

Dear Sir

My name is Amanda Smith. I am a Registered Nurse living and working in Hamilton, in Western Victoria. My concerns regarding unconventional gas mining and exploration are: the health effects (both physical and psychological) on the communities living in and around the mining areas; the long term environmental and ecological damage they cause and the destruction of valuable agricultural land, which ultimately will affect Australia's food bowls; and the degradation of the aquifer and Great Artesian Basin.

I think that the short and long term negative effects of unconventional gas exploration and mining far out way any gain. Therefore, I am against any forms of CSG exploration and mining in Victoria.

Farmer health is a major concern in rural areas, with many farmers already at near breaking point. Add to this the threat of their valuable farmland being 'raped' by unscrupulous mining companies, the despair, depression and suicide rate within the farming community is certain to rise.

Both anecdotal and established evidence shows that the poisonous and toxic chemicals used in fracking have had detrimental health effects, especially on the young, old and infirm. One of the chemicals used, Gluteraldehyde is used in hospitals for sterilising equipment, it is a known carcinogen and staff working with it must wear full personal protective equipment. Do we really want such chemicals leaching into our water sources? Once in the water sources, these chemicals will continue to pollute for many years to come not just in the immediate vicinity of the mine but also tens of kilometres away.

If the water sources are polluted with fracking chemicals and they are used on farmland, fresh produce will be affected. Overseas markets, who look to Australia for 'clean food', will 'divorce' themselves from Australia and move to other countries which can provide untainted and unpolluted produce. What will happen to the local market? Will Australians wish to consume polluted produce and therefore be forced to eat imported produce of questionable freshness and quality?

Fracking uses enormous quantities of water. This is sourced from the Great Artesian Basin, which many farming and rural communities rely on. Unfortunately the water supply of the GAB is finite, what happens when the water runs out? What will those communities do? Will we see in years to come in Victoria, a desert landscape with thousands of neglected and derelict mines and no people?

The Western District is a major tourist region of Victoria, bringing valuable overseas, interstate and local dollars to the area. Should CSG mines or exploration be developed, areas of environmental and ecological significance and beauty will be destroyed. The effect will be that tourists will not want to visit the region, the tourist dollar will disappear and the knock on effect will be that many local businesses will be greatly affected and many will be forced to close and thus we may well see small communities and towns die.

With fracking there is the inevitable release of large quantities of Methane. Methane being a greenhouse gas, has been shown to be a major contributor to global warming. It also pollutes ground and surface water making it unfit for consumption. Methane is a highly flammable gas, do we really want such gases escaping in an environment where there is already a high fire risk?

I include for your reference the Doctors for the Environment summary of the **Submission to the Rural Affairs and Transport References Committee Inquiry** into management of the Murray Darling Basin – impact of mining coal seam gas (<http://www.dea.org.au>)

- Coal seam gas mining (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.
- The public health consideration of these matters has been inadequate; leaving the population exposed to potential health hazards.
- Publicly available information on the chemicals used for this purpose in Australia is inadequate, as is their assessment and regulation.
- Evidence from several countries has shown that environmental exposures are occurring which may put people at risk, and these concerns have led to moratoria on further mining operations.
- There is a significant threat of ground water pollution, for the hydrological systems involved are complex and inadequately researched. CSG mining in the Great Artesian Basin is unwise because of the potential for contamination in a system which may not be renewable.
- The monitoring of potential contamination of water supplies in coal seam gas mining areas is inadequate.
- Coal seam gas mining uses prodigious amounts of water, which will compete with human and agricultural needs. Great Artesian Basin water is essentially a non-renewable resource. It is already at an advanced stage of depletion. Remaining water should be used with great care and only for essential agricultural and human purposes. Coal seam gas mining must not be permitted.
- Human health relies on having clean safe drinking water and unpolluted air. Coal seam mining operations should not be allowed to endanger these basic health needs of Australians. The development of this industry in Australian conditions is very unwise without adequate scientific studies and the application of precautionary principle.
- Health impacts are occurring now from the disruption of hitherto stable farming communities with much of the stress, family discord and mental illness expected to be reminiscent of the Murray Valley region due to drought.
- The long-term impacts of unconventional gas mining in the United States suggest significant damage to the ecological systems upon which human life exists. There are significant health impacts in loss of good agricultural land in the face of the long-term need to feed Australians. The impact on Australia's ability to feed other countries as the world moves to increasing food shortages must also be considered.
- Australia is also one of the world's food bowls. According to the FAO, there are currently more than one billion human beings in hunger. Over the past 18 months, climate unpredictability in both the northern and southern

hemispheres has led to massive crop failures. Such effects are what the active climate science community has been predicting for years. The projected economic gains from the industry have been widely promulgated but a full cost-benefit analysis of the impacts on the wider economy of a massively expanded CSG industry has not been done. Financial benefits from employment, mining royalties and the export of coal seam gas must be offset against damage to agriculture, food exports, tourism, soil, water and air quality, and human health and well-being.

- Methane is a fossil fuel, and contributes to greenhouse emissions and therefore climate change. As such it will be contributing to the increasing burden of illness due to climate change globally. These factors have not been considered in Environmental Impact Assessment (EIS) processes or by Australian governments. There are implications for Australia's relations with other countries and for future international agreements.
- The fossil fuel footprint of coal seam gas is said to be half that of coal. This is in some doubt and further information is needed. Detailed monitoring of fugitive emissions is necessary. In particular, such figures become meaningless if there is methane leakage at the point of extraction. At least in the short term, methane is an infinitely worse green house gas than CO₂.
- Doctors for the Environment Australia considers that the EIA processes used have been inadequate and have failed to assess health impacts appropriately. Notifications of terms of reference and dates of CSG and coal projects are poorly advertised and response times inadequate.

I am hoping the Victorian Government can have a long-term vision for this state and can see that the way forward is not to destroy this beautiful state but to preserve it for this and future generations and thus ban all CSG mining and exploration and end all leases issued. This outcome would be a legacy the present Victorian government would be remembered for and would rightly be proud of.

Yours faithfully

Amanda Smith RGN

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