

# Delivering critical drinking water services to regional communities



TRILITY, in its role within Riverland Water, was responsible for the financing of the project as well as the Design and Construction (D&C) of ten Water Treatment Plants (WTPs) as part of SA Water's rural South Australian water filtration project. The ongoing Operations and Maintenance (O&M) of these plants is also carried out by TRILITY.



# The Riverland Water Project delivers drinking water to approximately 150,000 people living in more than 90 communities located mainly along the banks of the River Murray in South Australia.

TRILITY Designed, Built, Financed, Operates and Maintains the Riverland Water Project. The project's source water is generally cloudy or turbid due to its 3,700km journey through the Murray-Darling river system where it picks up impurities in the form of very fine suspended clay particles, along with organic matter. All ten plants use an identical process but vary in size from 4 ML/d to 90 ML/d.

The raw water generally sourced from the River Murray, is pumped into Powdered Activated Carbon contact tanks and then flows via head pressure to the rapid mixing tanks where a coagulant is added to begin the physical and chemical processes of coagulation and flocculation. A flocculent aid is added to the coagulated water before it passes on to a second series of more gentle mixing tanks where the larger particles or 'flocs' fully form.

The water then passes on to the clarification stage where most of the 'flocs' settle to the bottom of the tank in the form of a sludge which is then removed and stored in nearby sludge lagoons. After drying, the sludge can be used for a variety of purposes (for example, landfill, soil conditioning and brick making).

After clarification, the water passes on to the filtration stage where sodium hydroxide (or hydrated lime) is added to adjust the pH of the water. Rapid gravity filters remove the remaining ten per cent of the flocculated particles by sifting the water through beds of sand and filter coal.

The filtered water is then disinfected with ultraviolet light followed by chlorine or both chlorine and ammonia, and fluoride is added for dental health. After a short period in a clear water storage tank, the water is pumped into local distribution networks.



Plant location	Capacity	Population served
Barmera	5 ML/d	2,500
Berri	8 ML/d	4,000
Loxton	14.5 ML/d	6,500
Mannum	4.1 ML/d	2,500
Murray Bridge	38 ML/d	15,000

Plant location	Capacity	Population served
Renmark	9 ML/d	4,500
Summit Storage	71 ML/d	40,000
Swan Reach	90 ML/d	70,000
Tailem Bend	28 ML/d	10,000
Waikerie	4 ML/d	2,000

## Who

SA Water is a water utility wholly owned by the South Australian government. It delivers water and wastewater services to approximately 1.5 million people across South Australia and has more than 1,500 employees.

## What

Ten advanced water treatment plants providing treated water to the Adelaide Hills, Barossa Valley, and mid northland River Murray towns.

## Where

Located mainly along the banks of the River Murray, stretching from Tailem Bend (approximately 95km south-east of Adelaide), to Renmark (approximately 250km north-east of Adelaide).

## Why

The South Australian State Government recognised the need to provide safe and reliable drinking water to rural communities and embarked on the establishment of their water filtration project. Their vision was to provide a service which bettered the World Health Organisation standards.

## Snapshot

<b>Client</b>	SA Water
<b>Type of Contract</b>	Design, Build, Finance, Operate and Maintain (DBFOM)
<b>Facilities</b>	Ten advanced water treatment plants
<b>Technology</b>	Sedimentation and filtration
<b>Design Capacity</b>	272 ML/d (combined)
<b>Term</b>	25 years
<b>Capital Cost</b>	c. \$115m



### For further information

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