

Submission
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INQUIRY INTO COAL SEAM GAS

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Coal Seam Gas (CSG) Inquiry Submission

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Introduction

My name is _____ and I am a Pharmacist working in _____, I am also the mother of two small children. I have a Bachelors degree in Biomedical Science and a Masters in Pharmacy and have recently become accredited as a Consultant Pharmacist. Due to the recent media attention drawn to CSG fracturing and campaigning in our local area, I decided to have a closer look at what this meant for the environment and our local community.

The Coal Seam Gas (CSG) industry offers substantial economic and benefits to Australia, however, if not adequately managed and regulated, it risks having significant, long-term and adverse impacts on the environment.

Hydraulic Fracturing

The practice of hydraulic fracturing, or fracking, forces a mix of water, sand and chemical into the CSG well at high pressure to fracture the surrounding coal in order to improve gas flow rates. This practice has the potential to induce connection and cross-contamination between aquifers, with impacts on groundwater quality. The reinjection of treated waste water into other aquifers has the potential to change the beneficial use characteristics of those aquifers.(1) Coal Seam Gas fracking has already been banned in France.(2,3)

Investigations in the United States have found that the probability that shale gas well projects will impact local groundwater ranges from 4.0 to 5.7% over the short term, i.e. while the wells are in development. The probability that shale gas wells will degrade local water quality over the long term (50 years) exceeds 16%.(4)

Environmental and Health Impacts of CSG Activities

Surface and Groundwater:

The National Water Commission has raised a number of concerns regarding CSG and surface and groundwater quantity and quality. The Current extraction from the Great Artesian Basin is approximately 540 gigalitres per year. Current projections indicate the Australian CSG industry could extract in the order of 7,500 gigalitres of co-produced water from groundwater systems over the next 25 years, equivalent to ~300 gigalitres per year.(1)

Impacts on other water users and the environment may occur due to the dramatic depressurisation of the coal seam, including:

- o changes in pressures of adjacent aquifers with consequential changes in water availability
- o reductions in surface water flows in connected systems
- o land subsidence over large areas, affecting surface water systems, ecosystems, irrigation and grazing lands.(1)

The production of large volumes of treated waste water, if released to surface water systems, could alter natural flow patterns and have significant impacts on water quality, and river and wetland health. There is an associated risk that, if the water is overly treated, 'clean water' pollution of naturally turbid systems may occur.(1)

The National Toxics Network has released a report in June 2011 indicating that the BTEX chemicals (Benzene, benzene, Toluene, Ethylbenzene and Xylene) are found naturally in the coal gas seams and that the fracking process can release BTEX from the natural-gas reservoirs, which may allow them to disperse into the groundwater aquifers or to volatilise into air.(1) In addition, there is evidence that CSG fracking can lead to methane contamination of shallow drinking-water to potentially explosive levels.(6)

Impacts To Human Health:

Doctors for the Environment Australia made a detailed submission to the Federal Parliamentary Inquiry in June 2011 relating to CSG impacts in the Murray Darling Basin.(7) Their Submission stated that “CSG may have adverse impacts on human health by contamination of drinking and agricultural-use water, and air. Contaminants of concern include many of the chemicals used for fracking, as well as toxic substances produced through this process and mobilised from the sedimentary regions drilled. Some of these compounds can produce short-term health effects and some may contribute to systemic illness and/or cancer many years later”.(7)

The Pilliga Forrest

A report written in June 2011 outlines the environmental issues surrounding Eastern Star Gas (ESG) conducting coal seam gas exploration and production activities in the Pilliga Forest in north-western NSW around Narrabri.(8) This report outlines impacts to the environment including:

- o Increased disturbance footprint across an area of approx 44,700 ha of native vegetation.
- o Increased ignition sources from multiple infrastructure and vehicle movements, and introduction of a flammable gas into an already fire prone environment leading to increased frequency and intensity of fires.
- o Heavy fragmentation of an area of 1,700 ha of native vegetation, leading to direct impacts on fauna and flora populations and indirect impacts through the spread of invasive species.
- o Direct destruction of at least 150 ha of native vegetation that is likely habitat for matters of National Environmental Significance.
- o Creation of artificial watering points (water impoundments) at more than 13 different locations, plus numerous drill ponds, representing a risk to wildlife.
- o Introduction of numerous sources of pollution through the use of chemicals and the handling and disposal of produced water (i.e. diesel spills, poor mitigation of flood events).
- o Direct alteration of the ecology of a creek system for up to 22km.(8)

Conclusion and a Call For Action

This report outlines only a very small fraction of the information available on the detrimental

effects of CSG fracturing. In this context, the State and Federal Government must urgently call for:

A full moratorium on all forms of coal seam gas drilling until the environmental, social and health impacts have been rigorously and independently assessed. In addition to:

1. Coal seam gas exploration and mining to be made subject to all relevant environmental legislation, including the native vegetation and water management laws.
2. The provision of standing to ensure that the community has full legal rights to challenge and enforce environmental laws under which coal seam gas companies are operating.
3. The provision of a right in the Petroleum (Onshore) Act to allow landholders to refuse consent for coal seam gas exploration or production on their land.
4. A prohibition on coal seam gas exploration and mining in important bushland (including State Forrests), valuable farmland, groundwater aquifers, residential areas and public lands.
5. A requirement that all chemicals used in coal seam gas drilling or fracking must be assessed by the chemical regulator for use for that purpose before being approved for use.

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