

# Discharge of water containing waste emanating from land to the marine environment: A water quality management perspective

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## Abstract

The National Water Act, 1998 (Act 36 of 1998) mandates the Department of Water Affairs and Forestry to manage all water containing waste (wastewater), which emanates from land-based sources and which directly impact on the marine environment. These sources include sea outfalls, storm water drains, canals, rivers and diffuse sources of pollution. To date there are many places where wastewater is being discharged into the sea. More than forty sea outfalls are formalised through authorisations issued in terms of the old Water Act, 1956 (Act 54 of 1956) and the National Water Act, 1998 (Act 36 of 1998). In order to protect water quality, effluent standards were applied under the old Water Act to discharges into the water resource. However, the National Water Act, 1998 follows a receiving water quality objectives approach recognising differences in the assimilative capacity of different resources. Both approaches have the same main objective namely to maintain the resource at a quality fit for use by other users. The same principle applies to discharges to the marine environment. In addition, South Africa, as a signatory to a number of international Conventions and treaties such as the London Convention, is committed to certain requirements pertaining to the disposal of waste at sea. To meet such requirements, a very clear policy on what could be allowed for discharge to sea is required for South Africa. Such a policy should be very clear on what is allowed, why it is allowed and the conditions that apply for such discharges in order for this country to retain international credibility.

In this paper the authors provide a concise discussion on:

- The development of an operational policy providing the strategic view on marine disposal, as well as the goal, basic principles, ground rules and management framework that will be applied to the discharge of land-derived wastewater to the marine environment; and
- Overview of procedures to guide authorities and managers in terms of the administrative and institutional responsibilities in dealing with land-derived wastewater discharges to the marine environment of South Africa.

## Background

A wide variety of pollutants and waste, both from point and non-point sources enter marine ecosystems, largely through the medium of water. This has adverse effects on coastal ecosystems and possibly human health. Coastal activities should be planned and managed to ensure that pollution and waste do not compromise opportunities for sustainable coastal development (DEAT, 2000a). The growing demand on the utilisation of our water resources requires that the Department of Water Affairs and Forestry (DWAF) reconsiders their management of the disposal of wastewater in coastal areas, especially in light of international trends and requirements.

The DWAF as public trustee of the water resources in South Africa must ensure that water is protected, used, developed, conserved managed and controlled in a sustainable and equitable manner. In order to protect water resource quality, strict measures such as standards and Resource Quality Objectives are applied to discharges into the water resource, the main objective being to maintain the resource at a quality that is fit for use by other users. The same principle applies to discharges in coastal areas, especially

since coastal areas are at the bottom end of catchments and directly impacts on the quality of marine resources.

Discharge of wastewater to the sea is an additional disposal option in coastal areas, on condition that the marine environment will remain fit for use by its other users. Discharges of wastewater to the water resource in inland areas have to meet certain standards in order to meet predetermined resource quality objectives set for the receiving resource. Resource Quality Objectives (RQOs) are management objectives that are set taking into account the quality requirements of the reserve as well as other users. Meeting the set RQOs will thus ensure that the resource remains fit for use by its other users. Along the same lines, when wastewater is discharged into the sea, the sea must remain fit for use by its other users; therefore discharges should be of such quality that the guideline values as contained in the Water Quality Guidelines for Coastal Marine Waters (DWAF, 1995) will be met outside the predetermined mixing zone of the discharge. The Water Quality Guidelines for Coastal Marine Waters are being used to assist in setting site-specific water quality objectives for the marine environment. However, the setting of objectives for marine water quality is outside the mandate of the DWAF.

## International conventions (e.g. London Convention)

South Africa is a signatory to the London Convention (International Maritime Organisation, 1972) and the 1996 Protocol thereto.

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This paper was originally presented at the 2004 Water Institute of South Africa (WISA) Biennial Conference, Cape Town, South Africa, 2-6 May 2004.

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