



Final Decision

In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999) and the KwaZulu-Natal Heritage Act (Act 4 of 2008)

Attention: Umgeni Water

The capacity of the Darvill Wastewater Works currently comprises 65ML/d. The increase in the hydraulic load, and associated organic load, has put a strain on the capacity of the plant to treat and effectively remove nutrients. Furthermore, the plant's discharge limit for NH₃ has been decreased to 6mg/l. As a result of the above, the plant is currently unable to meet required discharge standards, and needs to be upgraded. Changes to the Head of Works, the biological process, sludge digestion, and disposal and tertiary treatment would allow the plant to treat a further 35ML/d (resulting in a total capacity of 100ML/d). The capacity of the plant will therefore increase by 35%. The potential further upgrade 120 MLD in 2023 should be considered. Umgeni Water (UW) concurrently proposes the installation of an electricity cogeneration plant, which will generate power from the gas from the two anaerobic digesters currently on site. Currently, 25 000 kg/day of sludge is fed into the digesters, with methane-rich gas emitted during the digestion process. This methane-rich gas will be used to generate electricity (for the Darvill Wastewater Works) through a process referred to as co-generation, yielding 800-1000 kW of electricity per day. Details of the upgrades, which are relevant to the authorisation requirements, are as follows: Primary treatment (i) An additional 40m diameter primary settling tank with a surface area of 1 250m² is likely. (ii) The construction of a new aerobic reactor (nominally 100 m x 60 m x 7 m deep) – 42 megalitres. (iii) Conversion of the existing aerobic reactor to an anaerobic / anoxic reactor. (iv) Construction of a blower house to provide air supply for a fine bubble diffused air aeration system. Secondary Treatment (i) Two additional 35 m diameter secondary settling tanks complete. Tertiary Treatment (i) Extension of the chlorine tank - the manner of extending the gas chlorination system has not been finalised. Sludge Handling and Disposal (i) The installation of an electricity co-generation process (Combined Heat and Power – CHP). The source of the biofuel for the process will be the methane-rich digester gas from the anaerobic digesters at Darvill Wastewater Works. With the installation of the CHP process, all of the methane-rich gas will be used to generate electricity (1 MW). (ii) Sludge generation will increase and the current forms of disposal may be insufficient and require revision. A study was conducted with the aim of finding an effective option for sludge disposal. After all possible options had been assessed, composting was chosen as a feasible option for sludge end use - the remaining sludge will be composted and disposed of for agricultural use. The above provides sufficient information on which to conduct the EIA and determine legislative requirements in terms of the Waste Management Licence and the EIA requirements. Regarding the water use licences, the current water use license issued for the plant restricts the discharge to a maximum of 32 million cubic meters of water containing waste per annum and this is based on an average dry weather flow of 75ML/day. Once the plant is upgraded, it is anticipated that the sludge generated will exceed this limit and therefore a revision or new licence application will be required. Location: The Darvill Wastewater treatment Works is located off New England Road, within the



**PROPOSED DARVILL WASTEWATER TREATMENT WORKS UPGRADE,
MSUNDUZI LOCAL MUNICIPALITY**

Our Ref: SAH13/69



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CaseID: 2928

Date: Friday July 19, 2013

Page No: 2

Msunduzi Local Municipality. The WWTW is located on Portion 5 of ERF 1853.

We acknowledge receipt of your invitation for comment with regards to the proposed development. The object of Amafa is to administer, conserve and protect heritage resources of the Province within the terms of KZN Heritage Act no. 4 (2008) and the National Heritage Resources Act No 25 of 1999. While the survey by Frans Prins did not yield any heritage resources due to vegetation density, we recommend that the area be resurveyed by a Heritage Practitioner during vegetation clearance to rule out presence of surface finds.

In terms of the KwaZulu Natal Heritage Act No. 4 of 2008 and the National Heritage Resources Act No.25 of 1999 (Section 38 (1), in view of the findings outlined in the HIA Report by Frans Prins of Active Heritage that we received for the above proposed development, we have no objection to the proposed development within limits of the prescribed mitigation measures and recommendations.

You are also required to adhere to the below-mentioned conditions:

Conditions:

1. The HIA Practitioner is required to monitor vegetation clearance before commencement of the construction activities.
2. The developer and HIA Practitioner should furnish Amafa with a report on the survey
3. The report should include appropriate management procedures should heritage resources be noted.
4. Amafa should be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.
5. No structures older than sixty years or parts thereof are allowed to be demolished altered or extended without a permit from Amafa.
6. No activities are allowed within 50m of a site, which contains rock art.
7. Amafa should be contacted if any graves are identified during construction and the following procedure is to be followed:
 - stop construction
 - report finding to local police station
 - report to Amafa to investigate.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully



**Amafa AkwaZulu-Natal
Heritage KwaZulu-Natal
Erfenis KwaZulu-Natal**

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Page No: 3

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Senior Heritage Officer
Amafa/Heritage KwaZulu Natal

Annie van de Venter Radford
Deputy Director: Research, Professional Services and Compliance
Amafa/Heritage KwaZulu Natal

ADMIN:

Direct URL to case: <http://www.sahra.org.za/node/124526>
(, Ref: DEA Ref: 14/12/16/3/3/3/84)

Terms & Conditions:

1. This approval does not exonerate the applicant from obtaining local authority approval or any other necessary approval for proposed work.
2. If any heritage resources, including graves or human remains, are encountered they must be reported to Amafa immediately.
3. Amafa reserves the right to request additional information as required.



**Amafa AkwaZulu-Natali
Heritage KwaZulu-Natal
Erfenis KwaZulu-Natal**

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