

Sundrop Wastewater Treatment Plant

Anaerobic Baffled Reactor & Vertical Flow Wetland



Vertical Flow Wetland with partial regrowth

Sundrop Farms is a global leader in sustainable agriculture who grow fresh fruit and vegetables using renewable inputs. In 2010, Sundrop Farms opened their first facility in a remote area near Port Augusta, South Australia. The facility uses desalinated water to produce tomatoes for Coles Supermarkets nationwide.

PROJECT SUMMARY

The Water and Carbon Group was awarded the design and construct contract to build a new wastewater treatment facility for the Sundrop horticultural site. The facility was required to treat the wastewater produced from 200+ site personnel and a 2.2kL flow from irrigation backwash. The system was designed to meet Sundrop sustainability requirements along with all local and state regulatory requirements.

2.2kL

flow from irrigation backwash required to be treated.

200+

person sewerage effluent system required to be constructed.

10 months

from conception to completion.



Earthwork construction of basin



Irrigation pipework installation



Installation of influent storage tanks



Constructed system showing partial regrowth

BACKGROUND

In 2014 Sundrop received approval to expand their glasshouse operations in Port Augusta, but had stringent requirements imposed regarding the treatment of their wastewater streams. Treating water in this area is challenging due to the level of remoteness and the sensitive environment that surrounds it. The Water and Carbon Group were engaged to design and build a sustainable treatment facility to undertake this treatment process.

SOLUTION

The entire works package entailed the design and construction of a robust treatment environment to remove suspended solids, break down organics, and partially nitrify the effluent. The Water and Carbon Group designed a treatment solution comprising of an Anaerobic Baffled Reactor followed by an Aerobic Vertical Flow Wetland to treat these streams. Key Outcomes defined by the client included: low maintenance costs, very-low operator input and low power consumption.

The treatment plant was designed to handle sewerage effluent produced from up to 200 staff, grey water and the wastewater from the glasshouse tomato production along with chiller wastewater. From conception to commissioning the system took 10 months to complete, involving a Water and Carbon Group team of ten specialists. When possible local contractors and suppliers were used to undertake site works.

OUTCOMES

The Sundrop WWTP is an excellent example of when a sustainable low energy treatment process can be utilised in a remote environment to exceed client expectations and satisfy government regulations. As requested in the design brief, operator involvement time is very low and the overall treatment operational costs have been kept to a minimum (no ongoing chemicals, aeration, pumping etc.), providing for a very satisfied customer.