

## Aldinga Wastewater Storage and Recovery Scheme

### Frequently Asked Questions

#### What is an aquifer?

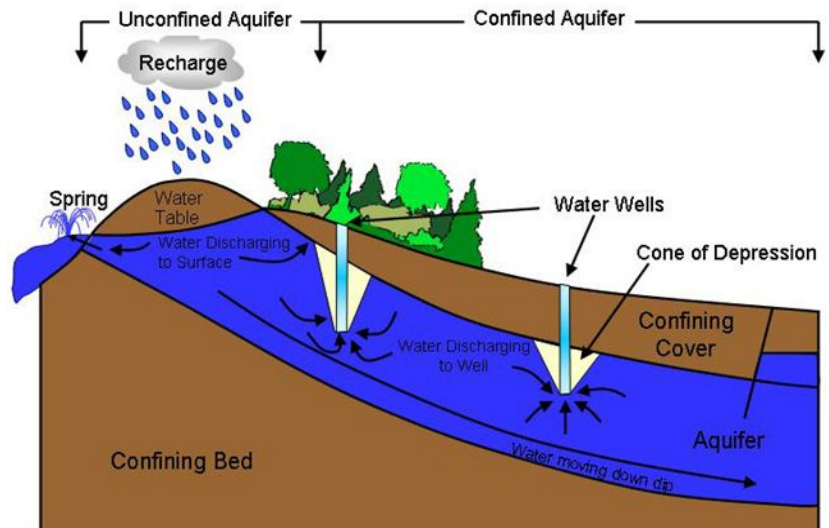
Groundwater is stored in the open spaces and in soil, sand, and rock that occur beneath the land surface. Aquifers are the geologic layers that are filled with water from which groundwater can be usefully extracted.

#### What is recycled water and where does it come from?

Recycled water is water derived from wastewater systems and treated to a standard satisfactory for its intended use.

The wastewater is treated via filtration processes, natural biological activity and disinfection and can be used for purposes such as irrigation, domestic toilet flushing and garden watering.

The treated wastewater (referred to as recycled water) to be used in this project will be sourced from the Christies Beach wastewater treatment plant at a quality suitable for the irrigation of vines.



#### Who sets the standard for recycled water?

Recycled water has a higher nutrient concentration than natural groundwater. A large percentage of nutrients such as nitrogen and phosphorus are removed from wastewater during the treatment process, however a small percentage remains after the treatment process. Although these levels are not expected to have an impact on the aquifer, an exemption from the *Environment Protection (Water Quality) Policy 2003* is required from the South Australian Environment Protection Authority (EPA) to enable this scheme to proceed.

The water must also meet the Department of Health requirements for irrigation purposes and must comply with the rigorous standards set out in the Australian Guidelines for Water Recycling. Approvals are required from the Department of Health stating the water is fit for its intended use.

#### Why use recycled water?

Historically, treated wastewater from Christies Beach has been discharged into Gulf St Vincent. The Aldinga Aquifer Storage and Recovery Scheme proposes to recycle some of this treated wastewater by injecting it into the aquifer for storage over winter and spring and making it available for irrigation during summer and autumn.

This scheme, along with other projects in the area, are part of the *Waterproofing the South* project which aims to increase the volume and quality of recycled water by using it for commercial irrigation and other purposes in the Willunga Basin and South Coast suburbs. These schemes will also contribute to a further reduction in the volume of treated wastewater discharged in to the Gulf and reduce the reliance on the River Murray water for irrigation purposes.

### Who will use the recycled water?

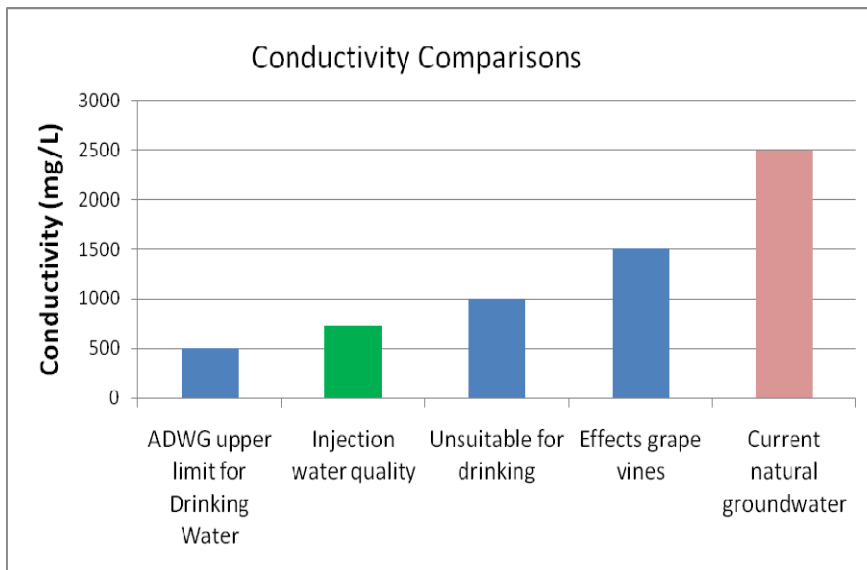
The recycled water will be used for irrigation by customers of the Willunga Basin Water Company. Willunga Basin Water Company currently supplies recycled water to more than 100 vineyards and irrigators located in the Willunga Basin.

### Which aquifer will be used?

The aquifer to be used for this scheme is the Port Willunga Formation. The natural groundwater in the aquifer at this location is saline, with conductivity (a measure of salinity, or salt concentration) being around 2200mg/L.

To put this into context, the Australian Drinking Water Guidelines (ADWG) recommend conductivity below 500mg/L for human consumption. Water becomes undrinkable at 1000mg/L and irrigated grapes become affected when conductivity is above 1500mg/L.

The conductivity of the recycled water is approximately 730mg/L (as shown in the green column in the diagram, right).



### How will the project be carried out?

The scheme aims to inject up to 400ML of recycled water into the aquifer during September and October 2009. During the following irrigation season, that same amount of water will be extracted for irrigation. In future years, the water will be injected between May and November of each year, and extracted between December to April for irrigation.

This cycle will continue each year. It is proposed that the recycled water be injected through three injection bores located along the eastern boundary of SA Water's Aldinga wastewater treatment plant property. These same bores will also be used to extract the water once the irrigation season begins.

### What construction work is involved?

There will be some isolated infrastructure works around the bores, including small fenced areas, along with pumps and a shed located at the Aldinga plant site on the corner of Colville and Plains Roads.

### Will there be disruptions during construction?

No, all work will take place on SA Water owned and operated land.

### When will it happen?

Necessary approvals were recently given to the project, and we began work during early September 2009 in order to start injecting recycled water into the aquifer for irrigation use during the 2009-10 irrigation season.

### Will this project be monitored?

Modelling indicates the injected water will form a freshwater bubble in the aquifer will not move more than a few hundred metres from the point of injection due to the slow movement of water in this aquifer.

A comprehensive monitoring program has been developed to monitor the freshwater bubble and identify any potential impacts. The monitoring program includes monitoring the water quality prior to injection (to ensure compliance with EPA licence conditions), the water quality within the bubble and the area immediately outside of the bubble. Further monitoring of the extracted water quality will also occur.

### Want to know more?

If you would like more information about the project you can:

- visit the SA Water website at [www.sawater.com.au](http://www.sawater.com.au); or
- call the SA Water projects hotline on 1800 812 362.

