To Hydraulic Fracturing Taskforce
GPO Box 4396
Darwin, NT 0801, Australia

06/08/17

Dear Members of the panel,

I thank you for allowing me to speak at the public hearing into Shale gas Fracking in the NT.

I spoke on the premise that Water Is Life and would like this written submission along the same lines.

I acknowledge as I write this and was remiss in acknowledging at the time, that I was speaking and now writing from a place that is Larrakia Land. In acknowledging the indigenous people of the land I feel we must also attempt to honour and understand the very significant connection they have to the land and life systems which are the foundation of religion, law and the continued existence of culture.

I would like to mention that the fresh water sources here in Darwin, a place of relatively light industrial development, are already polluted well beyond what is considered by local people to be an acceptable level. While Larrakia had been blessed with several good fresh water sources and Darwin was chosen as a site for colonial settlement due to the availability of fresh water, these precious water sources have not been protected. Popular fishing grounds in Rapid Creek, Ludmilla creek and Buffalo creek have all been contaminated with effluent and chemicals. None the less people continue to turn to these fresh water systems as a means of food supply. It is an expectation in the NT that if you want food you will find it in the environment, which has always supported and sustained the people. I mention these in order to highlight just how integral a clean environment is to the people who live here in the NT (Both indigenous and nonindigenous) and to illustrate how incapable The Northern Territory's government and departments are at protecting important fresh water systems.

There were many points in the interim report I would like to comment on but I think I'll focus on two things, The use of the term 'Precautionary Principal' and the comparisons made to Coal as a source of energy as they relate to the goal of achieving a sustainable, survivable future.

The term Precautionary Principal. Please consider, if the Panel seriously intend to apply this as a guiding principal of the inquiry then the whole case could be closed and most of our testimonies considered moot. If the Precautionary Principal were applied then it would be up to the Mining companies and their financiers and Government supporters to prove that their proposed development will pose NO risk to Water, Land or Community and we would not feel the need to have to explain to you or the Government the obvious threat fracking poses to life systems and what the concept of sustainable use of our environment means to us.

Since science does not deal in absolutes we must consider there will always be some element of risk, therefore for the purpose of applying the precautionary principal we must consider a compromised

position of considering what is a reasonable element of risk? What do we stand to lose? The scales must come out and we musts measure the significance of the potential product against those things which stand to be harmed as a result of getting it.

The deposits we have heard about which may be subject to the fracking process have been referred to in the Interim report as a 'reservoir', I believe the term reservoir is misleading and a deceptive word that should be questioned. In my opinion the deposits should not be called a reservoir at all!

What we have is deposits of shale which are in solid form, they contain elements which can be converted into a usable liquid or gas substance by a complex and disruptive process which completely changes the nature of the matrix it is contained in. By doing this we are creating a 'reservoir' where there was none. This process means that the elements we consider toxic, cease to remain contained safely within rock 1,000s of meters underground. The deposit is transformed into a liquid and gaseous form which is mobile and capable of migrating in any direction dependent on the availability of a channel.

In procuring what we want from the gas we inevitably release the CO2 or Methane which we are now quite aware will contribute to the catastrophic warming of our planet and inevitably end life as we have come to know it.

Water is a fundamental element all species require for their existence. It has been considered the most precious resource throughout human history and in many cultures is considered sacred. Access to fresh drinking water is the primary concern for most of the worlds population, it is what we need to feed our crops and livestock and is infinitely more valuable than the share prices of whatever commodity we hope to exploit from the land which supports our water supplies.

Access to fresh water is diminishing at a rapid pace throughout the world. Recently in Australia we have seen the over exploitation of the Murray Darling basin, this is a serious matter of survival for agriculture in southern States of Victoria and South Australia. Gas is not a necessary component to the continuation of life. I would say that the value of fresh water is greater than that of gas.

In determining the element of risk to water, the panel must consider the extent and duration in which we will need to depend on our fresh water supplies. Aboriginal people have lived on this land for tens of thousands of years and have come to know and protect their water sources over this time. Their survival has been dependant on wise management. If we want to talk about the continuation of human occupation of this land we must think in a scale of time well beyond the life of a mine. We are talking about geological time rather than the fiscal year, or the term of an election cycle which is all it takes for administrative or regulatory responsibility to be shirked, ignored, arbitrarily re-written or deliberately sabotaged.

Therefore when confronted with the supposition that fracking wells 'will' eventually fail it should be clear that the people are not satisfied with the short term assurances from Government or mining companies that well integrity is assured. The second law of thermos dynamics dictates that the measures put in place to prevent the man made toxic 'reservoirs' from degenerating and releasing their chemicals into our water supply should be assumed as extremely likely. If following a Precautionary Principal we need to see far more convincing evidence that the chemical compounds turned mobile on frack sites can be contained well beyond the life of the well! And because we are

talking about multiple access sites across a single reservoir we must acknowledge that the failure of even a single well out of a thousand is all it would take for an aquifer to be contaminated.

With regard to comparing the production of coal seam gas to coal in terms of CO2 emissions, frankly this is a clear indication that the panel and the powers that be are not considering the very real and dire situation we are currently facing with regard to CO2 emissions. There are now very successful alternative energies which should be the bench mark for emissions. Coal is no longer an option, in a sane world burning coal would be outlawed.

As scientists who are aware of the seriousness of this situation I feel you have made a serious error in comparing to the use of coal, it indicates a bias in favour of the fosil fuel industry. It concerns me that a panel of scientists would allow such backward thinking to influence an opportunity to look realistically at what is needed for our country to proceed into a realistic future in which we address the very real threats to our life systems and opportunities to develop productive and efficient energy sources. Please consider your error in making this comparison and help us move toward a future where our children stand a chance.

Thank you for your time,

Kind regards and good luck.

David Forsyth