

LEGISLATIVE ASSEMBLY OF THE NORTHERN TERRITORY

WRITTEN QUESTION

Mr Guyula to the Minister for Primary Industry and Resources:

State of Pennsylvania fracking activities

How does the Minister propose to avoid regulatory mismanagement impacts and drinking water contamination for Territory landholders and communities as occurred in Pennsylvania?

The Scientific Inquiry into Hydraulic Fracturing in the Northern Territory (the Inquiry) assessed the risks of any onshore gas industry in the Northern Territory having unacceptable effects on the Territory's water resources.

The Government is implementing all of the 135 recommendations made by the inquiry. These recommendations will strengthen regulation and ensure accountable industry practice. The Government's plan detailing how it will implement each of these recommendations was released on 17 July 2018.

A number of these recommendations were made by the Inquiry to specifically safeguard the Territory's water resources.

These recommendations are as follows:

Recommendation 7.1

That the Water Act be amended prior to the grant of any further exploration approvals to require gas companies to obtain water extraction licences under that Act.

Recommendation 7.2

That the Government introduces a charge on water for all onshore shale gas activities.

Recommendation 7.3

That the Australian Government amends the EPBC Act to apply the 'water trigger' to onshore shale gas development.

Recommendation 7.4

That the Government develops specific guidelines for human health and environmental risk assessments for all onshore shale gas developments consistent with the National Chemicals Risk Assessment framework, including the national guidance manual for human and environmental risk assessment for chemicals associated with CSG extraction.

Recommendation 7.5

That before any further production approvals are granted, a regional water assessment be conducted as part of a SREBA for any prospective shale gas basin, commencing with the Beetaloo Sub-basin. The regional assessment should focus on surface and groundwater quality and quantity (recharge and flow), characterisation of surface and groundwater-dependent ecosystems, and the development of a regional groundwater model to assess the effects of proposed water extraction of the onshore shale gas industry on the dynamics and yield of the regional aquifer system.

Recommendation 7.6

That prior to the grant of any further exploration approvals, the use of all surface water resources for any onshore shale gas activity in the NT be prohibited.

Recommendation 7.7

That in relation to the Beetaloo Sub-basin:

- the Daly-Roper WCD be extended south to include all of the Beetaloo Sub-basin;
- that WAPs be developed for each of the northern and southern regions of the Beetaloo Sub-basin;
- the new northern Sub-basin WAP provides for a water allocation rule that restricts the consumptive use to less than that which can be sustainably extracted without having adverse impacts on other users and the environment; and
- the southern Sub-basin WAP prohibits water extraction for any onshore shale gas production until the nature and extent of the groundwater resource and recharge rates in that area are quantified.

That in relation to other shale gas basins with similar or greater rainfall than the Beetaloo Sub-basin, WCDs be declared and WAPs be developed to specify sustainable groundwater extraction rates for shale gas production activities that will not have adverse impacts on existing users and the environment.

That in relation to other potential shale gas basins in semi-arid and arid regions, all groundwater extraction for any shale gas production activities be prohibited until there is sufficient information to demonstrate that it will have no adverse impacts on existing users and the environment.

Recommendation 7.8

That the following measures be mandated to ensure that any onshore shale gas development does not cause unacceptable local drawdown of aquifers:

- that prior to the grant of any further exploration approvals, the extraction of water from water bores to supply water for hydraulic fracturing be prohibited within at least 1 km of existing or proposed groundwater bores (that are used for domestic or stock use) unless hydrogeological investigations and groundwater modelling, including the SREBA, indicate that a different distance is appropriate, or if the landholder agrees to a variation of this distance;
- that relevant WAPs include provisions that adequately control both the rate and volume of water extraction by the gas companies;
- that gas companies be required, at their expense, to monitor drawdown in local water supply bores; and
- that gas companies be required to immediately 'make good' and rectify any problems if the drawdown is found to be excessive.

Recommendation 7.9

That prior to the grant of any further exploration approvals, the reinjection of wastewater into deep aquifers and conventional reservoirs and the reinjection of treated or untreated wastewaters (including brines) into aquifers be prohibited, unless full scientific investigations determine that all risks associated with these practices can be mitigated.

Recommendation 7.10

That prior to the grant of any further exploration approvals, the following information about hydraulic fracturing fluids must, as a matter of law, be reported and publicly disclosed before any exploration activities and production activities are carried out:

- the identities, volumes and concentrations of chemicals (including environmentally relevant chemical species present as contaminants in the bulk chemicals) to be used;
- the purpose of the chemicals;

- how and where the chemicals will be managed and transported on-site, including how spills will be prevented, and if spills do occur, how they will be remediated and managed; and
- the laws that apply to the management of the chemicals and how they are enforced.

That the following information about flowback and produced water must be reported and publicly disclosed online as soon as it becomes available:

- the identity and concentrations of chemicals and NORMs found in that water;
- how and where the chemicals and NORMs will be managed, transported and treated, including how spills will be prevented, and if spills occur, how they will be remediated and managed; and
- the laws that apply to the management of the chemicals and NORMs and how they are enforced.

Recommendation 7.11

That prior to the grant of any further exploration approvals, in order to minimise the risk of groundwater contamination from leaky gas wells:

- all wells subject to hydraulic fracturing must be constructed to at least Category 9 (or equivalent) and tested to ensure well integrity before and after hydraulic fracturing, with the integrity test results certified by the regulator and publicly disclosed online;
- a minimum offset distance of at least 1 km between water supply bores and well pads must be adopted unless site-specific information of the kind described in Recommendation 7.8 is available to the contrary;
- where a well is hydraulically fractured, monitoring of groundwater be undertaken around each well pad to detect any groundwater contamination using multilevel observation bores to ensure full coverage of the horizon, of any aquifer(s) containing water of sufficient quality to be of value for environmental or consumptive use;
- all existing well pads are to be equipped with multilevel observation bores (as above);
- as a minimum, electrical conductivity data from each level of the monitor bore array should be measured and results electronically transmitted from the well pad site to the regulator as soon as they are available. The utility of continuous monitoring for other parameters should be reviewed every five years or as soon as advances in monitoring technology become commercially available; and
- other water quality indicators, as determined by the regulator, should be measured quarterly, with the results publicly disclosed online as soon as reasonably practical from the date of sampling. This monitoring regime should continue for three years and be reviewed for suitability by the regulator.

Recommendation 7.12

That prior to the grant of any further exploration approvals, to reduce the risk of contamination of surface aquifers from on-site spills of wastewater:

- the EMP for each well pad must include an enforceable wastewater management plan and spill management plan;
- enclosed tanks must be used to hold all wastewater; and
- the well pad site must be bunded to prevent any runoff of wastewater, and be treated (for example, with a geomembrane or clay liner) to prevent the infiltration of wastewater spills into underlying soil.

Recommendation 7.13

Upon a gas company undertaking any exploration activity or production activity, monitoring of the groundwater must be implemented around each well pad to detect any groundwater contamination, adopting the monitoring outlined in Recommendation 7.11. If contamination is detected, remediation must commence immediately.

Recommendation 7.14

That the Government, having regard to the measures detailed in Recommendation 5.5, undertakes a review to determine whether:

- restrictions need to be placed on the transport of hydraulic fracturing chemicals and wastewater during the wet season, particularly on unsealed roads, to avoid the risk of spills; and
- rail transport of some or all of the hydraulic fracturing chemicals and other consumables required, be used to avoid the risk of spills.

Recommendation 7.15

That gas companies must submit details of the locations of all faults that could compromise well integrity. The occurrence of any faults must be addressed in the well design plan submitted to the regulator for approval. The details of all faults and the well design plans must be publicly disclosed online as soon as they are available.

Recommendation 7.16

That appropriate modelling of the local and regional groundwater system must be undertaken before any production approvals are granted to ensure that there are no unacceptable impacts on groundwater quality and quantity. This modelling should be undertaken as part of a SREBA.

Recommendation 7.17

That prior to the grant of any further exploration approvals, the discharge of any onshore shale gas hydraulic fracturing wastewater (treated or untreated) to either drainage lines, waterways, temporary stream systems or waterholes be prohibited.

Recommendation 7.18

That to minimise the adverse impacts of any onshore shale gas infrastructure (roads and pipelines) on the flow and quality of surface waters, the Government must ensure that:

- landscape or regional impacts are considered in the design and planning phase of development to avoid unforeseen consequences arising from the incremental (piecemeal) rollout of linear infrastructure; and
- roads and pipeline corridors must be constructed to:
 - minimise the interference with wet season surface water flow paths;
 - minimise erosion of exposed (road) surfaces and drains; î ensure fauna passage at all stream crossings; and
 - comply with relevant guidelines such as the International Erosion Control Association Best Practice for Erosion and Sediment Control and the Australian Pipeline Industry Association Code of Environmental Practice 2009.

Recommendation 7.19

That the SREBA undertaken for the Beetaloo Sub-basin must take into account groundwater-dependent ecosystems in the Roper River region, including identification and characterisation of aquatic ecosystems, and provide measures to ensure the protection of these ecosystems.

Recommendation 7.20

That the Beetaloo Sub-basin SREBA must identify and characterise all subterranean aquatic ecosystems, with particular emphasis on the Roper River region.