



**Project: LOWER LACHLAN GROUNDWATER MANAGEMENT AREA
Independent Review**

**Location: Forbes, NSW
Client: Lachlan Valley Water Inc.**

Background

The Lower Lachlan Groundwater Management Area covers an agricultural region that is extremely important economically, with major irrigation projects and townships increasingly utilising its groundwater resources. These resources are regulated under the Lower Lachlan water-sharing plan, whereby overall groundwater use is limited to the estimated sustainable yield, a figure calculated by the Department of Infrastructure, Planning and Natural Resources (DIPNR). In the drought period of 2002-03, groundwater usage exceeded the sustainable yield estimate, and concerns were raised regarding the veracity of the sustainable yield estimate.

Lachlan Valley Water Inc. commissioned C. M. Jewell & Associates Pty Ltd to undertake an independent review of the Lower Lachlan groundwater resources, which was to include a review of the recharge estimates and a review of the groundwater-dependent ecosystem requirements.

Hydrogeological Environment

The region's geological history included the deposition of alluvial sediments – for over 40 million years – onto what is now the floodplain of the Lachlan River and its effluent creeks. The thick sequences of deposition include productive aquifers such as the Calivil and Upper Renmark aquifers. Groundwater recharge is identified by the low-salinity groundwater plume that it generates; outside this plume, groundwater salinities are generally higher, owing to the longer residence times and the more saline host rock conditions. However, lower quality groundwater may also be found within the low-salinity plume region, because of localised saline zones and (for example) the presence of pyritic lignite.

Objectives and Scope

The objectives of the assessment were:

- to review DIPNR's estimate of the annual recharge within the study region (including a review of the data used, and a review of the interpretation methods and conclusions);
- to review the environmental water requirements of groundwater-dependent ecosystems; and
- to identify any information gaps critical to an accurate assessment of the recharge and the environmental requirements of the aquifer.