Director, Strategic Assessment

Department of Planning & Infrastructure
GPO Box 39
SYDNEY NSW 2001

To the Director,

Draft amendment to the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) (Coal Seam Gas Exclusion Zones) 2013

I am making this submission today as a concerned member of the community. I have researched as much as I can about the effects of Coal Seam Gas mining and I believe that the serious risks that Coal Seam Gas poses to our Water supply, MUST be acknowledged by our Government.

Australia is in the enviable position of having a lot of Coal Seam Gas mining history from overseas countries to guide us. In these countries, there is an abundance of documented evidence, of contamination to water and environment, causing major health impacts to animals, humans and wildlife. There have been many cases of Illness and death reported, directly attributed to Coal Seam Gas Mining, contaminating water sources in the area. Here in Australia we are already documenting the same disturbing illnesses.

Scientists worldwide tell us that Coal Seam Gas mining is very high risk. The cement wells that are used can never be guaranteed. It is common knowledge that a high percentage of casings leak, split or fail within the first twelve months. This poses a serious risk to our Aquifers and Water Catchments.

The following information shows previous coal seam gas environmental incidents, which relate to water contamination. It demonstrates that this industry has a history of mismanagement, caused by self-regulation.

Santos, CSG exploration drilling - Pilliga State Forest

Water Contamination
1. High levels of ammonia, methane, carbon dioxide, lithium, cyanide, bromide and boron
2. Levels of arsenic were 21 times higher in the contaminated zone than natural levels
3. Levels of lead 25 times higher in the contaminated zone than natural levels
4. Levels of Nickel 171 times higher in the contaminated zone than natural levels
5. Levels of Chlorides 191 times higher in the contaminated zone than natural levels
6. Levels of Petrochemicals 19 times higher in the contaminated zone than natural levels

A Santos report confirmed, a series of more than twenty failures including:-

1. Toxic Coal Seam Gas water, spilled at up to thirty nine well sites
2. Kangaroo deaths in water ponds
3. Spillage of waste water, which led to extensive tree deaths
4. High levels of salt in water discharged into creek systems that flow into the Murray Darling Basin.

AGL, CSG Production drilling - (Sugar Loaf 3) Camden, (130 wells)

Explosion at Well (17/05/11)

1. This incident released plumes of contaminated water and foam into the atmosphere in the vicinity of housing and a water catchment feeder stream

2. AGL failed to report the incident for two days until the leakage was shown on Television.

Groundwater Monitoring

1. AGL has acknowledged, it has conducted no groundwater monitoring since the Camden coal seam gas project commenced operations in 2002

Arrow Energy

Water Contamination

1. Arrow Energy confirmed that benzene, toluene, ethylbenzene and xylene was found in well water associated with its coal-seam gas operation at Moranbah, west of Mackay

Environmental Concerns relating to Water

- The Contamination of drinking and irrigation water and the destruction of productive farmland are significant issues that concern the community. At risk are our agricultural lands, our drinking water catchments, and the state's biodiversity.

- The Australian Petroleum Production and Exploration Association acknowledges that CSG extraction has the potential to deplete and contaminate local aquifers.

- THE coal seam gas industry conceded (before the start of the first public hearing in NSW, held in Narrabri, of a Senate inquiry into the effects of coal seam gas mining) that Coal Seam Gas extraction will inevitably contaminate aquifers. There is no solution to contamination of our water supply, or Aquifers.

- The Australian Petroleum Production and Exploration Association told a public meeting in Sydney that good management could minimise the risks of water contamination, but never eliminate it. ''Drilling will, to varying degrees, impact on adjoining aquifers,'' said the spokesman, Ross Dunn. ''The extent of impact and whether the impact can be managed is the question.''

- CSG mining produces vast quantities of waste water, which represents a serious environmental risk. Each Megalitre of associated water brings up to 5-8 tonnes of salt previously stored safely underground. To date detailed plans for use or disposal of these huge quantities of salt are incomplete.

- If untreated CSG water comes into contact with good quality, high clay-content soils, such as those on the NSW Liverpool Plains, the soil becomes impervious to water. Plant roots cannot penetrate. The soil will become barren and useless for agriculture.

- If CSG water is accidentally released, for example through the failure of a dam wall or a spill, it could damage aquatic life in rivers and wetlands that depends of freshwater.

- One of the most significant environmental concerns is the Coal Seam Gas exploration at Oakdale beside Warragamba Dam, the major water supply for Sydney.

- The proposal for, up to 20,000 - 40,000 wells, in the Surat and Bowen Basins in the next 20 years alone. The environmental stakes are high. The Water Group expressed significant concerns about “the general level

of uncertainty associated with these proposals, and the inability of proponents to accurately quantify their individual and collective impacts over the life of their projects

- Extraction of CSG typically involves pumping the water used in the extraction process plus any associated fracking fluid into large ponds for evaporation. These ponds may cover a large area and will subsequently need to be re-mediated and rehabilitated. The water is typically saline and should the ponds fail (e.g. leak) surrounding soil quality and vegetation could be compromised or in the worst case destroyed. If pond liners fail, it could also contribute to aquifer contamination with chemicals and saline water. If ponds are flooded, their contaminants are released to surface water. Evaporative ponds will inevitably result in the transfer of chemical pollutants into the atmosphere either in gas or particle phase.

- Radioactive tracers are used with various types of propane that include resin coated sand and man-made ceramics (eg polymers, nanomaterials) which can be retained in the produced water. This Radioactive material must be disposed of to an appropriate licensed facility.

- Gas companies in Australia are now developing and/or operating plants to treat the 'produced water' (for instance using reverse osmosis) and to on sell it to farmers for irrigation, domestic drinking water supply or cooling of power stations. However, reverse osmosis filtration has significant limitations and may not be successful in removing all contaminants. Concentrated hazardous wastes from evaporation ponds need to be disposed of to an appropriate licensed facility. This will add significant demands on regional waste management capacity (e.g. landfills).

- The National Water Quality Management Strategy (NWQMS) recommends moving away from relying solely on chemical specific guidelines coupled with water quality monitoring to an integrated approach using direct toxicity assessment (toxicity bioassays) and biological monitoring. Neither of these are required by the authorisation

- In Australia subsurface water is our greatest and least understood asset. This concurs with the latest planning data from the United Nations which was confirmed in a press release on the sixteenth of January 2012 by the National Centre for Groundwater Research and Training. They explain that ninety seven percent of global fresh water is under the ground and consider it a matter of national security: "Where our national security is concerned, we should spare no effort to assure it."

- One submission to the Senate inquiry, from the medical group, Doctors for the Environment, outlined some of the potential health risks posed by coal seam gas mining. It said some of the compounds used during drilling, or released from underground by drilling, could ''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,''

I'm very concerned about the environment and what coal seam gas will leave behind for future generations.

The long-term economic benefits of our agricultural and 'nature-based' industries are a consideration. Our sustainable industries create a basis for our future and must be protected. Not replaced by the short-term economic and unsustainable gains of the CSG industry.

The Government tells us that an “Independent Scientific Committee” has been allocated to investigate the CSG industry, but the FACT is, the majority of the committee are aligned with the mining industry, so cannot be considered impartial. In FACT the Committee has no real power, and can only make suggestions and recommendations to the Government on its findings. This does nothing to protect our Water.

Coal Seam Gas Mining is an experiment with the lives of millions of people, who's water will be severely compromised. Like Asbestos; the repercussions will impact on future generations if this is allowed to proceed.

Australia is one of the driest continents in the world, and as such our water supply is a matter of national security. It must not be sacrificed for short term monetary gains.

The COST OF COAL SEAM GAS EXTRACTION is just too GREAT and I call on the Government to BAN all CSG MINING. We must develop renewable's for our future energy needs. I implore the Government to not be swayed by corporations with vested interests in the fossil fuel industry, listen to the concerns of the citizens of Australia. This is our future and the health of future Australian citizens.

Yours sincerely

Aroha Watson