



REPUBLIC OF SOUTH AFRICA

Ilembe DM Siza Sembcorp Waste Water Recycling Project in Ballito

Background

During the peak of the drought late in September 2014, Ilembe was made aware of the critical levels of Dams within KwaZulu-Natal Umgeni System and the effects of El Niño in the Hazelmere Dam which supplies the Southern part of the Ilembe District including Tongaat, Ballito, Verulam and Ndwedwe.

The Water Service Provider Siza Sembcorp contracted to Ilembe DM had to consider several options of ensuring supply for domestic, commercial and industrial use in the supply area which included;

- Ground Water Development (Borehole siting, drilling, testing and equipping);
- Water Karting (Supply using water tankers);
- Desalination of Sea Water; and
- Waste Water Recycling.

Siza Sembcorp explored all the above options and the waste water recycling was found to be sustainable and most cost effective hence it was the preferred option for further development. The success of the project depended on the effective communication strategy and public participation process adopted by Ilembe District and Siza Sembcorp. The project was implemented between 2014 and the complete plant capable of recycling 3 Mℓ per day of treated effluent was commissioned in August 2016.

Location of the Project

The project is located at the Ilembe DM Frasers Waste Water Treatment Works located in Ballito to the east of the N2 Freeway and south of the Ballito offramp.

High level Brief Project Description

The plant was developed in two phases, between July 2015 and August 2016. Phase 1 consisted of the upgrade of the Frasers WWTW to include sand filters, storage reservoir and associated pipework for linking the recycling plant into the water network bulk and reticulation infrastructure.





REPUBLIC OF SOUTH AFRICA

Phase 1

The first phase consisted of adjusting the waste water treatment to achieve the required effluent standards, installation of ultra-filters and recycled water storage reservoir. The recycling plant was commissioned in November 2015 and several tests were conducted up to December 2015. Sembcorp then started injecting recycled water into the (water) bulk storage and reticulation network after an intensive public participation process and conclusion of water quality compliance testing. This phase took four weeks to complete.

Phase 2

The recycling plant was further upgraded, after consulting the community, from producing 1 Ml to 3 Ml per day. The second phase, consists of reverse osmosis (RO) filters, a “raw water steel tank” and associated civil works, was commissioned in August 2016.

Most of the electrical and mechanical work was carried by Sembcorp internal staff, which minimised the costs significantly. The lead time on delivery of the reverse osmosis filters was approximately 4 months. It took 12 weeks to complete Phase 2.

The total cost of implementing Phase 1 and 2 of the project came to **R 13 656 259.00**.

