

Kim Roberts  
Alice Springs, NT 0870

31<sup>st</sup> May 2014

To The Commissioner  
For Public Enquiry into Hydraulic Fracturing in the Northern Territory  
Dr Allen Hawke AC

*hydraulicfracturing.inquiry@nt.gov.au*

## **Submission to Northern Territory Government – Public Inquiry into Hydraulic Fracturing**

Dear Dr Hawke

Thankyou for this public enquiry, that provides opportunity to obtain information, hear opinions, and voice concerns about Hydraulic Fracturing.

As a resident and parent of Alice Springs, I have concerns about the Territories economic prospects and development, and our needs of clean energy mechanisms to sustain the current and future technological modern way of life. It is imperative that in designing our new energy sources for the future, that we adopt the best practice to preferably eliminate or at least strictly control any negative impacts our needs place on the Environments. Hopefully, we can move toward a clean energy future, which will provide us with the opportunity to continue to enjoy, the beautiful natural landscapes and environments; and cherish and preserve, our part of the unique Australian Flora and Fauna, and cultural way of life.

**I ask that you examine and report on the following issues of concern for the Northern Territory from the proposed activities of hydraulic fracturing for large scale extraction, production and proposed economic benefits of CNG.**

In this submission I present or mention in my layman's way concerns or issues relating to Water Safety and contamination from hydrocarbons and other chemicals, Methane and it's relation to Global Warming, Economics and Seismology.

## WATER SAFETY

Please thoroughly have the effect of hydraulic fracturing on Water Resources and water quality thoroughly examined and discussed by experts in all of the science specialist's fields. And disclose the findings in all transparency to the Public and Government Officials. Be inclusive and with clarity the differences and similarities of the types of extraction methods and to what depths, whether it be above or below the water aquifers. Also include "produce water" and how it is used before and contained or recycled after the fracturing process. And explain what is meant by the "play" of wells.

Include quantities of water used in conjunction with the combined process of using hydrocarbon fluids used to assist in the hydraulic fracturing process.

[http://www.earthworksaction.org/issues/detail/hydraulic\\_fracturing\\_101#.U4nRTfm1ZcR](http://www.earthworksaction.org/issues/detail/hydraulic_fracturing_101#.U4nRTfm1ZcR)

<http://exxonmobilchemical.com/Chem-English/brands/hydrocarbon-oxygenated-fluids-applications-hydraulic-fracturing.aspx>

## Concerns

Due to increasing undeniable evidence of health problems and water contamination experienced by communities here in Australia and around the World from hydraulic fracturing. Communities, where hydraulic fracturing has been taking place have reported similar experiences of their water being deemed not fit for human consumption, or to bathe, or wash their clothes in; due to methane and other toxic chemical contaminants. Additionally, they report on water being so volatile with methane contamination that they are able to ignite the very water that runs from their household taps and/or bores.

## WATER CONTAMINANTS - ENDOCRINE DISRUPTORS

The following extract outlines the many chemicals used in natural gas operations:

### **Natural Gas Operations from a Public Health Perspective**

In September, 2011, **Natural Gas Operations from a Public Health Perspective** was published in *Human and Ecological Risk Assessment: an International Journal* (peer-reviewed).

#### **Abstract**

The technology to recover natural gas depends on undisclosed types and amounts of toxic chemicals. A list of 944 products containing 632 chemicals used during natural gas operations was compiled. Literature searches were conducted to determine potential health effects of the 353 chemicals identified by Chemical Abstract Service (CAS) numbers. More than 75% of the chemicals could affect the skin, eyes, and other sensory organs, and the respiratory and gastrointestinal systems. Approximately 40-50% could affect the brain/nervous system, immune and cardiovascular systems, and the kidneys; 37% could affect the endocrine system; and 25% could cause cancer and mutations. These results indicate that many chemicals used during the fracturing and drilling stages of gas operations may have long-term health effects that are not immediately expressed. In addition, an example was provided of waste evaporation pit residuals that contained numerous chemicals on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Emergency Planning and Community Right to Know Act (EPCRA) lists of hazardous substances. The discussion highlights the difficulty of developing effective water quality monitoring programs. To protect public health we recommend full disclosure of the contents of all products, extensive air and water monitoring, coordinated environmental/human health studies, and regulation of fracturing under the U.S. Safe Drinking Water Act.

#### **Citation**

Colborn T, Kwiatkowski C, Schultz K, and Bachran M. 2011. Natural gas operations from a public health perspective. *Hum Ecol Risk Assess*, 17(5):1039-56.

<http://endocrinedisruption.org/chemicals-in-natural-gas-operations/journal-article>

***THE AUSTRALIAN COUNCIL OF LEARNED ACADEMIES (ACOLA) REPORT  
“ENGINEERING ENERGY: UNCONVENTIONAL GAS PRODUCTION” EXTRACT***

Outlines process directives to win over community support for hydraulic fracturing via consultations between Governments, Mining Companies, Government Environment Monitoring Agencies and Communities.

***HTTP://WWW.ACOLASECRETARIAT.ORG.AU/ACOLA/PDF/SAF06FINAL/ACOLA%20ENGINEERING%20ENERGY\_SHALE%20GAS\_%20FINAL%20REPORT%20EXTRACT.PDF***

## ***Concerns***

Communities can have no confidence in the process when the Petroleum Industry is excluded from the Water Authority Regulations.

Please be completely transparent and have the reasoning behind this explained.

Is it because the industry cannot realistically comply with public health safety concerns?

## METHANE EXTRACTION METHODS CONTRIBUTING TO GLOBAL WARMING

The following is an excerpt from : Climatic Change (2011) 106:679–690  
DOI 10.1007/s10584-011-0061-5

Methane emissions are at least 30% more than and perhaps more than twice as great as those from conventional gas. The higher emissions from shale gas occur at the time wells are hydraulically fractured—as methane escapes from flow-back return fluids—and during drill out following the fracturing. Methane is a powerful greenhouse gas, with a global warming potential that is far greater than that of carbon dioxide, particularly over the time horizon of the first few decades following emission. Methane contributes substantially to the greenhouse gas footprint of shale gas on shorter time scales, dominating it on a 20-year time horizon.

The footprint for shale gas is greater than that for conventional gas or oil when viewed on any time horizon, but particularly so over 20 years. Compared to coal, the footprint of shale gas is at least 20% greater and perhaps more than twice as great on the 20-year horizon and is comparable when compared over 100 years.

Methane and the greenhouse-gas footprint of natural gas from shale formations

A letter - Robert W. Howarth·Renee Santoro·

Anthony Ingraffea

Received: 12 November 2010 / Accepted: 13 March 2011 / Published online: 12 April 2011

© The Author(s) 2011. This article is published with open access at Springerlink.co

[HTTP://DOWNLOAD.SPRINGER.COM/STATIC/PDF/5/ART%253A10.1007%252FS10584-011-0061-5.PDF?AUTH66=1401716737\\_FE71F63FF7CE50E608D9AE43CF8166D2&EXT=.PDF](http://download.springer.com/static/pdf/5/art%253A10.1007%252FS10584-011-0061-5.pdf?auth66=1401716737_fe71f63ff7ce50e608d9ae43cf8166d2&ext=.pdf)

## ECONOMICS

The ACOLA into Engineering Energy Report suggests there are no guarantees to the financial viability of remote Australia gas sales, due to the challenges of higher production costs in remote Australia compared to North American production costs.

[http://www.acolasecretariat.org.au/ACOLA/PDF/SAF06FINAL/ACOLA%20Engineering%20Energy\\_Shale%20Gas\\_%20Final%20Report%20Extract.pdf](http://www.acolasecretariat.org.au/ACOLA/PDF/SAF06FINAL/ACOLA%20Engineering%20Energy_Shale%20Gas_%20Final%20Report%20Extract.pdf).

Another potential competitive market is China's coal seam gas resource, considered to be the largest in the world.

<HTTP://WWW.GLOBALPOST.COM/DISPATCH/NEWS/BUSINESS/ENERGY/130529/GAS-FRACKING-HYDRAULIC-FRACTURING-SAUDI-ARABIA-EUROPE>

In considering a low return on investment, due to Northern Globally driven market prices, this surely must be an ongoing concern for large scale investment.

### **An Alternative Investment**

Utilize Territory resources only as a means for the short term, to power our own industry in the short term and help facilitate the new clean technologies.

Clean Drinking Water, and Food production and New Clean Energy Technology.

## SEISMOLOGY CONCERNS

***Fracking is also emerging as a cause of increased seismic activity around the world.***

<http://www.globalpost.com/dispatch/news/regions/americas/mexico/140428/mexican-fracking-shale-gas-earthquake-tremors>