Independent Scientific Panel Inquiry
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Dear Panel Members

Independent Scientific Panel Enquiry into Hydraulic Fracture Stimulation in Western Australia 2017.

I am a long-term Broome resident and business owner/operator and I support hydraulic fracturing.

Hydraulic Fracturing

The Kimberley has a long history of oil and gas activity. Wells have been drilled in the Kimberley since the 1920's and the industry has been an important contributor to the region for almost 100 years.

As stated in the Inquiry's background papers, more than 600 wells have undergone hydraulic fracture stimulation in Western Australia in conventional reservoirs since 1958. The first hydraulic fracture stimulation in Western Australia was conducted in that year on the Goldwyer 1 well 100 km southeast of Broome. Fracture stimulation or re-fracturing has been conducted on 563 wells on Barrow Island since 1965.

The Society of Petroleum Engineers estimates that 2.5 million hydraulic fractures have been undertaken worldwide, with over 1 million in the United States. Additionally, tens of thousands of horizontal wells have been completed over the past 60 years. In recent times, hydraulic fracturing has been carried out in the Kimberley by Buru Energy Ltd at the Yulleroo 2 well in 2010, and at the Valhalla North 1 and Asgard 1 wells near Noonkanbah community in 2015, with no environmental consequences.

Water

Water is a resource that should be regulated, but this does not mean that it cannot be utilised for industry. The reality is that in the Kimberley water is not a scarce resource – it receives an extraordinary amount of rainfall each year and aquifers are replenished.

Water usage of hydraulic fracturing is governed by the Department of Water and Environmental regulation.

The *Rights in Water Irrigation Act 1914* provides for a licensing system to take water and construct water wells in proclaimed areas from artesian sources, all water used in the hydraulic fracturing process that is derived from aquifers requires a licence.
The Canning Basin is considered the second largest groundwater resource in Australia after the Great Artesian Basin. It is a large sedimentary basin covering an onshore area of more than 450,000 km2. The surface groundwater aquifers which comprise the defined resource and from which all groundwater is presently sourced in the region, varies spatially across the basin. Sustainable groundwater yield from all the surficial potable aquifers in the basin combined has been estimated at between 615,000 mega litres a year and 827,000 mega litres a year.

Current consumption of groundwater in the Canning basin, primarily by the township of Broome and Derby, is estimated to be 33,134 mega litres a year which is less than 4% of the annual sustainable yield.[i] This means that there is a huge amount of water that could be sustainably used for other purposes.

Water usage for a hydraulic fractured well is estimated to be around 30ML. This is an amount that is sustainably resourced without affected water supplies for other users in the Kimberley.

Chemicals Usage

It is a common claim by activists that chemicals used in hydraulic fracturing are toxic and secretive. This is another misleading claim by activists that I am aware is not true and accordingly I am not concerned that hydraulic fracture stimulation will damage aquifers, especially when combined with modern well construction techniques.

Regulation 15(9) of the *Petroleum and Geothermal Energy Resources (Environment) Regulations 2012* requires companies to declare chemicals used down wells. The disclosure occurs in an Environment Plan that must be approved by the regulator using a number of assessment methods to ensure activities have a low impact to the environment. The list of chemicals is publicly available on DMIRS website within the required Environment Plan.

Buru Energy's website listed the chemicals they intended to use. Haliburton's Cleanstim HF Fluid was to be used for the 2014 program. The website mentioned that the fluid and its breakdown products were biologically tested in a nationally accredited laboratory testing program. The tests used rainbow fish from the Fitzroy River and concluded there was no effect on fish even at twice the concentration

classified as “very slightly toxic”, meaning that the fluid was non-toxic. None of the chemicals were classified as carcinogens or teratogens, and do not accumulate in the environment.[ii]

On the issue of chemicals, I note the conclusions of the Yawuru (native title holders around Broome) expert group reviewing Buru Energy’s Environment Plan for the TGS program that:

- The overall conclusion is that the TGS14 EP is comprehensive and meets both the structural and content requirements outlined in the EP Guidelines.

- The overall findings that the impacts and risks associated with down-hole chemicals are limited (and that Buru Energy’s controls are sufficiently protective) are reasonable and appropriate.

- Human exposures to the chemical additives, particularly for community members away from the occupational setting where the hydraulic fracturing is being conducted, are limited and would not be expected to produce adverse health impacts.[iii]

Positive Contributor to the Kimberley

As with many rural economies, job opportunities in the Kimberley are limited so when companies are willing to invest and employ in the region they should be supported.

The Kimberley faces significant social issues, and one means to address these social issues is by providing people with long term employment. Job creation needs to occur across several sectors and the oil and gas industry will be an important contributor to providing jobs to people within Broome and in the remote areas where the onshore oil and gas explorers operate. Without hydraulic fracturing the tight gas cannot be unlocked, and onshore production of gas would not be able to occur.

I have attended most of the public forums on hydraulic fracturing and as a previous Councillor with the Shire of Broome was privy to briefings and discussions with the Department of Mines and Petroleum about the process of the extraction of tight gas. Additionally, I was heavily involved with the proposed LNG Processing Precinct at James Price Point and experienced first hand the depths that activists will go to in trying to convince those living in the area and further afield of their flawed interpretation of the impacts of resource extraction and processing and other projects. Their scare tactics are reprehensible and cause significant societal and economic damage unnecessarily and continue to go unchecked.

I hope that the inquiry ignores the rantings of the activists, and notes that hydraulic fracture stimulation is a safe process long governed by a robust regulatory regime and could have considerable long-term benefits for the Kimberley region.

[i] P 44, Buru Energy EPA referral.
[ii] Buru Energy EPA referral, attachment II.
[iii] http://www.yawuru.com/wp-content/uploads/2014/07/Yawuru-Expert-Group-Consolidated-Report-on-Buru-Energys-TGS14-program-ID-48650.pdf