

SCIENTIFIC INQUIRY INTO HYDRAULIC FRACTURING IN THE NORTHERN TERRITORY



Department of Environment
and Natural Resources
Submission #428

Joanne Townsend
Department of Environment and Natural Resources
PO Box 496
PALMERSTON NT 0830

By email: [REDACTED]

Dear Ms Townsend

RE: HYDRAULIC FRACTURING INQUIRY – INFORMATION REQUEST

I refer to the *Scientific Inquiry into Hydraulic Fracturing of Unconventional Reservoirs in the Northern Territory (the Inquiry)*, which was established by the Northern Territory Government under the *Inquiries Act 1945 (NT)* in late 2016 to investigate the impacts and risks of hydraulic fracturing of onshore shale gas reservoirs and associated activities on the environmental, social, economic and cultural conditions in the Northern Territory.

The Inquiry has identified a number of issues requiring further input from the Department of Environment and Natural Resources (**DENR**).

1. Environment reform agenda

The Inquiry's Terms of Reference require the Panel to identify the:

“scientific, technical, policy or regulatory requirements or resources that are in addition to the reforms being implemented through the existing environmental reform process that are necessary to reduce environmental risks and impacts associated with the hydraulic fracturing of unconventional reservoirs to acceptable levels.”¹

In that regard, the Inquiry notes DENR's *Environmental Regulatory Reform Discussion Paper* dated May 2017 (**Discussion Paper**) and seeks further information on the nature and extent of the proposed reforms.

(a) Territory Environmental Objectives

¹ Terms of Reference, cl 5.

DENR proposes to support the new environmental assessment system with a framework of Territory Environmental Objectives (TEO).² The TEOs appear to form a key part of the regulatory framework, including to:

1. assist in determining what impacts are “significant”;³
2. assist proponents undertake self-assessment;⁴ and
3. “*focus the decision made by the Minister to approve or refuse a development proposal.*”⁵

The Inquiry understands that draft TEOs have been developed.⁶ Please provide a copy of these to Inquiry.

The Discussion Paper indicates that TEOs will be established by the Minister pursuant to a process set out in new legislation. Thereafter the TEOs will be gazetted.⁷ Please comment on:

- the reasons why the TEOs are not enshrined in legislation (it appears relatively easy for the Minister to amend them, which may make them susceptible to political interference and regulatory capture);
- the matters, if any, the Minister must take into account to develop the TEOs; and
- the consultation process the Minister must undertake and how s/he will take into account the views of Aboriginal people.

(b) Significant impact

DENR states that the new environmental assessment system will:

*“ensure actions that are likely to have a significant impact on the environmental will undergo environmental impact assessment.”*⁸

The Inquiry notes that the “significance” of an impact will be measured by reference to the TEOs,⁹ as well as by:

*“applying the precautionary principle; drawing on traditional knowledge; using scientific knowledge to the exclusion of public concern etc.”*¹⁰

Please indicate whether the development of unconventional gas resources (including any of the individual activities that form part of the development, such as seismic activities, road construction, well drilling, hydraulic fracturing and pipeline construction) will be deemed to have a “significant impact” and

² Discussion Paper, p9.

³ Discussion Paper, p6.

⁴ Discussion Paper, p10.

⁵ Discussion Paper, p10.

⁶ Discussion Paper, p10.

⁷ Discussion Paper, p10.

⁸ Discussion Paper, p5.

⁹ Discussion Paper, p6.

¹⁰ Discussion Paper, p6.

therefore require assessment under the revised environmental assessment legislation.

Please also indicate whether there will be a “hard trigger” for shale gas development or any of the individual activities that comprise it.

(c) Assessment options

The Inquiry has identified the importance of strategic and bioregional assessments. DENR note that the new environmental assessment system will:

*“provide a range of assessment options reflecting the degree of risk and potential impacts of actions”.*¹¹

One of the proposed assessment options is “strategic environmental assessments”.¹² Please comment on whether:

- shale gas development will require a strategic environmental assessment, and if so, what such an assessment will entail in practice (specifically, will bioregional assessment form part of a strategic environmental assessment?);
- DENR is aware of other jurisdictions (including in Australia or overseas) that require strategic environmental assessment as a precursor to shale gas development; and
- under the new environmental assessment legislation, the requirement for a strategic impact assessment will obviate the need to undertake a project level assessment.

(d) Environmental Protection Act

The Inquiry seeks clarification on how environmental impacts and risks that fall below the level of “significant” will be assessed and managed following Stage 2 of the reform agenda.

The Discussion Paper provides that project approvals given under mining and petroleum legislation:

*“will no longer contain requirements for managing the environmental impacts of the project.”*¹³

This reflects Government’s commitment to:

*“transfer all environmental approval, assessment, oversight and enforcement powers to the Department of the Environment and the Environmental Protection Authority”.*¹⁴

¹¹ Discussion Paper, p5.

¹² Discussion Paper, p8, 11.

¹³ Discussion Paper, p5.

¹⁴ *Healthy Environment, Strong Economy, A Territory Labor Policy Paper*, p 12 (available at <https://territorylabor.com.au/Labors-Plan/Environment> last accessed 2 August 2017).

The Discussion Paper then states, however, that:

*“environmental impacts of projects that do not go through the assessment system will be managed under the new environment protection act and other legislation designed to deliver good environmental outcomes.”*¹⁵

Please describe how activities that have environmental impacts and risks that fall *below* the level of “significant” will be managed under the new environmental protection legislation to be developed in Stage 2. Environmental impacts and risks associated with petroleum activities are currently regulated under the *Petroleum (Environment) Regulations 2016* (NT). Those regulations require assessment and approval of *all* activities that have *any* environmental impact or risks, regardless of the significance of the potential impacts. Will this framework be replicated in the new legislation?

Please comment on the agency that will administer the legislation.

(e) Access to justice

The Discussion Paper indicates that DENR is considering allowing limited third parties the right to appeal decisions.¹⁶ Now that consultation on the Discussion Paper has closed, please advise DENR’s current policy position on the review processes to be included in the new environmental assessment legislation.

(f) Timing

Please advise the timing of the proposed regulatory agenda, including when will reforms be complete.

Please comment on how the government proposes to regulate the onshore unconventional shale gas industry during the period of regulatory reform.

2. Environmental bonds

Government has committed to ensuring that “environmental bonds are appropriate”.¹⁷ Financial assurances are currently required under the *Waste Management and Pollution Control Act* and the Department of Primary Industry Resources (**DPIR**) also requires environmental rehabilitation bonds to be provided under the *Petroleum Act*. The calculation of these bonds and other securities required under the *Petroleum Act* is outlined in the attached correspondence between the Inquiry and DPIR.

¹⁵ Discussion Paper, p5.

¹⁶ Discussion Paper, p20.

¹⁷ *Healthy Environment, Strong Economy, A Territory Labor Policy Paper*, p 12 (available at <https://territorylabor.com.au/Labors-Plan/Environment> last accessed 2 August 2017).

Please comment on how environmental rehabilitation securities for the onshore unconventional gas industry will be managed, and by which agency, following completion of Stage 1 and 2 of the regulatory reform agenda.

3. Information about shale basins

DENR has provided the Inquiry with references to various *primary* sources of information relating to shale basins in the Northern Territory.¹⁸ The Inquiry requests an overview, or summary, of this information, including an overview of current hydrological, hydrogeological and terrestrial environment knowledge in shale basins other than the Beetaloo. This is required to better understand the amount of baseline information that still needs to be obtained in order to undertake an informed risk assessment.

DENR's submission indicated that collated information on the groundwater resources for the Daly, Wiso and Georgina Basins would be published in June 2017.¹⁹ Please advise when these reports will be available.

4. Recharge rates

The Inquiry has the following comments and queries regarding sustainable yields and recharge rates in the Beetaloo Sub-basin.

1. How will DENR arrive at a sustainable yield for an aquifer system that covers the Beetaloo Sub-basin and beyond?
2. DENR has provided three estimates of the recharge rate of the Cambrian Limestone Aquifer (**CLA**), ranging from 100,000 ML/y to 330,000 ML/y.²⁰ Do these rates account for uncertainty and, if so, is this considered to be acceptable without further work being required to reduce the spread?
3. The recharge estimates appear to be relevant to the northern region of the CLA around Daly Waters and Mataranka. Please provide further comment on the likely recharge rates in the region south of Daly Waters and closer to Elliott.

5. Faulty wells

DENR submitted that, in order to address concerns regarding aquifer contamination due to faulty or leaking wells:

“it is critical that an adequate hydrogeological investigation is undertaken to inform minimum construction requirements and risks; and to establish baseline

¹⁸ DENR letter dated 12 May 2017.

¹⁹ DENR, submission 230, p 5.

²⁰ Interim Report, p 48.

information as the basis for the design of any subsequent monitoring program.”²¹

Please describe:

- in detail, a hydrogeological investigation that would be considered “adequate”, including who would undertake the investigation (government or industry);
- the role that DENR and DPIR have in enforcing and monitoring the implementation of such an investigation;
- the compliance and enforcement mechanisms available to the regulator to ensure the investigation is undertaken to appropriate standards; and
- the actions that could be taken by government in the event a contamination plume was detected around a well.

6. Flood events

To the extent possible please provide information regarding the frequency and severity of extreme weather events, such as floods, in the Beetaloo Sub-basin and other prospective shale gas regions. This information is required to assess the potential for flooding or overtopping of surface containments.

7. Groundwater pressure

In the event groundwater is used for hydraulic fracturing, the Panel understands that groundwater pressures may change. The changes may be enough to impact groundwater flow pathways, and, potentially, water quality.

Please advise if there has been any site-specific hydraulic modelling of the local groundwater systems in the Beetaloo Sub-basin, and, if so, whether it can be demonstrated that, if groundwater in that region is used for hydraulic fracturing, there will be no adverse impacts on groundwater quality and quantity in surrounding areas.

8. Groundwater depended ecosystems

Groundwater dependent ecosystems (**GDE**) that are dependent on groundwater flows from the CLA are in the Roper River (Elsey NP, Mataranka thermal pools, Red Lilly lagoon, Riparian Vegetation along the Roper) and the Daly River. DENR submitted that it is unlikely that there are GDE in the Beetaloo Sub-basin because the aquifer in this region is greater than 30m and there are no connections to the surface. Please indicate DPIR’s confidence in this conclusion.

²¹ DENR, submission 230, p 8.

Please also indicate whether there have been any surveys looking for:

- (a) a surface expression of the aquifer;
- (b) studies/surveys of the location, prevalence and ecology of temporary waterbodies and GDE; or
- (c) stygofauna.

9. Surface water resources

Please provide the Inquiry with an assessment of the location, duration and frequency of surface water resources in the Beetaloo Sub-basin over the past 30 years. The Panel understands that it is possible to achieve this using satellite imagery (Landsat).

10. Strategic development

The Inquiry has received submissions to the effect that landholders, regional communities and the industry regulator in Queensland were not prepared for the fast and intense development of the coal seam gas industry in that State.

Since the “invasion” (as some stakeholders have described it) of the coal seam gas industry in Queensland in 2010, the Queensland government has, among other things:

- introduced and subsequently updated a Land Access Code under the *Mineral and Energy Resources (Common Provisions) Act 2014* (Qld);²²
- established the GasFields Commission Queensland as an independent statutory body to, among other things, facilitate better relationships between landholders, regional communities and the onshore gas industry;²³
- introduced a Bill for the establishment of a Land Access Ombudsman, which is intended to be an independent body to help landholders and gas companies resolved alleged breached of land access agreements;²⁴
- established the Office of Groundwater Impact Assessment, which is an independent statutory body to support the management of groundwater impacts from petroleum and gas development;²⁵ and
- developed a Gas Action Plan, which the Inquiry understands will be released shortly.²⁶

²² See https://www.dnrm.qld.gov.au/_data/assets/pdf_file/0004/442633/land-access-code-2016.pdf (last accessed 26 July 2017).

²³ See <http://www.gasfieldscommissionqld.org.au/about-us/> (last accessed 26 July 2017).

²⁴ See <https://www.dnrm.qld.gov.au/our-department/corporate-information/policies-initiatives/land-and-property-initiatives/land-access-ombudsman> (last accessed 26 July 2017).

²⁵ See <https://www.dnrm.qld.gov.au/ogia/role> (last accessed 26 July 2017).

²⁶ See <https://www.dnrm.qld.gov.au/our-department/corporate-information/policies-initiatives/mining-resources/gas-supply-demand-action-plan> (last accessed 26 July 2017).

The mechanisms listed above were introduced after development of the industry commenced. The Inquiry has received submissions that the coal seam gas industry would have been in a better position to earn and maintain a social licence to operate had some, or all, of the measures listed above been in place prior to the coal seam gas “boom”.

The Inquiry seeks DENR’s comment on this statement and these measures. Please describe any measures, including the measures adopted in Queensland, or in any other jurisdiction (whether subject to a moratorium on hydraulic fracturing or not, and including overseas jurisdictions, for example, Alberta, Canada, and Pennsylvania, USA), that DENR considers will provide a foundation upon which the industry can earn a social licence.

In order to meet current reporting timeframes, could I please have your response no later than **25 August 2017**. Please also note that your response will be published on the Inquiry’s submission library. To the extent your submission includes confidential information that should not be publicly disclosed, please identify that information and explain why it is confidential so that I can consider that request.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Rachel Pepper', with a stylized, sweeping flourish.

THE HON JUSTICE RACHEL PEPPER
Chair

8 August 2017