

CITY OF CAPE TOWN, SOUTH AFRICA

SEAWATER DESALINATION PLANT



Seawater desalination plant at Monwabisi assists the City of Cape Town in its drought emergency response plan

THE CHALLENGE

In response to one of the worst droughts that the region has faced in over a century, the Municipality of Cape Town urgently required an alternative feedstock for the production of potable water to its citizens. Given the city's proximity to the Atlantic and Indian Oceans seawater desalination technology was selected. Speed of plant delivery was crucial.

OUR SOLUTION

PROXA, in joint venture with Water Solutions SA, designed and installed a 7.5 MLD seawater desalination plant. The scope of work included the marine intake, onshore process plant, product injection and brine return.

HOW PROXA ADDED VALUE

Speed of delivery was critical in this project, and our ability to deliver units from an existing fleet of rental units, coupled with our access to global procurement, made it possible to meet the fast-track deadlines. Our innovation in design and construction ensured rapid installation, which reduced site work and project programme needs. The plant was built in a modular format to enable future expansion.

The provision of off-balance sheet financing for the desalination plant over a contractual period of 24-months, with revenue collected from the supply of water into the city's grid, helped the city in meeting its emergency needs.

Given the shallow intake in Table Bay, robust pretreatment was implemented using advanced filtration cleaning systems to protect the membranes and ensure plant availability.

FEED WATER

Seawater from an open intake

PRODUCT WATER

Potable water compliant to SANS 241 injected directly into the city's reticulation network.

PERFORMANCE TARGET

7.5 MLD potable water

PROCESS

- Open water abstraction
- Screening
- Coagulation
- Advanced Media Filtration (MF)
- SWRO
- Disinfection
- Remineralisation

PROCESS RELIABILITY

The plant was designed, built, operated and maintained by a highly experienced team supported by PROXA's local technical center. Full standby equipment was included to safeguard production against potential breakdowns and planned maintenance interruptions.

ENVIRONMENTAL PROTECTION AND COMMUNITY INVOLVEMENT

PROXA and Water Solutions SA, together with the city, collaborated with the local community to promote job creation during the project construction phase. Once the 24-month contractual period is concluded, the plant will be demobilised and the area will be rehabilitated. The building used to house the plant was erected with the view of using it as a community hall.

The inclusion of an environmental officer from the onset of the project ensured minimal impact on the environment during construction.

Client: City of Cape Town