

AN ARCHAEOLOGICAL IMPACT ASSESSMENT FOR PROPOSED UPGRADING AND EXTENSION OF THE OXIDATION DAMS AT THE CALVINIA WWTW, NAMAKWA DISTRICT, NORTHERN CAPE

(Assessment conducted under Section 38 (8) of the
National Heritage Resources Act No 25 of 1999)

Prepared for:
Hantam Municipality
Private Bag X14
Calvinia
8190
Tel: 027 341 1011
Email: socialdev1@hantam.gov.za

August 2009



Prepared by

Lita Webley & David Halkett
Archaeology Contracts Office
Department of Archaeology
University of Cape Town
Private Bag
Rondebosch
7701

Phone (021) 650 2357
Fax (021) 650 2352
Email: Lita.Webley@uct.ac.za

EXECUTIVE SUMMARY

The Archaeology Contracts Office was appointed by the Hantam Municipality to undertake an Archaeological Impact Assessment for the upgrading and extension of the oxidation dams at the Calvinia WWTW, Namakwa District, Northern Cape Province.

The current footprint of the dams is 4,9 ha. The dams are not sufficient to handle the amount of sewage that is being treated at the plant. They are not functioning correctly due to engineering problems with regard the depth and width of the dams. The new design addresses the capacity of the dam, the implementation of a suitable lining for the dams as well as the quality of the water leaving the dams.

However, the future planned footprint is not yet available as this awaits the technical maps. There will be associated infrastructure such as a road, open area for parking, tool shed and toilet facilities.

The Hantam Mountains to the north of Calvinia has not been subjected to any archaeological research programmes or surveys in the past and virtually nothing is known of this area.

The survey was conducted on foot on the 30 July 2009 by Lita Webley and David Halkett of the Archaeology Contracts Office. They looked at a small fountain on the lower slopes of the Jakkalskoppe. While outside the development footprint, the fountain may have been important in the past. Apparently, people living in the adjoining areas do occasionally collect water from the fountain.

Despite the location of a little fountain on the hillside, there are no archaeological remains, no evidence of any human settlement (including structures such as kraals), no graves, etc. It seems that this was not a suitable location for settlement in the past.

It is recommended that the development should be approved. If any human remains are uncovered, development in the immediate environment should cease and SAHRA should be informed.

1. INTRODUCTION

The Archaeology Contracts Office was appointed by the Hantam Municipality to undertake an Archaeological Impact Assessment for the upgrading and extension of the oxidation dams at the Calvinia WWTW, Namakwa District, Northern Cape Province.

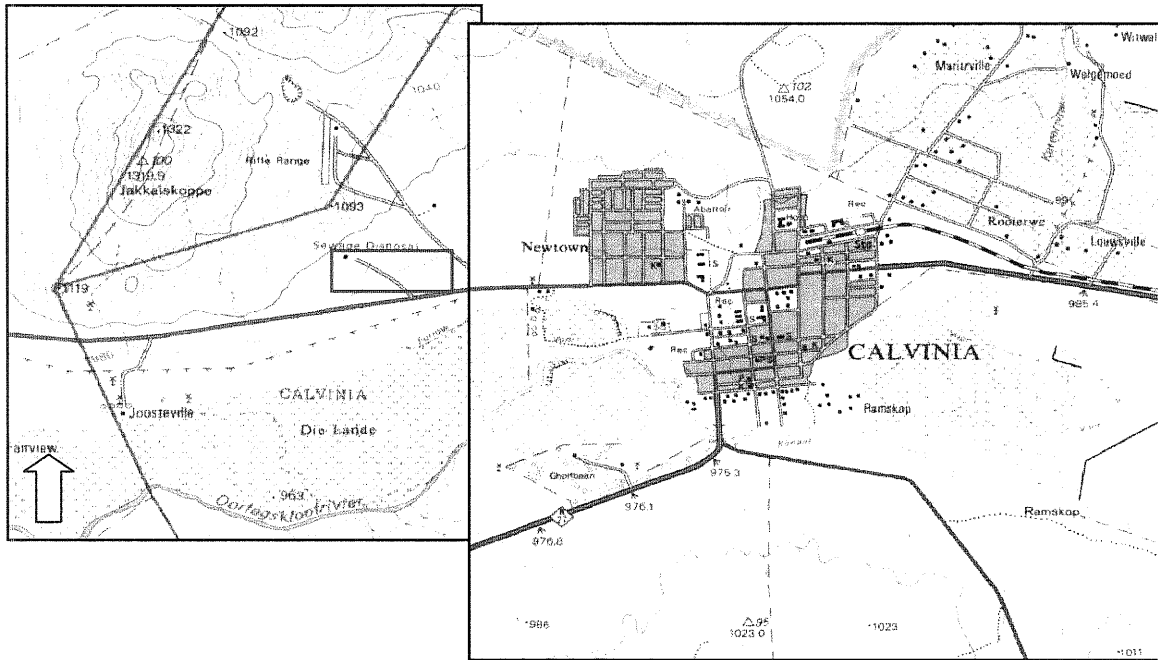


Figure 1: 1:50 000 map sheets of 3119 BC (Toringskop) and 3119 BD (Calvinia) showing the approximate location of the extension of the sewage works and the proposed cemetery.

The existing sewage works (WWTW) is located about 3km west from Calvinia, directly north of the R355 road to Loeriesfontein. The Hantam Mountains are located to the north of the facility. The Oorlogskloof River and cultivated lands are found to the south of the road.

The co-ordinates of the proposed development and upgrading of the existing sewage works (Figure 2) are given as:

A	S 31° 27' 51.81"	E 19° 44' 16.95"
B	S 31° 28' 07.07"	E 19° 44' 20.18"
C	S 31° 28' 03.86"	E 19° 44' 37.54"
D	S 31° 27' 55.30"	E 19° 44' 28.36"
E	S 31° 27' 51.49"	E 19° 44' 20.94"



Figure 2: The borders of the proposed extension to the Calvinia WWTW after Van Zyl Environmental Consultants cc. The location of the fountain is marked to the north-west of the site, while the location of the municipal dump is visible to the north-east. The drainage area below the oxidation dams is clearly visible.

2. THE DEVELOPMENT

The current footprint of the dams is 4,9 ha. The dams are not sufficient to handle the amount of sewage that is being treated at the plant. They are not functioning correctly due to engineering problems with regard the depth and width of the dams. The dams are also not currently lined. This means that the current dams may have a potential impact on the groundwater of the area. The water that currently leaves the final dam and drains into the cultivated lands below the R355 and the Oorlogskloof River (Figure 2), do not meet the minimum standards as set out by DWAF.

The development is subject to a Scoping and EIA phase. The new design addresses the capacity of the dam, the implementation of a suitable lining for the dams as well as the quality of the water leaving the dams.

However, the future planned footprint is not yet available as this awaits the technical maps. There will be associated infrastructure such as a road, open area for parking, tool shed and toilet facilities.

2.1 Alternative Sites

Alternative sites have not been identified by the Hantam Municipality due to a shortage of available land for this purpose.

3. TERMS OF REFERENCE

The aim of the archaeological impact assessment was to:

- Identify archaeological heritage resources at an early stage during the development;
- Determine the significance of any archaeological resources discovered during the survey;
- Determine whether the development would have a negative impact on these heritage resources;
- If the no-go option is not feasible, then make recommendations for mitigation.

4. LEGISLATION

The National Heritage Resources Act, No 25 of 1999 (Section 38 (1)) makes provision for a compulsory notification of the intent to development when any development exceeding 5000 m² in extent, or any road or linear development exceeding 300m in length is proposed. Section 38 (8) of the NHRA relates to impact assessments undertaken as part of an Environmental Impact Assessment.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological Sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37);
- Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) (Section 2 (d) (xxi)).

5. BACKGROUND INFORMATION

The Hantam Mountains to the north of Calvinia has not been subjected to any archaeological research programmes 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 of the proposed cemetery. 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.). Thus, the literature would suggest that both Later Stone Age and Middle Stone Age sites and material might be expected in this general area.

6. DESCRIPTION OF THE ENVIRONMENT

The property is bounded by the R355 to the south and there is a short gravel road which runs up to the sewage works and this defines the eastern edge (Figure 2). The terrain is located at the bottom of the southern slopes of the Hantam Mountains, within the catchment of the Oorlogskloof River. The ground slopes gently southward and there are numerous small rivulets which cross the area. The soil comprises decomposing shales, which give a blackened appearance to the soil. The terrain is covered in knee-high indigenous vegetation.

Water from the oxidation dams flows down through a more substantial drainage system (Plate 3) across the property, and then under the R355 road via a small bridge (Figure 2). This drainage area is characterised by more dense vegetation.

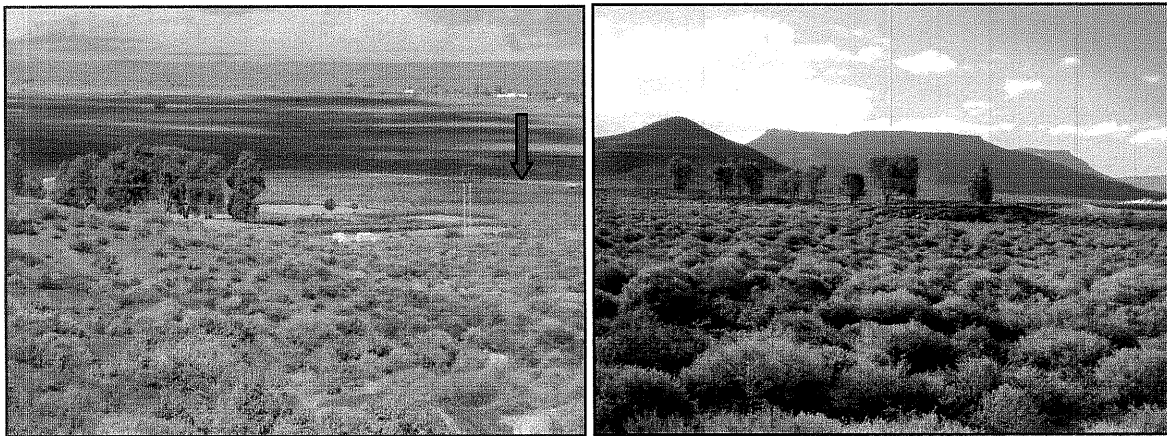


Plate 1: View from Jakkalskoppe looking south toward the oxidation dams, with the R355 visible in the mid-distance (red arrow). Plate 2: View from the R355 looking north towards the oxidation dams.

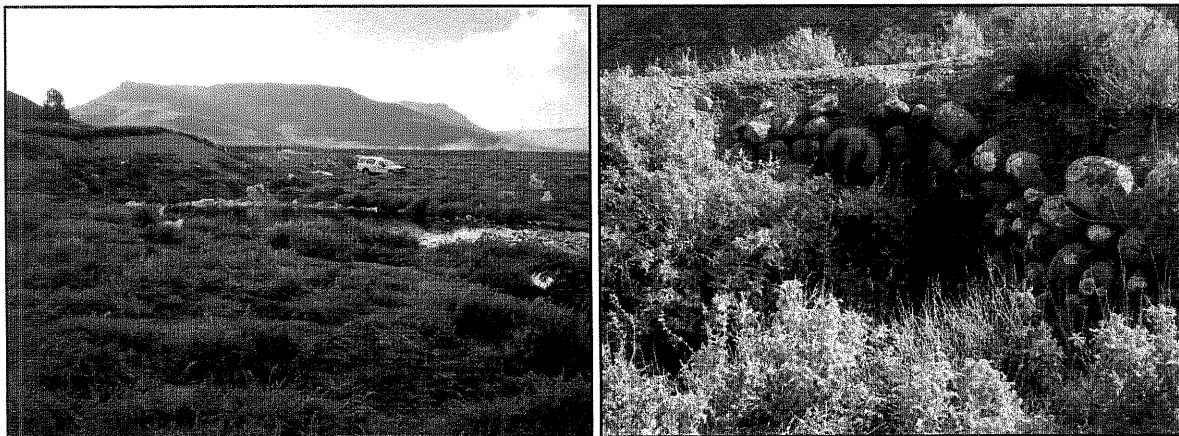


Plate 3: View of the drainage area running from the oxidation dam southward toward the R355.
Plate 4: A view of the stone lined fountain located in the hill behind the WWTW.

There is a fountain behind the sewage works in the lower slopes of the Jakkalskoppe. The fountain lies outside the development footprint (Figure 2) but is important in terms of possible traditional landscape use. According to Van Zyl Environmental Consultants cc the fountain lies in a small hollow, which fills up slowly after the fountain has been emptied. The sides of this fountain are lined with roughly packed stone walling (Plate 4).

In the past, water was collected from the fountain to wash the buckets used for the "bucket toilet system". There are no immediate plans to utilise the water from the fountain, but future use is not excluded. Apparently, people living in the adjoining areas do occasionally collect water from the fountain.

The co-ordinates for the fountain are:

S 31° 27' 51.81"	E 19° 44' 16.95"
------------------	------------------

6.1 Limitations

There were no limitations to the survey with the exception that the drainage area was very marshy and difficult to cross. Visibility was generally good.

7. RESULTS OF THE SURVEY

The survey was conducted on foot on the 30 July 2009 by Lita Webley and David Halkett. GPS readings were obtained on the WGS84 datum, and track ways were recorded. Digital photographs were also taken of the site. We were assisted by Abraham, a worker at the WWTW. We also met with Mr Riaan van Wyk of the Hantam Municipality who discussed the project with us.

Despite a careful survey of the area, no archaeological material (including stone artefacts, pottery, etc) was identified. There are a few scatters of very recent 20th century glass, tin and ceramics, confirming that the area has functioned as an informal rubbish dump. There are no structures or any evidence of previous burials.

8. DISCUSSION AND RECOMMENDATIONS

The property which has been identified for the upgrading and extension of the oxidation dams (like the adjoining property which has been identified for the new cemetery), does not contain any heritage resources which will be negatively impacted by the development.

Despite the location of a little fountain on the hillside, there are no archaeological remains, no evidence of any human settlement (including structures such as kraals), no graves, etc. It seems that this was not a suitable location for settlement in the past.

It is recommended that the development should be approved. If any human remains are uncovered, development in the immediate environment should cease and SAHRA should be informed.

9. REFERENCES

Hollman, J. 1993. Preliminary report on the Koebee rock paintings, Western Cape Province, South Africa. *South African Archaeological Bulletin* 48: 16-25.