



REPUBLIC OF SOUTH AFRICA

## 1.1.1 Durban Water Recycling

### 1.1.1.1 Introduction AND Background

Durban treats in the region of 450 million litres of wastewater daily and in this context, the Council's eThekweni Water Services (EWS) commenced an investigation into the recycling of treated wastewater. In 1993 EWS developed a reclamation process for the production of high quality reclaimed water and tested it at laboratory and pilot scales in 1994 and 1995. It was envisaged that Mondi Paper, situated in the southern part of Durban adjacent the Southern Wastewater Treatment Works (SWTW), who had previously approached EWS, would be the major customer for the reclaimed water.

Despite the proven technical success of treating the wastewater, the economic feasibility was in doubt. EWS then approached the Rand Merchant Bank in 1997 to assess the project. RMB produced a report which indicated that, provided certain guarantees were obtained, the project was economically feasible. The costs, technical complexity and the risks associated with the project lead EWS to recommend to the Council that it would be in the Council's best interests to consider a Public Private Partnership (PPP).

In 1999, after a formal tender process, Durban Water Recycling (Pty) Ltd was awarded a 20-year concession contract for the production of high quality reclaimed water. Construction commenced in 2000 and was completed in 14 months. The R74m construction phase included upgrading the activated sludge process from 50 to 77 ml per day, the construction of the tertiary plant, tying in with pre-existing and decommissioned assets, refurbishment of the SWTW high-level storage tank and the installation of the reclaimed water reticulation system.

### 1.1.1.2 Project Area

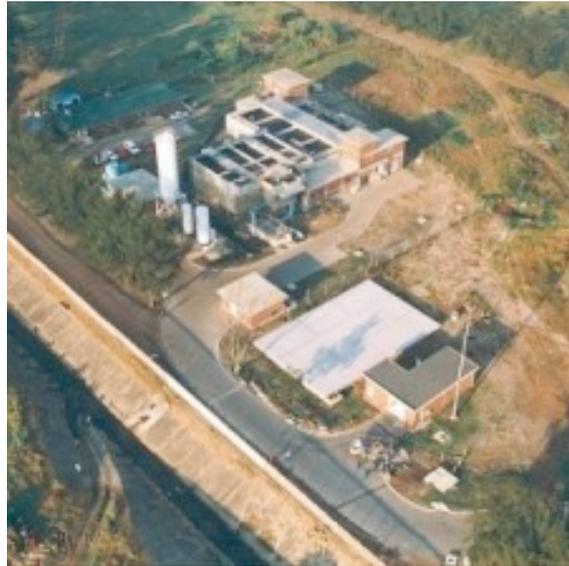
Located in the south of Durban in the grounds of Southern WWTW (Figure 6.14), the plant was commissioned in May 2001. Officially opened by the Minister of Water Affairs and Forestry, Ronnie Kasrils, the R74m sewage-to-clean-water recycling plant treats 47.5 million litres of domestic and industrial wastewater to a near potable standard for sale to industrial customers for direct use in their processes. Understandably the saving of treated potable water is of great benefit to Durban.

### 1.1.1.3 Technology

Veolia has installed a highly specialised water treatment process, specifically tailored to meet the exacting water quality requirements of DWR's main client, Mondi Paper. Mondi Paper uses the recycled water directly for the production of fine paper which is extremely sensitive to process water quality and its impact on water brightness. The recycled water specification includes 22 parameters that are measured in the South African water standard (SABS 241:1999). The production of potable quality recycled water to a guaranteed standard continuously and reliably, from domestic and industrial wastewater, is a showcase for water process technology and process engineering.



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*Figure 1: Aerial view of the Durban Water Recycling plant*

#### *1.1.1.4 Implementation Plan*

The concession contract will expire in 2019. A PPP process will have to be followed to enter into a new concession contract by 2020.

#### *1.1.1.5 Budget*

No budget allocated.

#### *1.1.1.6 Challenges*

- To re-evaluate the contract after the contract has expired.
- EWS providing effluent to the tertiary plant at specific limits.