# CASE HISTORY

## Palm Water, Jumeirah Dubai

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<th>End User</th>
<th>Palm Water (Now DEWA)</th>
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<td>Process</td>
<td>Ultrafiltration, Reverse Osmosis and Remineralisation</td>
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<td>Application</td>
<td>Production of Potable Water from Seawater</td>
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### Introduction
The contract was for the design, construction, operation and maintenance of two 32 MLD seawater desalination plants to provide high quality drinking water to residential, hotel and apartment complexes on the crescent of the prestigious “Palm Jumeirah” – the first of the palm shaped developments off the coast of Dubai.
Description
The two plants are about 4km apart and each comprises the following processes:

- Self contained intake system providing 10mm filtration of the seawater
- Seawater lift pumps
- Self contained, self-backwashing 200 micron strainers
- 12 individual trains of ultrafiltration, each skid mounted with dedicated inlet, outlet and backwash valves and manifold pipework
- Ultrafiltration backwashing system
- Storage and dosing systems for ferric chloride, chlorine dioxide, sulphuric acid, antiscalant, sodium hypochlorite, sodium hydroxide and sodium bisulphite
- Two filtered 16,000m³ water storage tanks

Each SWRO train comprises the following components:

- A Filtered water feed pump working in conjunction with an RO feed pump
- An Energy Recovery System
- An RO membrane array consisting of 140 RO pressure vessels
- First Pass Permeate Tank
- Three Second Pass Low Pressure Reverse Osmosis Trains, each comprises the following Components:
  - A 2nd pass RO feed pump
  - A 2nd pass RO membrane array consisting of 40 RO pressure vessels arranged in two stages
- RO membrane cleaning facility, comprising the following main components:
  - Chemical Makeup and Recirculation Tank
  - Recirculation Pump,
  - 10 micron Guard filter
- Chlorine Dioxide Generation System
- Chlorine contact tank
- Remineralisation System, comprising the following main components:
  - Feed pumps
  - Limestone storage system
  - Limestone transfer system
  - 3 Remineralisation vessels
- Final water storage tank and network distribution feed pumps

OPERATION:
From May 2008 the first of the two plants was operated and maintained by ACWA.

Despite the seawater quality being consistently out of specification the product water has always complied with all the necessary standards.