

## Understanding the Receiving Environment - Key to Disposal of CSG Water

Coal Seam Gas (largely methane, the principal component of natural gas) is a valuable low emissions energy source. In the US, CSG supplies around 7% of US gas demand. In Australia, CSG reserves are estimated to be greater than the gas reserves of Bass Strait, the Cooper Basin and the North West Shelf combined.

CSG is harvested when pressure on the coal seam is reduced, usually by removal of water from the seam. If not carefully managed, removal of this 'capping' water may impact ecosystems both below and above the surface.

Ground water supports a surprising diversity of highly adapted fauna. Known as stygofauna (from the Greek styx meaning 'the lower world'), this largely invertebrate fauna is likely to both contribute significantly to regional bio-diversity, and contain many endemic species (restricted to a particular aquifer or basin). With justification, stygofauna are becoming increasingly of interest to approval agencies, and consequently stygofauna surveys are slowly but surely becoming 'the norm' for EIS's and monitoring programs responding to development that impacts the ground water. Fortunately, stygofauna sampling can generally be undertaken in association with physicochemical groundwater investigations.

### Then who would have thought that 'too much' water would be considered a potential problem?

Although CSG-associated groundwater is commonly saline, this is readily redressed using reverse osmosis. Whilst CSG-associated groundwater provides the potential to redress ongoing abstraction of surface waters for agriculture, seasonal patterns of flow are critically important to the ecology of many waterways. That is whilst CSG production may result in the continuous delivery of water to the surface, the ecology of nearby waterways may not be benefited by a continuous in-flow (or even the presence of standing water). The key to turning this 'unwanted by-product' into a significant environmental benefit is an adequate understanding of the receiving waters current and historic ecology.

Stygofauna ecology and the ecology of environmental flows: two genuinely exciting disciplines of aquatic ecology at which Australian scientists are at the 'cutting edge'.

**frc environmental**

P 07 3286 3850

F 07 3821 7936

E [info@frcenv.com.au](mailto:info@frcenv.com.au)

[www.frcenv.com.au](http://www.frcenv.com.au)



#### Disclaimer

This communication including any attachments may contain information that is either confidential or otherwise protected from disclosure and is intended solely for the use of the intended recipient. If you are not the intended recipient please immediately notify the sender by e-mail and delete the original transmission and its contents. Any unauthorised use, dissemination, forwarding, printing, or copying of this communication including any file attachments is prohibited. The recipient should check this email and any attachments for viruses and other defects. The Company disclaims any liability for loss or damage arising in any way from this communication including any file attachments.