

20 September 2013

Ms. Margaret Liveris
Committee Clerk, Standing Committee on Environment and Public Affairs
Legislative Council
Parliament House
GPO Box A11
Perth WA 6837

Dear Members of the Committee on Environment and Public Affairs

Re: Inquiry Into the Implications for Western Australia of Hydraulic Fracturing for Unconventional Gas

This submission outlines my concerns about Hydraulic Fracturing for Unconventional Gas in Western Australia and the implications for our health, environment, society and future.

Firstly, I believe the terms of reference for this enquiry are far too narrow. I would like to see included the following parameters:

1. **A thorough investigation into the potential for undesirable health impacts from all stages of hydraulic fracturing:** The exceedingly toxic 'cocktail' of chemicals used in Fracking includes plastics, neurotoxins, endocrine disrupters and radioactive substances that pose a serious threat to children and adults even at very low levels. The various chemicals used have been identified to include toxic, carcinogenic, allergenic and mutagenic substances. Scientists around the world have denounced these chemicals as a serious risk for human health. Why have only 4 of the 23 most commonly used fracking chemicals been assessed by NICNAS?
2. **The threat to our water supplies:** The European Commission 2012 Report into Shale Gas Fracking found an overall high risk of groundwater contamination from unconventional gas fracking activities. Contamination can occur via well failure during production, longer-term well failure linked to corrosion, migration through faults, or through surface water pollution migrating into aquifers. Gas bore stability has been proven in industry and independent reports to be unsatisfactory. Cement corrosion or cracks are indeed common throughout the life of gas bores, and leakages and spillages occur from early in the process. Given the ongoing critical element of water supplies in our climate, how can we compromise their integrity? Additionally, the extraordinary

amounts of clean water required for fracking in a drought ridden state calls for serious questioning.

3. **Resultant Air Pollution:** BTEX Chemical Compound, Hydrocarbons and Methane, as well as documented radium and uranium leakages around shale gas mining sites all have serious health implications. The Ground Level Ozone that is created also requires investigation. Air Pollution from fractured mine sites has dire health effects for both humans and other life forms.
4. **The impact on natural ecosystems:** All negative effects on natural ecosystems and the long-term implications of this need addressing.
5. **Transportation Side Effects:** The cost of resulting air pollution, damage to roads, noise pollution, general disruption and potential risks to communities from the massive transportation of highly dangerous chemicals and enormous quantities of water also requires investigation.
6. **Regulation:** The present regulations are very loose and in some cases unenforceable, as identified by Dr. Tina Hunter, the independent expert commissioned by the DMP in 2011. Her recommendations have still not been addressed. The Department of Mines and Petroleum is clearly compromised with the dual task of promoting the industry and ensuring Western Australia's environmental values are protected. Even the integrity of the EPA has been brought under scrutiny under the recent Supreme Court ruling that environmental approvals for the James Price Point gas hub were unlawful. Ensuring that persons and bodies responsible for adequate regulations are uncompromised is imperative.
7. **Climate Change:** Hailing Tight and Shale Gas as 'Clean Energy' is grossly misleading. Aside from all of the previously mentioned concerns, fugitive methane emissions during extraction, processing and transportation of shale gas outweigh any supposed benefit of gas over coal with greenhouse warming issues. Comparative investigation is required into the economic and environmental benefits for expanding renewable energy generation. Western Australia has a massive potential with solar and wind generated energy.
8. **Social Impacts:** The potential negative social impact of gas fields on both traditional and existing communities also requires addressing.
9. **The Cumulative effect** of Shale and Tight Gas development, as opposed to individual well assessment, is also in need of investigation.

To address the existing terms of reference:

1. How hydraulic fracturing may impact on current and future uses of the land:

The afore-mentioned contamination of air and water from hydraulic fracturing and the impact on natural ecosystems and on farming and pastoral land has potentially disastrous implications. Extensive and irreversible environmental destruction and damage has occurred during and in the wake of tight and shale gas mining in Australia and throughout the world. Water contamination and animal sickness and death has affected both natural environments and farming and pastoral industries. Our state has a thriving and growing tourist industry that would be brought under serious threat by hydraulic fracturing. Likewise, pastoral and farming lands are rendered useless by a loss of clean water supplies, livestock, and appropriate soils and conditions for food production. The implications for our farming and pastoral industries, and consequently our food are enormous. Phytophthora dieback is another area that could be further compromised by tight and shale gas mining.

The uncontestable rights of fracking companies over private land, native title land and conservation parks are a serious threat to our rights as citizens and custodians of our land. The gross and biased powers that they have for short-term economic benefit have long-term negative health, economic, environmental and social implications.

Additionally, investigation is required into the increase of seismic activity witnessed in some areas following widespread hydraulic fracturing.

2. The regulation of the use of chemicals used in the hydraulic fracturing process:

Laws should ensure that no dangerous or questionable chemicals be used. As gas bore integrity is compromised at several stages of the process, contamination of ground and surface water and air can and does occur. The risks are inherent in the fracking fluid and the flow-back fluid. Additionally, wastewater that contains dangerous heavy metals and chemicals is stored in ponds or fracked back into the earth. The potential for further leakages and contamination is great, including along pre-existing fault lines and through fault-lines created during the fracking process. This severely compromises our entire water basin supply as well as our surface water supplies.

3. The use of ground water in the hydraulic fracturing process and the potential for recycling of ground water:

Given the astronomically high amounts of water used in each bore, the use of ground water for the fracking process has serious implications for all peoples, communities and industries that rely on

this water. Extensive fracking will deplete our aquifers, resulting in severe adverse social, environmental and economic effects in the future.

4. The reclamation (rehabilitation) of land that has been hydraulically fractured:

The 2 year obligation of gas and oil companies for monitoring bores after fracturing is insufficient, and leaves a potential massive cost to our society for the ongoing threat that will continue after this period. Can this land be rehabilitated after such extensive damage and contamination?

Yours Faithfully

Sharon Ogle