



## AQUA TREATMENT TECHNOLOGIES INC.

Treatment of greenhouse irrigation leachate water  
at RosaFlora Greenhouses, Dunnville, Ont.

Wastewater type:	Greenhouse irrigation leachate water
Design flow:	400,000 L/day
Pre-treatment:	Pond
Discharge:	Zero discharge, water re-used for irrigation

### RosaFlora Greenhouses, Dunnville, Ontario, Canada

The 'AQUA Wetland System' (AWS) by AQUA Treatment Technologies Inc. can be designed to treat almost any flow volume of wastewater. Our largest AWS is designed to treat 400,000 L/day of greenhouse irrigation leachate water from RosaFlora Greenhouses in Dunnville, Ontario, Canada. In addition, the modular design of the AWS allows for incremental construction as the flows from a facility increase. For instance the RosaFlora AWS began as a six cell system treating ~ 300,000 L/day. As the greenhouse complex expanded three more cells were added, increasing the daily treatment capacity of the AWS to ~ 400,000 L/day.

#### Treatment approach

The 'AQUA Wetland System' consists of sand & gravel beds or cells planted with moisture tolerant plant species. The system at RosaFlora consists of nine cells, each cell measures 60' X 60' X 4' in depth. The cells are arranged in 3 series with 3 cells in each series. Irrigation leachate water, collected from the greenhouse under drain system, is pumped into a 100' X 100' X 12' deep flow balancing pond. Water from this pond is applied to the first cell in each series by means of a submersible pump controlled by an electronic timer. Water is pumped vertically from cell to cell. There is no open or standing water. Treatment occurs through physical filtration and biological degradation in the sand media while plants shade and insulate the cells, cycle nutrients and prevent algae growth on the cell surface. The treated water is re-used to irrigate crops.

#### 100' x 100' flow balancing pond



excavation for 6 cells.....



new system flooding.....



after four years.....

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