

CASE STUDY

PROJECT	BEENYUP AWRP (STAGE 1)
PRODUCT	UV Disinfection
INDUSTRY	Municipal
LOCATION	WA



BACKGROUND

In 2014 the Western Australia State Government approved the construction of the 14 GL/year Beenyup Advanced Water Recycling Plant (AWRP) after successful completion of a 3-year Beenyup Groundwater Replenishment Trial. This Groundwater Replenishment Scheme provides a new climate-independent water source to boost drinking water supplies in Perth.

Stage 1 of the Beenyup AWRP was commissioned in 2016. Secondary treated wastewater from the Beenyup Wastewater Treatment Plant is pumped to the AWRP for further treatment. Water entering the AWRP is treated by passing through three barriers namely ultra-filtration, reverse osmosis and ultraviolet (UV) disinfection, after which it is as pure as drinking water, and it is injected into groundwater for storage.

Sentinel UV reactors supplied by Calgon Carbon UV Technologies, were selected for the project.

SOLUTION

DESIGN FEATURES

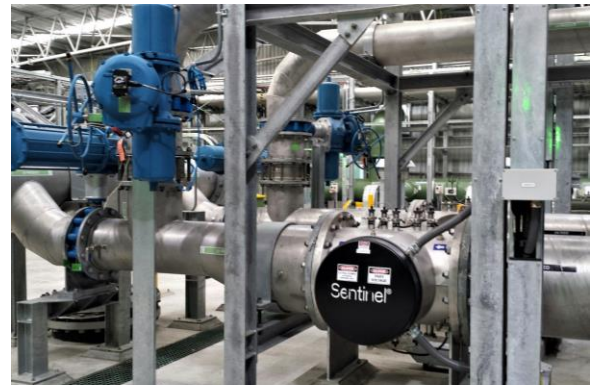
- UV system consists of two *Sentinel* UV reactors operating in parallel, each treating 50% of flow.
- Two 24" *Sentinel* 9x10 UV reactors are installed each fitted with 9x 10 kW medium pressure lamps.

DESIGN SPECIFICATIONS INCLUDE

- Design flow of 50.2 ML/d
- Minimum design UV Transmittance of 94%
- Design disinfection target is 4-log virus inactivation

BENEFITS

- **Proven Performance.** With over 25,000 kW of medium pressure UV lamp system installed for treating a broad spectrum of municipal drinking water, municipal recycled effluent, industrial wastewater, process water, and contaminated groundwater, Calgon Carbon UV Technologies has proven its capability to meet the most demanding performance requirements.
- **Reliability.** Field experience with an extensive installed base of treatment systems has shown that Calgon Carbon UV Technologies is an industry leader in terms of performance and reliability.
- **Compliance.** All *Sentinel* UV reactors are validated in accordance with USEPA UV Disinfection Guidance Manual (November 2006).



Beenyup AWRP Stage 1 UV system installation



One of the two Calgon Carbon UV Technologies 24" Sentinel 9x10 UV reactors installed at Beenyup AWRP Stage 1