

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT  
THE PROPOSED UPGRADING OF THE PATERNOSTER  
WASTE WATER TREATMENT WORKS (FARM 1074)  
PATERNOSTER  
VREDENBURG**

Prepared for

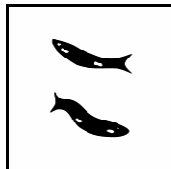
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## EXECUTIVE SUMMARY

EnviroAfrica, on behalf of Saldanha Bay Municipality requested that the Agency for Cultural Resource Management conduct a Phase 1 Archaeological Impact Assessment for the proposed upgrading of the Paternoster Waste Water Treatment Works (WWTW), in Paternoster, Vredenburg, on the Cape West coast.

In addition, a proposed ± 600 m long pipeline will extend from the existing WWTW, to discharge treated waste water into the Mosselbank Stream.

The existing Paternoster WWTW is situated directly alongside the gravel road to Stompneusbaai.

The following findings were made:

A thin scatter of weathered, marine shellfish was documented alongside the northern boundary fence inside the existing WWTW. A few stone tools and one small piece of pottery were also found. Small bits of shellfish is, also associated with dune mole rat dumps, suggesting that (possibly) some shell midden material may lie buried below the ground.

In the proposed and proposed alternative pipeline routes, relatively large numbers of small pieces of weathered marine shellfish were found scattered in a wide area immediately beyond the northern boundary fence of the WWTW. The surrounding fields have been ploughed over, however, and the material occurs in a disturbed context. Animal burrowing is extensive in these fields and some displaced shellfish was noted in the some of the deeper burrows. Apart from a few stone flakes, very few lithics were recorded.

The Phase 1 Archaeological Impact Assessment of the proposed upgrading of the Paternoster WWTW has identified potentially significant impacts to pre-colonial archaeological material.

Buried shell midden material may be exposed or uncovered during proposed upgrading of the WWTW, while buried shell midden material may also be exposed and uncovered during excavations for the proposed discharge pipeline.

Unmarked human burials may also be exposed or uncovered during earthworks and excavations.

The following recommendations are made:

- Bulk earthworks and excavations (for both the WWTW and the proposed pipeline) must be monitored by a professional archaeologist during the construction phase of the project. Should any important shell midden deposits be exposed or uncovered during earthmoving operations, some sampling, or excavations of archaeological deposits may be required.
- Should any unmarked human remains be disturbed, exposed or uncovered during earthworks, these should immediately be reported to the archaeologist, or the South African Heritage Resources Agency (Dr A. Jerardino 021 462 4502).

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## **1. INTRODUCTION**

EnviroAfrica, on behalf of Saldanha Bay Municipality requested that the Agency for Cultural Resource Management conduct a Phase 1 Archaeological Impact Assessment for the proposed upgrading of the Paternoster Waste Water Treatment Works (WWTW), in Paternoster, on the Cape West coast. The Paternoster WWTW is situated on municipal land on a section of Farm 1074 (Malmesbury) and is about 3.2 ha in extent.

The current population of Paternoster is about 5000 and this is expected to increase to about 7500 in 2031. The Saldanha Bay Municipality has decided to provide the town with a full waterborne sanitation system, with the sewerage treated in an Activated Sludge Wastewater Treatment Works.

The proposed upgrade will consist of the following:

- An inlet works with a screen, grit removal channels and a flow meter;
- An Activated Sludge Reactor;
- A Secondary Settling Tank;
- A Settling Pond;
- Disinfection Works, and
- Sludge Handling Ponds

The existing WWTW has a fenced off footprint of about 1.6 ha and all the proposed works will take place within this area.

In addition, a proposed  $\pm$  600 m long pipeline will extend from the existing WWTW, to discharge treated waste water into the Mosselbank Stream.

The extent of the proposed development ( $\pm$  1.6 ha footprint and a linear development exceeding more than 300 m in length) falls within the requirements for an archaeological impact assessment as required by Section 38 of the South African Heritage Resources Act (No. 25 of 1999).

The aim of the AIA is to locate and identify archaeological remains that occur on the site and that may be negatively impacted by planning and construction of the proposed development, and to propose measures to mitigate against the impact.

A Notification of Intent to Develop (NID) checklist has been completed by the archaeologist and submitted to Heritage Western Cape (Belcom) for comment.

## **2. TERMS OF REFERENCE**

The terms of reference for the study were:

- to determine whether there are likely to be any archaeological sites of significance within the existing WWTW site and the proposed pipeline route;
- to identify sites of archaeological significance within the WWTW site and the proposed pipeline route;
- to assess the sensitivity and conservation significance of archaeological sites potentially affected by the proposed development;

- to assess the 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 development area.

### 3. THE STUDY SITE

A locality map is illustrated in Figure 1. An aerial photograph of the study area and the proposed development is illustrated in Figure 2.

Paternoster is situated about 13 kms northwest of Vredenburg. The town is currently experiencing large-scale residential development, with several new large developments in the planning and construction stage. The existing Paternoster WWTW (on Farm 1074 Malmesbury) is situated directly alongside the gravel road to Stompneusbaai, inside the current urban edge, with the cemetery and sports to its west. Much of the WWTW site is already in a highly modified state (contained by a large elevated pond and smaller sludge drying ponds), but some relatively undisturbed areas occur alongside the fence line on its northern and eastern boundary. Dune mole rat activity and burrowing is quite extensive in these areas. A, man-made wetland system occurs in the south west. The site is mostly covered with Kikuyu grass (Figures 3-8).

The proposed (A) and proposed alternative (B and C) pipeline routes will be situated within old (disturbed) agricultural lands (Figures 9-13) and alongside the Paternoster-Stompneusbaai road (Figures 14 & 15), from where it will discharge into the Mosselbank Stream. Alternative C (alongside the Paternoster-Stompneusbaai Road) is the preferred pipeline route.

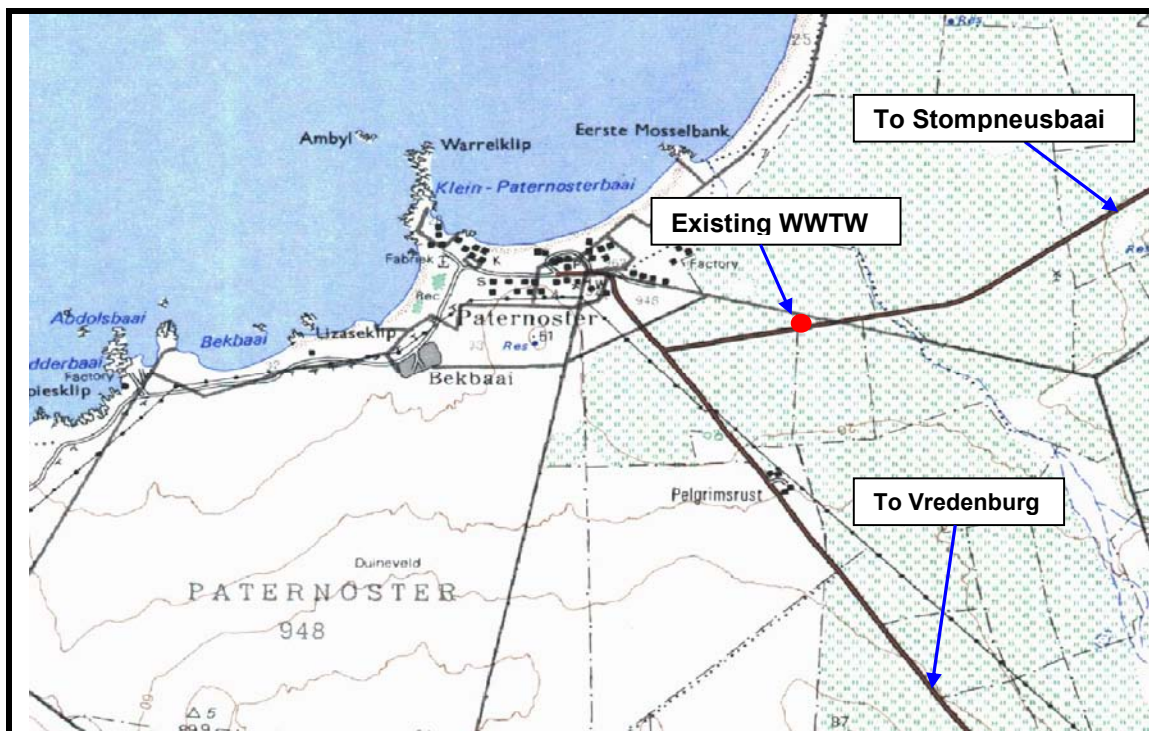


Figure 1. Locality map (3217 DB & DD Vredenburg)



**Figure 2. Aerial view of the study site and the proposed (A) and proposed alternative (B & C) pipelines**



**Figure 3. View of site facing south east**



**Figure 4. View of the site facing south east**



**Figure 5. View of the site facing north**



**Figure 8. View of pipeline route A facing north**



**Figure 6. View of the site facing west**



**Figure 9. View of pipeline route A facing north**



**Figure 7. View of the site facing south**



**Figure 10. View of pipeline route B facing north east**



**Figure 11. View of pipeline route B facing north east**



**Figure 13. View of pipeline route C facing north**



**Figure 12. View of pipeline route facing east**



**Figure 14. View of pipeline route C facing north**

## **4. STUDY APPROACH**

### **4.1 Method of survey**

The approach followed in the archaeological study entailed a detailed survey of the proposed development area within the existing WWTW. In addition, the alternative pipeline routes (A, B and C) were searched on foot.

The site visit and assessment took place on 22<sup>nd</sup> of December, 2008.

A desktop study was also undertaken.

### **4.2 Constraints and limitations**

There were no constraints or limitations associated with the archaeological study.



### **4.3 Identification of potential risks**

The following project actions may likely impact negatively on archaeological heritage remains.

- Bulk earthworks and excavations for the proposed upgrading of the WWTW and construction of the proposed pipeline, may expose or uncover buried shell midden deposits, as well as (possibly) unmarked human remains.

### **4.5 Results of the desk-top study**

Quite a few archaeological impact assessments have been undertaken in Paternoster in recent years, in direct response to an increase in large scale residential development in the area (Halkett & Hart 1992a,b; Halkett & Mutti 1998; Hart & Halkett 1995, 1998a,b; Kaplan 1993; 2002, 2003, 2004; 2008).

Many sites have been identified and recorded during the course of these surveys, a number of which have also been excavated and sampled (Hart & Halkett 1996; Halkett 1996; Kaplan 2005a, b; Nilssen 2006, 2007; Yates 1998, 2003, 2004a, b; M. Patrick 2008 pers. comm.).

Excavations and sampling of archaeological deposits in Paternoster appear to indicate that the majority of the sites date within the last 3000-4000 years and overlap the period both before and after the arrival of Khoekhoe pastoralists with domestic stock and pottery (Yates 2003).

Shovel testing on Portion 37 of the Farm Uitkomst 23 also revealed the presence of a Khoisan burial (Yates 2004a), while two more burials were also uncovered during monitoring of bulk services for a residential development at Uitkomst (Dr Peter Nilssen pers. comm.). And two skeletons have been recovered from recent excavations at 'Die Kom' behind the Paternoster Fish Market (Mary Patrick pers. comm. 2008), while the archaeologist knows of the remains of at least one more skeleton that has been covered over by the newly laid tar road leading down to the Fish Market.

## **5. LEGISLATIVE REQUIREMENTS**

The following section provides a brief overview of the relevant legislation with regard to the archaeology of the proposed site.

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

The National Heritage Resources (NHR) Act requires that 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 000m<sup>2</sup>, or the rezoning or change of land use of a site exceeding 10 000 m<sup>2</sup>, requires an archaeological impact assessment in terms of the National Heritage Resources Act (No. 25 of 1999).

The relevant sections of the Act are briefly outlined below.

### 5.1 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 the South African Heritage Resources Agency (SAHRA), or Heritage Western Cape.

### 5.2 Archaeology (Section 35 (4))

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

### 5.3 Burial grounds and graves (Section 36 (3))

Section 36 (3) of the NHR Act 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 The existing WWTW

A thin scatter of small fragments of weathered marine shellfish was documented in the relatively undisturbed lands alongside (i.e. Inside) the northern boundary fence of the WWTW (Figures 15 and 16). The shellfish comprises mainly small pieces of Black Mussel (*Choromytilus meridionalis*) and Limpets (*Cymbula oculus* and *Scutellastra argenvillei*), including one or two whole *S. argenvillei*. Small bits of shellfish is, also associated with dune mole rat dumps, suggesting that (possibly) some shell midden material may lie buried below the ground. One large silcrete utilized flake, one large (flaked) chunk of silcrete, one indurated shale flake and one broken quartz flake was also found, as well as a very small piece of undecorated grit tempered pottery. A GPS co-ordinate for the site is 32° 48 42.2 E 17° 54 15.3, on map datum wgs 84.



Figure 15. Shell scatters in the north western corner of the WWTW site



Figure 16. Dispersed shellfish occurs alongside the northern boundary of the WWTW

## 6.2 The proposed and proposed alternative pipelines

### 6.2.1 Alternative A and B

Relatively large numbers of small pieces of weathered marine shellfish are randomly scattered in a fairly wide area just beyond the northern boundary fence of the WWTW (refer to Figure 2 & Figures 17 & 18). The surrounding fields have been ploughed over and the material occurs in a highly disturbed context. A few farm tracks intersect the fields. Animal burrowing is extensive and some displaced shellfish was noted in the some of the deeper burrows. The surface shellfish is dominated by *S. argenvillei* with some Black Mussel and a few small whelks also occurring. A few whole *S. argenvillei* was also noted. Very few lithics were recorded, but one silcrete flake, one quartz chunk and one small shale chunk was found. The shellfish scatter is quite contained and does not extend more than 30-40 m north of the fence line, where it disappears altogether. A GPS co-ordinate for the site is S 32° 48 41.2 E 17° 54 15.7 on map datum wgs 84.



Figure 17. Alternative A. View facing north



Figure 18. Alternative B. View facing north

### 6.2. Alternative C

Alternative C is the preferred pipeline route and runs mainly alongside the Paternoster-Stompneusbaai Road (refer to Figure 2). A few fragments of weathered marine shellfish (mainly *S. argenvillei*) were documented alongside the WWTW fence line. One indurated shale flake was also found. This area has been heavily trampled by cattle (Figures 19-21).



Figure 19. Alternative C. View facing east



**Figure 20. Alternative C. View facing north**



**Figure 21. Alternative C. View facing north**

## **7. IMPACT STATEMENT**

The Phase 1 Archaeological Impact Assessment of the proposed upgrading of the Paternoster WWTW has identified potentially significant impacts to pre-colonial archaeological material.

Buried shell midden deposits may be exposed or uncovered during upgrading of the WWTW, while buried shell midden material may also be exposed or uncovered during excavations for the proposed discharge pipeline.

Unmarked human burials may also be exposed or uncovered during earthworks and excavations.

## **8. RECOMMENDATIONS**

With regard to the proposed upgrading of the existing Paternoster Waste Water Treatment Works in Paternoster, the following recommendations are made:

- Bulk earthworks and excavations (for both the WWTW and the proposed pipeline) must be monitored by a professional archaeologist during the construction phase of the project. Should any important shell midden deposits be exposed or uncovered during earthmoving operations, some sampling, or excavations of archaeological deposits may be required.
- Should any unmarked human remains be disturbed, exposed or uncovered during earthworks, these should immediately be reported to the archaeologist, or the South African Heritage Resources Agency (Dr A. Jerardino 021 462 4502).

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