



ABN 72 083 254 308

30 May 2014
Ref: MH:IfI 14005

The Commissioner
Hydraulic Fracturing Inquiry
c/- GPO Box 4396
Darwin NT 0801
Via Email: hydraulicfracturinginquiry@nt.gov.au

To The Commissioner

Re: Submission to the Northern Territory Hydraulic Fracturing Inquiry – May 2014

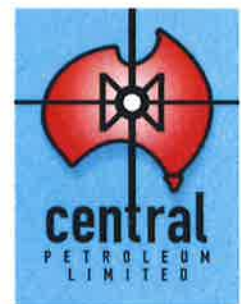
Central Petroleum would like to submit the attachment and the following information in support of Hydraulic Fracturing in the Northern Territory.

1. Central Petroleum Limited supports the Northern Territory Hydraulic Fracturing Inquiry and the APPEA submission of May 2014.
2. It is important that the outcome of the inquiry be based on facts and science, not fiction and fear.
3. We feel that much misinformation has been floated by those with vested interests (commercial and political).
4. The pertinent facts are:

(a) Fact: *"Dr Ehlig-Economides has just finished a two-day industry roundtable with regulators from across Australia and representatives from companies including Santos, INPEX Corp, Linc Energy and Boart Longyear.*

She said Australian authorities and companies should take comfort from the track record of companies in the shale gas industry in the United States, where more than 1 million wells have been drilled, claiming that the US Environmental Protection Agency had no record of this resulting in the contamination of aquifers. "They have no record of hydraulic fracturing interacting into water wells," she said in Adelaide on Thursday." (Source: Financial Review 23 May 2014)

(Dr Christine Ehlig-Economides is considered a leading authority on unconventional gas and is the Albert B Stevens Endowed Professor of Petroleum Engineering at Texas A&M University).



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(b) Fact: All commercial onshore fields in the Northern Territory have required stimulation to be commercial; if you stop stimulation then you shut down the onshore oil and gas business.

(c) Fact: *"The directions statement, marked commercial-in-confidence, says as research and development in unconventional gas - such as coal seam and shale gas - has the potential to "create significant value for our nation", CSIRO will grow research in the area. It will also implement its mining strategy focusing on activities "that help to significantly enhance the productivity of this vital sector". (Source: The Age 28 May2014)*

(Research into air quality and emissions from coal seam gas production is being undertaken by the CSIRO and the Federal Government. More information can be found on the CSIRO web site.)

Central Petroleum would like the opportunity to expand on this submission in a transparent forum.

Yours faithfully

Central Petroleum Limited

Richard Cottee
Managing Director

OBJECTIVE OF OIL AND GAS PRODUCTION

To ensure the only pathway for naturally occurring oil and gas to escape from the host rock in which it is entrapped is via a controlled steel lined and cased well drilled by the Producer.

PURPOSE OF FRACGING

To facilitate the migration of the oil and gas towards the well drilled by the Producer.

WHAT IS FRACGING

“Fracking” is a technology first used 65 years ago which uses water under pressure to create tiny fractures (pathways) in the host rocks. To keep the fractures open (given the weight of the overburden and lateral stress) proppants (sand or beads) are used to “chock” open the fractures. A small amount of additives (around 0.5%) are used to increase viscosity (decrease friction) increasing the efficiency of the water blast. These additives are in lesser concentration than appears in generally available household products.

WHY FRACC

Fracking is used where the host rock in which the oil and gas is entrapped is so dense (low porosity, low permeability etc.) that it is difficult for the gas or oil to migrate through it at commercial rates.

HOW WIDESPREAD IS FRACGING

Approximately half (50%) of the world’s oil and gas production is produced from host rock which has been fracture-stimulated.

HOW SAFE IS FRACGING - ENVIRONMENTALLY

In the USA, the EPA has reported no incident of fracking causing any damage to aquifers or ground water from the last 1 million fracc’s¹ (see attached). In the Northern Territory fracking will occur 2-3km below the surface. The weight of that overburden helps in keeping the oil and gas entrapped. To put it in perspective, militarily is the best bunker busting technology can penetrate up to around 15 meters. It stretches credulity to imagine there is a real risk that targeted water blasting within a host rock could be vertically capable of being 100 times more efficient than military technology.

WHY IS FRACGING NEEDED IN N.T.

The only onshore presently producing basin in the Northern Territory is the Amadeus Basin which geologically is comparatively ancient (Ordovician – i.e. over 450 million years old). It is highly fractured with relatively low porosity and low permeability at around 2km of depth. As a result (like in the Cooper Basin) Mereenie, Palm Valley and Dingo were all fracture-stimulated over 30 years ago to enable production. These fields remain one of the prime sources of electricity

¹ Article in The Australian Financial Review dated May 23, 2014 – Page 9

generated in the Northern Territory and the Alice Springs to Darwin pipeline provided one of the catalysts for the subsequent rapid growth of the Territory, both economically and in employment terms. There has been no environmental impacts associated with these fracture stimulations.

POTENTIAL GROWTH

The Territory has been relatively under-explored due to the tyranny of distance, low prices and lack of infrastructure. With the mooted gas shortage on the Australian Eastern states, the gas pricing signals are stimulating the exploration efforts and the markets for any gas so discovered. Oil prices remain high at around \$100/bbl again providing a “once in a generation” window of opportunity for the Northern Territory to exploit. Geologically this opportunity depends on fracture-stimulation continuing.

ADVANTAGES OF NATURAL GAS

“Inherent Advantages of Natural Gas;

Natural gas is a clean burning energy source offering significant environmental and cost advantages over other fossil fuels. Natural gas is viewed as an efficient, environmentally friendly energy source that will play a major role in future power generation and industrial development in Australia and South East Asia.

Natural gas combines with oxygen on burning to release heat, carbon dioxide and water, as with all other fossil fuels such as coal, petrol and diesel. However, the burning of natural gas releases by far the least amount of carbon dioxide of equivalent energy released. Of the four common primary fossil fuel energy sources, natural gas emits 55 kilograms of carbon dioxide per gigajoule (GJ) of energy produced compared to 68, 91 and 95 kilograms of carbon dioxide for petroleum, black coal and brown coal respectively. With ever increasing pressure to reduce or contain greenhouse gas emissions (of which carbon dioxide is the principal gas) following the Kyoto Protocol of the Framework Convention on Climate Change agreed to in December 1997, natural gas has significant comparative advantage for use in electrical power generation. In addition, the burning of natural gas produces little particulate matter and no fly ash as is produced with the burning of coal. The burning of gas as opposed to the burning of coal contributes significantly to the improvement of local air quality.”²

HYDROCARBONS GENERALLY:

Oil and gas are an essential ingredient in;

1. Food production – Fertiliser
2. Clothing – Nylons
3. Transport - Aviation fuel, Trucking, Shipping
4. Manufacturing - plastics which lighten cars and increase fuel efficiency;

² (Source: Research Paper No. 5 1997-98 “Roarty M: Natural Gas: Energy for the New Millennium”, The Department of the Parliamentary Library, 1998).”

All of which cannot presently be substituted by renewables.

WHERE TO FROM HERE

Industry, government and CSIRO have jointly hosted community information workshops in Western Australia and the Northern Territory. This important collaboration aims to work with local communities listening to and addressing their concerns – and identify sources of information they can trust.

Regulation on the composition and bio-degradability of chemicals within fracking fluids may alleviate community concerns.

Budget news bad for retail

Sue Mitchell

Retail sales slumped following last week's budget, confirming fears that a hit to consumer sentiment would cause many people to cut back spending.

Retail sales fell 5.1 per cent in the seven days after the budget following a 4.6 per cent drop in the week beforehand, according to the Australian Retail Index.

By comparison, overall retail sales rose 1.8 per cent in the week after the 2013 budget and 5 per cent after the 2012 budget, according to the index.

The Retail Index, launched last month by accounting and advisory firm BDO and cloud-based software provider Retail Express, tracks retail spending across four categories on a weekly basis.

It was designed to allow retailers timely access to data to help compare their performances against the market.

BDO's national retail lead partner, Simon Scalzo, said the 5.1 per cent drop in overall spending was significant and showed shoppers voted with their feet.

"It is clear how they have reacted to the budget – put simply, very badly. They have given the government a big 'thumbs down' by staying away from retail stores," he said.

"There is concern, a decided sense of unease and with it a reluctance to spend."

The biggest drop in post-budget spending was in fashion and accessories, where sales slumped 20.2 per cent.

Sporting and recreational goods sales slipped 1 per cent and sales in furniture and home ware bucked the trend, rising 6.5 per cent.

But in other general retail, which covers categories outside fashion, sporting goods and home ware, sales fell 5.7 per cent.

Official Bureau of Statistics retail sales figures for the month of May will

Key points

Retail sales fell 4.6 per cent in the week before this year's budget and 5.1 per cent in the week after.

Smaller retailers fear cuts announced in the budget will cause consumers to go on a spending strike.

not be released until next month.

Major retailers have been playing down the likely impact on spending of the tough budget measures, which included cuts to family welfare payments, a deficit levy, higher petrol taxes and higher costs for tertiary education.

However, smaller retailers fear the budget cuts will prompt consumers to go on a spending strike. Consumer confidence has fallen at the fastest rate since 2008, dropping 14 per cent in the past four weeks, the ANZ-Roy Morgan Consumer Confidence report shows.

The Westpac-Melbourne Institute index slumped 6.8 per cent to 92.9 points as consumers reacted unfavourably to the budget.

"It is quite clear that the retail shop front has really taken quite a significant downturn," Mr Scalzo said.

While unseasonably warm weather has hurt sales of clothing, he believed the 5.1 per cent slump in overall spending after the budget could not be solely attributed to the weather.

"A 5 per cent slump overall is significant and it means that it has absolutely had an effect. It's nowhere near had this effect historically."

"It remains to be seen whether government attempts to 'sell' the budget will produce any turnaround, but at this early stage it appears unlikely in the short term," he said.

Trip to the light fantastic

Vivid Aquatique water theatre from France will return to Darling Harbour as part of Vivid Sydney 2014, the winter festival of lights, music and ideas that starts on Friday and continues until June 9.

PHOTO: WOLTER PEETERS



US shale expert urges speed on fracking

Simon Evans

A United States expert on hydraulic fracturing has warned that Australian companies and regulators may miss the opportunity to fully extract the value of the developing shale gas industry if they are too slow and cautious because of the commercial dynamics of the global gas sector.

Christine Ehlig-Economides, who worked for \$US130 billion (\$140 billion) oilfields services giant Schlumberger for 20 years and is now a professor of petroleum engineering at Texas A&M University deep in the heart of US oil and gas territory, said Australia "may not be able to afford to take too long" in developing the sector.

She said while it was important to have public confidence and no environmental slip-ups in developing the shale gas industry, there also needed to be some speed in developing the sector to enable Australia to generate maximum economic advantage.

Dr Ehlig-Economides has just finished a two-day industry roundtable with regulators from across Australia

and representatives from companies including Santos, INPEX Corp, Linc Energy and Boart Longyear.

She said Australian authorities and companies should take comfort from the track record of companies in the shale gas industry in the United States, where more than 1 million wells have been drilled, claiming that the US Environmental Protection Agency had no record of this resulting in the contamination of aquifers. "They have no record of hydraulic fracturing interacting into water wells," she said in Adelaide on Thursday.

There has been a storm of opposition from environmental, community and farming groups in NSW to hydraulic fracturing, commonly known as fracking, with a particular focus on Santos and its push to drill up to 850 wells in the Pilliga forest region in northern NSW to supply gas to NSW.

Fracking is a technique used to extract gas by pumping a mixture of water and chemicals into oil or gas-bearing rocks underground to trigger fracturing of shales or coal seams so that gas is released.

Dr Ehlig-Economides, who was brought to Australia by engineering firm Fyfe for the roundtable with industry players, said one of the issues for Australia was the higher costs of drilling wells because of the deeper shales and higher temperatures encountered, compared with the US.

"The cost of entry here is high," she said, noting that the average cost of drilling a well in the US was about \$8 million. Depending on the specifics of the area and access to infrastructure and rigs, it could be almost double that price in Australia.

Dr Ehlig-Economides said regulators and companies in Australia needed to ensure a strong safety and environmental record to improve public confidence in fracking, and said there were factors that would be specific to each well drilled.

She also took a swipe at the 2010 US documentary *Gasland*, which was nominated for an Academy Award. The documentary is highly critical of fracking, but she said it misrepresented the situation in an industry where there are many different political agendas.