



PANGAEA
RESOURCES PTY Ltd.

20 June 2014

The Commissioner
Hydraulic Fracturing Inquiry
GPO Box 4204, Darwin NT 0801

via online submission

Dear Dr Hawke,

Pangaea welcomes the opportunity to make a submission on the *Inquiry into Hydraulic Fracturing in the Northern Territory*.

Pangaea is a member of APPEA and the NT Onshore Operators Forum, which consists of 15 petroleum exploration companies in various stages of the upstream exploration phase. The majority of these companies are exploring for shale resources in the Northern Territory (NT).

Pangaea holds tenements in a geological feature called the Greater McArthur Basin, which the Northern Territory Geological Survey has recognised as having vast potential for shale resources.

About Pangaea

Established in 1997, Pangaea is an independent Australian exploration and production company with a diverse portfolio of oil and natural gas operations across onshore Australia.

Pangaea has built a diverse professional team covering all major disciplines including highly regarded and internationally renowned geoscientists, and engineers with vast knowledge and experience of exploration and drilling in Australia's petroleum basins.

Pangaea employs a collaborative approach in all our activities. We believe our stakeholders, including our employees, partners, local communities, service providers, government and regulatory bodies, all have the shared objective of safely developing Australia's energy resources.

Our exploration approach usually commences with airborne magnetic and gravity surveys to identify favourable areas with petroleum potential and to focus seismic surveys. This is followed by well-designed, culturally and environmentally-conscious seismic surveys and, if warranted, drilling programs. These are all undertaken in consultation with local stakeholders.



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Ultimately, we seek to produce energy resources through proven, safe exploration and engineering operations whilst continuously incorporating state-of-the-art methodologies in order to achieve a high standard of operating excellence.

Pangaea's interests in the Northern Territory

Pangaea holds exploration permits (EP) 167, 168 and 169 located 450 km south of Darwin, adjacent to the towns of Elliot and Katherine in the Northern Territory, and EP 198 and EP(A) 305 located in the northeastern Victoria River/Birrindudu Basins approximately 600 km south of Darwin near the town of Yarralin.

The eastern portions of these permits are traversed by the Stuart Highway, the Darwin-Tarcoola Rail Track and the Amadeus Gas Pipeline. These three blocks are within the Greater McArthur Basin which contains thick sequences of organic rich source rocks (shale) capable of generating significant quantities of oil and natural gas.

Pangaea completed the initial phase of its exploration program in 2013, with approximately 29,000 km of Full Tensor Gravity Gradiometry survey and 1,400 km of 2D seismic acquisition. The next phase of this exploration program has commenced with the drilling of the first of three stratigraphic/exploratory wells in 2014.

The Economic Benefits of the Oil & Gas Industry for Territorians

The oil and gas industry is already a major contributor to Australia's current prosperity in numerous ways, including: investment, direct and indirect job creation, regional development, export revenue, and taxation.

The development of the industry in the Northern Territory provides a similar opportunity for Territorians for generations to come. Within five years we believe the industry could add over \$0.5 billion to the size of the NT economy (GDP) – growing the number of well-paid local jobs, taxes and royalties to pay for government-provided community services, and direct opportunities for other businesses.

Our experience to date is consistent with this potential. For example, when conducting our operations we have seen the increased use of local service providers, flight services, restaurants, entertainment, hotels, petrol stations and many other observable benefits for Territorians.



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Regulation of the Oil & Gas Industry

We believe that the economic benefits and revenue opportunities are there to be captured and can be delivered to Territorians through established regulations, guidelines and policies that protect the environment while encouraging current and new investments in the development of the industry. Natural resources and the agricultural/pastoral industries have historically been the major drivers of economic development in the Territory and the two industries have generally enjoyed cooperative coexistence.

In advancing Pangaea's exploration projects we recognise that Territorians naturally seek assurances that our exploration and development practices are safe and environmentally sound. Our experience from discussions with individuals, groups and at APPEA-led information forums has shown that Territorians want, and appreciate, balanced, fact-based dialogue and understanding about these "good oil field practices" -- so that they can make up their own mind on the efficacy of these practices.

Pangaea supports regulations that ensure these good oil field practices are implemented consistently: including regulations not only on the use of hydraulic fracturing but also well construction and completion standards, use and monitoring of water, single and multi-well pad design, and other good oil field practices. In so doing, we believe that Territorians generally would welcome the development of the industry through the confidence this regulation engenders, and the widespread benefits that it delivers.

Pangaea welcomes the opportunity to engage further with The Commissioner and provide any additional information to support the Inquiry.

Yours sincerely

Joel Alnes
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Pangaea Resources Pty Ltd