



Position paper on coal seam gas water

Introduction

Expansion of the QLD Coal Seam Gas (CSG) industry has been occurring at a very rapid rate over recent years. While the CSG industry is bringing wealth and jobs to areas like the Surat Basin, the immediate and long-term environmental impacts potentially caused by the industry are largely unmeasured and unchecked. This is mainly due to the rapid growth of the industry outstripping legislative and regulatory frameworks, resulting in an imbalance between the CSG industries, primary production and protecting the environment.

Key issues

The key environmental issues that QCC is concerned about include:

Impacts to over and under lying aquifers

Extraction of substantial volumes of groundwater as part of the CSG extraction process is likely to have a significant impact on over and under lying aquifers, which are connected to coal measures from where gas is extracted.

QCC position

- Independent scientific assessment must determine that potential impacts to adjacent aquifers can be avoided and managed before CSG projects are approved.

Groundwater contamination

The quality of groundwater in coal seams is generally inferior to that in over- and underlying aquifers. There is a high risk that poorer quality coal seam water will leak into better quality aquifers from the large number of proposed gas wells and poor well management practices.

There is also a high risk of groundwater contamination caused by hydraulic fracturing, an industry process used to stimulate gas flows by using chemicals and applied at high pressures to fracture the coal seams.

Queensland Conservation 166 Ann St, Brisbane, QLD 4000

ABN: 89 717 887 219

Ph: 07 3221 0188

reception@qccqld.org.au

Fax: 07 3229 7992

www.qccqld.org.au

Many of the chemicals used to fracture the coal seams are toxic and are known to affect human and environmental health.

QCC position

- Independent scientific assessment must determine that inter aquifer contamination can be avoided and managed before CSG projects are approved
- Hydraulic fracturing must not occur until robust scientific assessment has demonstrated that groundwater contamination can be avoided.

Impacts to springs and groundwater dependent ecosystems (GDE)

The scale of potential long-term adverse environmental impacts to springs and groundwater dependent ecosystems caused by CSG extraction is largely unmeasured.

QCC position

- Impacts to springs and GDE's must be avoided. Independent scientific assessment must determine that potential impacts to springs and GDE's can be avoided and remediated if impacts do occur. Protecting springs should be achieved by establishing set back distances around springs where CSG activities are prohibited.

Using CSG water for beneficial purposes

While the Government has introduced regulations requiring CSG companies to treat CSG associated water to 'fit for purpose' standards, the potential environmental impacts that could occur from using treated CSG water for different purposes has not yet been fully assessed. The environmental impacts that could occur from using treated CSG water for beneficial purposes includes potential changes to soils chemistry, structure and biota; as well as water quality changes in waterways in areas where CSG water is used.

QCC position

- CSG water used for a beneficial purpose must match the background environmental water quality conditions of areas where it is being used.

Using waterways to distribute CSG water

CSG companies are seeking to release treated CSG water to rivers to distribute this water to areas where it will be used for beneficial purposes. As waterways in areas where CSG development is occurring are mostly ephemeral, introducing large volumes of CSG water year round to

these waterways will change them from being ephemeral to permanently flowing. This will substantially alter the ecological composition and water quality of waterways, which will potentially cause significant adverse impacts to these aquatic environments. For these reasons, QCC does not support CSG water being introduced to river systems

QCC position

- CSG water should not be allowed to enter or be introduced to waterways

Disposal of salt and other contaminants

It is estimated that millions of tonnes of salt and other toxic substances will be produced from CSG operations. Under current arrangements CSG companies can hold untreated CSG water and brine effluent from reverse osmosis water treatment plants in storage ponds, and then dispose of this waste in a variety of ways.

Allowable disposal methods include:

- creating useable and saleable products,
- burying residual solid wastes on properties owned by CSG companies or
- by injecting the brine effluent into aquifers with a lesser water quality.

QCC does not support CSG companies being allowed to bury salt on their properties or injecting brine effluent underground due to the inherent environmental risks associated with these disposal methods.

A more environmentally safe disposal method that QCC favours is to require CSG companies to rapidly dehydrate the brine effluent using waste heat generated from water treatment power plants; and then either marketing the residual solid waste or burying it in regulated hazardous substance landfill sites.

QCC position

- Injection of brine effluent into aquifers should not be permitted
- Residual solid waste from CSG water treatment processes should only be disposed into registered hazardous substance landfill sites

Avoiding good quality agricultural land

The CSG industry is seeking to expand into some of Queensland's prime agricultural areas. This is likely to affect food and fibre production from impacts to groundwater resources that primary producers depend on.

Along with the impacts to groundwater, it is increasingly evident that the number of roadways, pipelines, brine storage dams and other necessary CSG infrastructure will have a significant impact on farming activities and operations.

QCC position

- CSG exploration and development must be prohibited on good quality agricultural lands

Avoiding areas of High Ecological Significance (HES)

Under current legislative arrangements, the only tenure of land that is exempt from CSG exploration and development are National Parks. This means that important areas of High Ecological Significance outside of National Parks, such as wetlands, springs, biodiversity corridors and threatened ecological communities, can be degraded by CSG exploration and development.

Although CSG companies are required to offset environmental impacts, it is unlikely that the full extent of environmental impacts caused by the expansion of the CSG industry as a whole can be effectively offset. This will result in an overall net loss of environmental values throughout the areas where CSG development occurs. That must not be allowed to occur.

QCC position

- CSG exploration and development must be prohibited in areas of HES such as wetlands, springs, biodiversity corridors and threatened ecological communities

Strategic re-injection of CSG water

Estimates indicate that up to 350,000ML of groundwater per year could be extracted from coal seams as part of the gas production process. There are significant concerns about the impacts that may occur to other aquifers that are connected to these coal seams. An effective way to mitigate impacts to over- and underlying aquifers is by strategically re-injecting treated CSG water either back into coal seams or into affected adjacent aquifers.

QCC position

- Treated CSG water should be re-injected back into coal seams from where it has been extracted or into adjacent aquifers that have been affected by CSG operations

Moratorium on CSG development

Many of the environmental issues associated with the CSG industry have yet to be satisfactorily addressed. QCC believes that a precautionary approach is needed and is calling for a moratorium to be placed on CSG projects until robust scientific assessment has determined that environmental impacts occurring from CSG operations can be avoided, mitigated and the industry can be managed sustainably.

QCC position

- A moratorium should be placed on CSG development until scientific assessment can demonstrate that environmental impacts can be avoided and mitigated