted near an excavation trench alongside the fenceline.



Figure 20. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Railway house at Klein Drakenstein Station.



Figure 21. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Railway houses at Klein Drakenstein Station.



Figure 22. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Railway house at Simondium.



Figure 23. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Row of railway house at Simondium.



Figure 24. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for RES. G.



Figure 25. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for RES. B.



Figure 26. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for RES. C.



Figure 27. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for RES. D.



Figure 28. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for RES. A.

RES. E

The site is located alongside the Joostenberg brick works and quarry (Figure 29). No archaeological remains were noted.

8.3 Water Treatments Plants (WTP)

A Dwars River Valley

The site is located at Malan's Quarry (Figure 30). The surrounding area is severely degraded, with large piles of quarried material, dams, roads and plant equipment. The proposed site is very disturbed, and has been graded and/or scraped. A number of excavation pits occur on the site. No archaeological remains were noted, nor in any of the excavation pits.

B Dasbos Outlet

The site is located just below the Dasbos outlet in old pine plantations, most of which have been cleared (Figure 31). The site is severely modified, and partially infested with alien vegetation. No archaeological remains were noted.

C Wemmershoek

The site is located in the La Motte State Forest, in old pine plantations, most of which have already been cleared (Figure 32). No archaeological remains were noted on the proposed site, but one ESA flake tool was noted in the main access track just across a dry riverbed.

D Muldersvlei/Joostenberg

Seven proposed alternative WTP sites have been identified (Figure 2).

WTP G

The site is located in old grazing lands west of the town of Klapmuts and directly south of RES. G (Figure 33). No archaeological remains were noted.

WTP F

The site is located in some fields between the N1 and the R101 (Figure 34). No archaeological remains were noted.

WTP B

The site is located in a block of vineyards on the farm Hoopenburg (Figure 35). No archaeological remains were noted, but a few ESA tools were noted in the gravel farm roads.

WTP C

The site is located in old fields directly opposite WTP B (Figure 36). No archaeological remains were noted.



Figure 29. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for RES. E.



Figure 30. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for WTP A. (Dwars River Valley).



Figure 31. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for WTP B (Dasbos Outlet).



Figure 32. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for WTP C (Wemmershoek).



Figure 33. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for WTP G.



Figure 34. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for WTP F.



Figure 35. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for WTP B (Muldersvlei/Joostenberg).



Figure 36. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for WTP C (Muldersvlei/Joostenberg).

WTP D

The site is located in old agricultural lands on the farm Goedverwacht (Figure 37). A few ESA tools in quartzite were noted alongside the farm road, on the edge of a line of Bluegum trees in the western and northern portions of the site.

WTP A

The site is located in old agricultural lands (Figure 38). No archaeological remains were noted, but some ESA tools were noted near an excavation trench alongside the farm fenceline.

WTP E

The site is located in a block of vineyards and old agricultural lands (Figure 39). No archaeological remains were noted.



Figure 37. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for WTP D.



Figure 38. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for WTP A (Muldesrvlei/Joostenberg).



Figure 39. Archaeological Scoping. Bulk Water Supply Infrastructure Planning for the City of Cape Town. Proposed site for WTP E.

9 SITE SUITABILITY

Archaeological scoping has indicated that no significant precolonial archaeological remains are likely to be negatively impacted during planning, construction and implementation of the proposed Bulkwater Supply Infrastructure Planning for the City of Cape Town, although ancient Stone Age tools will likely be recovered.

The study has shown that the proposed and proposed alternative supply pipeline routes, and the WTP and reservoir sites are suitable for development and that neither site is more preferred in terms of the potential archaeological impacts.

A `Red Flag' area, however, are the historical corrugated iron railway houses and associated buildings that occur alongside the railway line at Klein Drakenstein and Simondium, which are located within the proposed 27 m wide pipeline servitude.

10 CONCLUSION

Archaeological scoping has shown that the potential impact of the proposed Bulkwater Supply Infrastructure Planning for the City of Cape Town on precolonial archaeological remains is rated to be low, provided that.

- An appropriate specialist investigates the historical corrugated iron railway houses and associated outbuildings alongside the railway line at Klein Drakenstein and Simondium.
- The final locational option for the siting of the supply pipeline, the water treatment plant and reservoir are subjected to a Phase 1 Archaeological Impact Assessment.
- A cultural—heritage landscape study of the proposed project in the Groot Drakenstein-Simondium area is undertaken by an appropriate specialist.

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