

## Environment and Public Affairs Committee

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**From:** John Clark  
**Sent:** Wednesday, 4 September 2013 5:01 PM  
**To:** Environment and Public Affairs Committee  
**Subject:** Hydraulic Fracturing For Unconventional Gas.

Mr John B Clark

Subject: Inquiry into the Implications for Western Australia of Hydraulic Fracturing for Unconventional Gas.

Preamble: The Honorable Members of the Legislative Council conducting this inquiry into Hydraulic Fracturing for gas in WA would be well aware of the controversy already associated with this recent system of obtaining gas and would have access to relevant evidence of some of the disastrous outcomes of this practice of obtaining gas. I can only generalise from the view point of information gained via reports in the media regarding damage done in other areas to the land, chemicals, groundwater and rehabilitation.

It appears to me that "unconventional" used in the description in the subject name of the inquiry is a clue to a degrading land process named "fracturing", that this subject is even being considered for discussion for use in WA is surprising. Any gas that is obtained by this unconventional process would probably never benefit or be used by West Australians to reduce the already exorbitant cost of gas that is already produced in vast quantities in WA and then exported.

Item a): Hydraulic fracturing will be deleterious to the land when you consider that "land" is not just the top as used for farming but also underground as used for mining. We are aware of the various outcomes of mining (or we should be) seeing that in WA there would be approx 300 mines at differing stages of operation/ pending/ mothballed or closed. It could be said that after mining has taken place the land is never the same, it may be rehabilitated to certain environmental standards after closure but the mined land is never the same.

The damage caused by mining varies due to what is being mined.

Underground mines may look acceptable on the surface but the tunnels and underground workings remain and are not usually filled in, just blocked, so there could be future ground collapsed or subsidence.

Another cause for concern is the fact that the land surrounding the fracturing operating area could be under some other land not even in the vicinity of the original fracturing area without the actual landowner knowing. Clarification is required by Government as to what extent ownership of the land goes, does the land ownership include under the top of the land, if so to what depth?

Item b): Regulating chemicals used in the fracturing process appears to be kept secret by the fracturing companies concerned, which would make it impossible to determine the actual chemicals used or the amounts. It would be essential to know what chemicals and the amounts are used to ensure they were safe to use. If the chemicals are not disclosed by the user then they cannot be legally used in the fracturing process, as they could be hazardous/unsafe to use. It is also essential to know what chemicals and how much is used for protection of the workers and surrounding areas.

Item c): Use of groundwater in the hydraulic fracturing process and the potential for recycling of produced water. Water and mining go together so a sizable supply of water is essential for fracturing. Aquifers are used in arid mining areas for their water supply with sometimes many aquifers to supply differing needs. Food for thought is what happens when one aquifer is connected to another, so one contaminated aquifer linked to another would affect many in the same area or even further away. Aquifers can be depleted rapidly in arid areas due to the fact that they were at the high levels after many years of rainfall without being used until they are used for fracturing. Recycling should be part of the process as I presume water will be used in more than just one phase of the operation e.g the actual fracturing and the chemical distribution, so maybe differing grades of water could be used in the overall process. Maybe after the fracturing process the water cannot be used, it could be too contaminated. The question then will be what will the Unconventional Gas Company do with the unusable contaminated water, pump it back

into the aquifer? pump the contaminated water into holding tanks? The neighboring landowner will then have his land contaminated and his water unusable with free gas coming out of the water tap, this I watched happening on a TV program.

Item d):Reclamation of land. Items mentioned at a-b-c above could mean that not all land after being user for hydraulic fracturing could be rehabilitated and will be useless for the original land practices or any other use due to contamination by chemicals/ water or lack of water with the land liable to subsidence and instability.

The whole idea of even considering hydraulic fracturing in Western Australia with our current water shortage situation and the on-going population increases is fraught with problems. Western Australian should look at the big picture with royalties and taxes from accepted forms of mining and not the same mistakes as other countries to the detriment of the population.

Regards Mr John B Clark

5/9/13