

Analysis of the NT Government's Implementation of the Fracking Inquiry Recommendations

INTRODUCTION

The EDO has reviewed the Northern Territory (NT) government's implementation of the findings of the [Scientific Inquiry into Hydraulic Fracturing in the Northern Territory](#) conducted by the Hon. Justice Rachel Pepper (known as the **Pepper Inquiry**). Following a territory-wide moratorium on unconventional shale gas developments, the Pepper Inquiry was established to assess the risks of fracking. The final report of the Pepper Inquiry was released on 27 March 2018. It provides the government with 135 recommendations to mitigate the risks of fracking in the NT, concluding that "provided that all of the recommendations made in this Report are adopted and implemented in their entirety, not only should the risks associated with an onshore shale gas industry be minimised to an acceptable level, in some instances, they can be avoided altogether." EDO was assisted in its analysis by Earthjustice, a not for profit with expertise on the impacts of fracking in the United States and internationally.

EDO has reviewed only those Pepper Inquiry recommendations which the government claims to have implemented in full (i.e. marked as '100%' complete in its [progress report](#)). As at 27 October 2021, 64 implementation are marked as completed. The table below sets out the actions recommended by the Pepper Inquiry and evaluates whether the government's implementation claims are justified. The red shaded cells indicate those recommendations which, in our view, had not been properly implemented. Those recommendations that appear to be partially complete or have minor issues with implementation are marked in yellow. Those that are adequately addressed are marked in green.

It is noted that, in implementing these recommendations, the NT Government worked with independent scientific experts to develop a Code of Practice (Code), which is legally enforceable through the *Petroleum (Environment) Regulations 2016* (NT) (PER). The finalised Code was published on 12 June 2019 and can be found [here](#). Further, pursuant to the Petroleum Act, the NT government also published the Schedule of Onshore Petroleum Exploration and Production Requirements for the NT (Schedule). The latest version, dated 1 June 2021, can be found [here](#).

ANALYSIS

Rec #	Final Report - detailed recommendation	How does the NT government justify the 100% implementation status?	How has the NT government implemented this recommendation?	Analysis of implementation of the Fracking Inquiry's recommendation
5.1	<i>That prior to the grant of any further exploration approvals, the Government mandates an enforceable code of practice setting out minimum requirements for the decommissioning of any onshore shale gas wells in the NT.</i> <i>The development of this code must draw on world-leading practice. It must be sufficiently flexible to accommodate improved decommissioning technologies. The code must include a requirement that:</i> • wells undergo pressure and cement integrity tests as part of the decommissioning process, with any identified defects to be repaired prior to abandoning the well; and • cement plugs be placed to isolate critical formations and that testing must be conducted to confirm that the plugs have been properly set in the well.	The NT Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019 and can be found here.	Code of Practice Part B.4.15 of the Code addresses the well suspension and decommissioning requirements: • B.4.15.1 Principles • B.4.15.2 Mandatory requirements for decommissioning wells • B.4.15.3 Cement plug requirements and validation methods	The Code adequately addresses recommendation 5.1.
5.3	<i>That prior to the grant of any further exploration approvals, in consultation with industry and other stakeholders, the Government develops an enforceable code of practice setting out the minimum requirements that must be met to ensure the integrity of onshore shale gas wells in the NT. This code must require that:</i> • all onshore shale gas wells (including exploration wells constructed for the purposes of production	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised	Code of Practice <u>B.3 Well operations management plans</u> <i>Interest holders shall have a well operations management plan (WOMP) approved for regulated well activities, as required by the Schedule [of Onshore Petroleum Exploration and Production Requirements]. WOMPs must address the mandatory requirements set out in this Code.</i> <u>B.4.1 Well integrity management</u> <u>B.4.1.2 Mandatory requirements</u>	The Code does not adequately address recommendation 5.3. <u>Comments</u> • Neither the Code nor the Schedule contain any specification or requirement for a minimum Category 9 standard, which includes 4 barriers (see the Inquiry's report at Table 5.2 on page 62). Instead, B.4.3.2(b) requires only that there be "at least two verified well barriers."

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	testing) be constructed to at least a Category 9 standard (unless it can be demonstrated by performance modelling/assessment that an alternative design would give at least an equivalent level of protection), with cementing extending up to at least the shallowest problematic hydrocarbon-bearing, organic carbon rich or saline aquifer zone; • all wells be fully tested for integrity before and after hydraulic fracturing and that the results be independently certified, with the immediate remediation of identified issues being required; • an ongoing program of integrity testing be established for each well during its operational life. For example, every two years initially for a period of 10 years and then at five-yearly intervals thereafter to ensure that if any issues develop, they are detected early and remediated; and • the results of all well integrity testing programs and any remedial actions undertaken be published as soon as they are available.	Code was published on 12 June 2019 and can be found here.	(a) <i>The interest holder must be able to demonstrate that they have a system or process for managing well integrity throughout the whole well life cycle that complies with ISO 16530- 1:2017 Well integrity - Part 1: Life cycle governance. This system or process must include a well integrity management system.</i> ... (c) <i>A well integrity testing and validation program must be established for all wells, that includes:</i> i. <i>subsurface integrity testing (SIT);</i> ii. <i>well integrity and well barrier validation requirements in accordance with this Code;</i> iii. <i>a minimum testing frequency for wells in the operational phase of their lifecycle that is commensurate with well's well integrity risks as per the accepted WOMP; and</i> iv. <i>triggers for well integrity testing based on:</i> a. <i>well integrity monitoring; and</i> b. <i>substantive changes to well barriers or well operating envelope.</i> Part B.4.3 of the Code, "Well design and well barriers" also refers to well integrity management: • B.4.3.2(b) mandates that wells maintain two barriers. • B.4.3.2(c) offers several cases in which an interest holder may be able to justify using fewer than two barriers. Schedule <u>103 Independent validation and verification</u> <i>The construction, alteration or reconstruction of drilling and production equipment, wells, safety systems and emergency facilities shall not be undertaken without approval and, where required by the Minister, validation and or verification by an independent validator.</i> <u>109 Inspectors</u> (1) <i>Where an Inspector considers:</i> (a) <i>that the integrity of any operating system, well, pipeline or facility has been, or is in danger of being, compromised; or</i> (b) <i>that work being carried out:</i> (i) <i>is contravening a provision of the Act, these requirements, or any additional conditions imposed by the Minister; or</i> (ii) <i>is compromising, or may compromise, the integrity of an operating system; or</i> (iii) <i>is not in accordance with good oilfield practice, the Inspector may, by a notice in writing, refer the matter to the relevant Operator.</i> (2) <i>The notice shall specify a day by which the Operator shall report to an Inspector on the action taken in relation to the notice.</i>	• Neither the Code nor the Schedule explicitly require the results of well integrity testing programs and remedial actions to be published "as soon as they are available." • Several well integrity "requirements" in the Code are identified as "preferred," whereas applying the spirit of the Inquiry's recommendations would likely have led to these being listed in the Code as "mandatory." Examples of "preferred" requirements which should be mandatory include: ○ B.4.1.3(a): "Well barriers along with their related function and associated acceptance criteria should be identified and monitored/tested as necessary. The barriers should be maintained as necessary through the well life cycle and re-established or compensated for when impaired. Parameters that could affect well integrity negatively should be monitored." ○ B.4.3.3(a): "Review information available from previous drilling (offset wells) near the proposed well to assist in the design process for new wells." ○ B.4.3.3(b): "Review information on geological strata and formations, and fluids within them, that the well may intersect and any hazards which such strata and formations may contain." ○ B.4.3.3(i): "Well design should be completed by competent personnel...."

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			(3) An Inspector may: (a) direct that no further work be carried out until the matter referred to in the notice is remedied; (b) give directions as to the measures to be taken to remedy the matter referred to in the notice, which directions may include: (i) that plant be repaired or replaced; (ii) that any part of the environment be restored or rehabilitated; (iii) that a particular work practice be altered or discontinued. (4) An Operator shall not contravene, or fail to comply with, a notice given under this requirement. (5) An Operator shall not re-commence operations without approval. <u>302a Well barrier integrity validation reporting</u> It is a requirement that, on any occasion a titleholder validates, installs, replaces or modifies a well barrier, or identifies degraded performance from a barrier, the titleholder must submit a "Well Barrier Integrity Validation" report as per the Department's guideline: "Well Barrier Integrity Validation Reporting". The Well Barrier Integrity Validation Report (WBIV) is to be uploaded on the Department's website. In accordance with Clause 103, and before submission to the Department, the titleholder will have the following results in the WBIV certified by an independent and reputable validator. - Results of any well integrity tests conducted before and after hydraulic fracturing; - Results of any integrity tests after a well barrier is installed, replaced or modified. <u>421 Protection of completed wells</u> (1) A well that has not been suspended or plugged and abandoned shall be inspected at intervals not exceeding six months. (2) On an inspection under Sub-Clause (2): (a) all tubing and annulus pressures shall be measured; (b) any evidence of communication shall be evaluated; (c) integrity of surface equipment including valves, gauges, vents and joints shall be assessed; and (d) the extent of any necessary repairs or maintenance shall be determined. At approved intervals but not less frequent than 5 years the Operator shall run corrosion logs to determine the rate of corrosion of the production casing.	
5.4	That prior to the grant of any further exploration approvals, gas companies be required to develop and implement a well integrity management	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice	This recommendation is addressed in several places within the Code and Schedule. Code of Practice <u>B.3 Well operations management plans</u> (see recommendation 5.3)	More expertise is needed to assess whether the Code adequately addresses recommendation 5.3. <u>Comments</u> Please also see comments for recommendation 5.3.

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	system (WIMS) for each well complying with ISO 16530-1:2017. <i>That prior to the grant of any further exploration approvals, each well must have an approved well management plan (WOMP) in place that contains, at a minimum, the following elements:</i> • <i>consideration of well integrity management across the well life cycle;</i> • <i>a well integrity risk management process that documents how well integrity hazards are identified and risks assessed;</i> • <i>a well barrier plan containing well barrier performance standards, with specific reference to protection measures for beneficial use aquifers;</i> • <i>a process for periodically verifying well barrier integrity through the operational life of the well and immediately prior to abandonment, and a system for reporting to the regulator the findings from integrity assessments;</i> • <i>characterisation data for aquifers, saline water zones, and gas bearing zones in the formations intersected during drilling; and</i> • <i>monitoring methods to be used to detect migration of methane along the outside of the casing.</i>	relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019 and can be found here. Pursuant to the Petroleum Act, the NT government has also published the Schedule of Onshore Petroleum Exploration and Production Requirements, Northern Territory of Australia; the latest version, dated 1 June 2021, can be found here.	<u>B.4.1 Well Integrity Management</u> (see recommendation 5.3) <u>B.4.2 Aquifer protection</u> <u>B.4.2.1 Principles</u> The protection of aquifers requires the following to be achieved: <i>(a) well-defined stratigraphic definition to the base of the deepest recognised aquifer in the local area prior to drilling...</i> <u>B.4.2.2 Mandatory requirements</u> <i>...(e) If an aquifer is discovered during drilling that was not identified prior to commencement of drilling, notification to the Minister is required under regulation 23 of the PER.</i> This notification should identify whether or not environmental values of the aquifer have been adequately addressed under the EMP and whether or not the EMP requires revision under regulation 17 of the PER. <u>B.4.3 Well design and well barriers.</u> <i>...(c) where one or more of the following circumstances applies, less than two verified barriers may be provided:</i> <i>during top hole or surface hole drilling where shallow hydrocarbon or water flow risk has been assessed as being negligible;</i> <i>during diverter drilling;</i> <i>during well decommissioning when two formations need to be isolated from one another and two barriers are not feasible, and a continuous cement plug extending minimum 50m above to 50m below the interface is placed instead; or</i> <i>in other circumstances during well life cycle activities when a risk assessment demonstrates that the same level of risk can be achieved as if two verified barriers were in place.</i> Schedule <u>301c Contents of well operations management plan</u> <i>(1) The matters that must be included in a well operations management plan are as follows:</i> <i>A description of the well, and the well activities relating to the well, to which the plan applies;</i> <i>A description of the risk management process used to identify and assess risks to the integrity of the well;</i> <i>A description and explanation of the design, construction, operation and management of the well, and conduct of well activities, showing how risks to the integrity of the well will be reduced to as low as reasonably practicable;</i> NOTE: A separate well plan summary, detailing the location of all known faults and geo-hazards, must be submitted for uploading on the Department's website.	• The details and exceptions to the recommendation are quite technical and would require assessment by an expert in well mechanics. • Thus, we recommend that an expert be retained to determine whether the technical requirements of the Code and Schedule fully implement this recommendation. • In particular, the expert could assess: 1) Whether the "Preferred Requirements" under Code B.4.3.3 should instead be "Mandatory Requirements"; and 2) the reasonableness and safety of the following exceptions in the Code to the requirement to have two verified barriers in place (as set out in B.4.3.2).

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			(d) A description of the performance outcomes against which the performance of the titleholder in maintaining the integrity of the well is to be measured; (e) A description of the control measures that will be in place to ensure that the risks to the integrity of the well will be reduced to as low as reasonably practicable throughout the life of the well, including periods when the well is not operational (dormant) but has not been permanently decommissioned; (f) A description of the performance standards for the control measures identified under paragraph (e); (g) The measurement criteria that will be used to determine whether the performance outcomes identified under paragraph (d) and the performance standards under paragraph (f) are being met; (h) A description of the monitoring, audit and well integrity assurance processes that will be implemented to ensure the performance outcomes and performance standards are being met throughout the life of the well including periods when the well is not operational (dormant) but has not been permanently plugged and abandoned (decommissioned). ... (i) A description of the measures and arrangements that will be in place for the suspension and abandonment of the well, showing: i. How, during the process of suspending or abandoning the well, risks to the integrity of the well will be reduced to as low as reasonably practicable; and ii. How the actions taken during that process will ensure that the integrity of the well is maintained while the well is suspended or abandoned; (j) a description of the measures and arrangements that will be used to ensure that contractors and service providers undertaking well activities are aware of their responsibilities in relation to the maintenance of the integrity of the well, and have appropriate competencies and training; (k) description of the measures and arrangements that will be used to regain control of the well if there is a loss of containment; (l) a timetable for carrying out and completing the well activities to which the plan applies. (m) a tabulated summary referencing where the specific requirements of Clause 301c are addressed in the WOMP. (n) a tabulated summary referencing where the relevant Principles and Mandatory Requirements of the Code are addressed in the WOMP. (2) The Regulator may give a titleholder permission, notified in writing, not to include matters in a well operations management plan if those matters are regulated in the title.	

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			(3) A well operations management plan may include any other information that the titleholder believes is relevant. See also, Schedule, clause 302a, as copied above in recommendation 5.3.	
5.5a	That prior to the grant of any further exploration approvals, in consultation with the gas industry and the community, the Government develops a wastewater management framework for any onshore shale gas industry. Consideration must be given to the likely volumes and nature of wastewaters that will be produced by the industry during the exploration and production phases. That the framework for managing wastewater includes an auditable chain of custody system for the transport of wastewater (including by pipelines) that enables source-to-delivery tracking of wastewater. That the absence of any treatment and disposal facilities in the NT for wastewater and brines produced by the gas industry be addressed as a matter of priority. [Note that the government divided this recommendation into 5.5a – which consists of the first two paragraphs – and 5.5b – which consists of the final paragraph.]	The mandatory Code of Practice addresses waste water management requirements which allowed exploration to recommence in mid-2019.	This recommendation should be implemented in its entirety before exploration permits are granted, as per the Inquiry. However, the government has divided this into two recommendations (5.5a and 5.5b). According to the government, 5.5a includes the first two paragraphs of 5.5, whilst 5.5b includes the final paragraph. The government says it will implement 5.5b by December 2021. In order to address 5.5a, the following has been included in the Code of Practice. Code of Practice <u>C.3 Wastewater management framework</u> ... The components of the wastewater management framework ... include: (a) Estimate the quantities and quality of water and wastewater from the petroleum activity. (b) Define the methods and approaches that will be used to store, treat, and reuse water and ultimately dispose of wastewater, including what activities will be undertaken at the site of the approved petroleum activity. (c) Estimate the quantities and quality of wastewater, or wastewater derived solids that will be removed from the petroleum site. (d) Provide for the relevant activities and the environmental risks and environmental impacts they involve in a Wastewater Management Plan (WWMP) and a Spill Management Plan (SMP), as part of the EMP. (e) Monitor, manage and report in accordance with the WWMP and SMP. <u>C.3.1 Waste management hierarchy</u> ... The following tiered questions can be used when identifying efficient water uses and reducing wastewater production: 1. Is the generation of wastewater required or can it be avoided? 2. Can the wastewater generating process be substituted? 3. Can measures be put in place to lower the amount of wastewater generated? 4. Can return wastewater from a task be used, or re-employed elsewhere without treatment? 5. Is it technically, economically and environmentally feasible to return wastewater for reuse following treatment? 6. What are the by-products of treatment (e.g. potentially concentrated waste streams of higher hazard) and how can they be managed / disposed of? 7. How will the final wastewater be disposed of? <u>C.4.2.2 Management of produced water and flowback fluid, Mandatory Requirements</u>	The Code adequately addresses recommendation 5.5a. The government is yet to implement 5.5b, but has committed to do so by December 2021; this should be monitored. <u>Comments</u> The failure to develop new wastewater treatment and disposal facilities in the Northern Territory (5.5b) before granting exploration permits is a serious deficiency because: 1) Exploration drilling also produces significant wastewater. 2) Wastewater reinjection is not to be permitted, as per recommendation 7.9 3) It will take several years for appropriate wastewater facilities to be permitted and developed.

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			<i>(a) All produced water and flowback fluid must be held in above-ground enclosed tanks at all times following release from the petroleum well other than in the following circumstances:</i> <i>i. it is being treated for reuse or disposal</i> <i>ii. it is being reused as explicitly authorised in an approved wastewater management plan (see Section C.7.1)</i> <i>iii. it is being disposed of as explicitly authorised in an approved waste management plan (see Section C.7.1)</i> <i>iv. it is being removed from site for lawful disposal elsewhere...</i> <u>C.4.2.3 Preferred requirements</u> <i>(a) Recycling and re-use of all fluids should be maximised and the off-site transport and disposal of fluids should be minimised.</i> <u>C.5 Monitoring mandatory requirements</u> <u>C.5.1 General monitoring requirements</u> <i>(a) Monitoring programs must be described in the WWMP and SMP and must address the requirements in this section C.5. The WWMP and SMP must identify specific monitoring methods based on the predicted contaminants, volumes and concentrations based on chemicals used in drilling and hydraulic fracturing as well as potentially naturally occurring contaminants and radioactive materials.</i> <i>(b) The quantity and quality of all water stored on site must be monitored...</i> <u>C.6.1 Water and wastewater tracking and reporting requirements</u> <i>(a) The movement of water and wastewater must be tracked and include:</i> <i>i. volumes of produced water and flowback fluid from each well;</i> <i>ii. volumes of water transferred into each tank;</i> <i>iii. estimates for evaporation rates from each tank;</i> <i>iv. volumes of water planned to be, and ultimately, reused in petroleum operations including drilling and hydraulic fracturing;</i> <i>v. volumes of water and wastewater used for other purposes including dust suppression and construction water;</i> <i>vi. volumes of water and wastewater removed from site and its destination (whether by vehicle or pipeline) including details of the licence number of the any licensed waste transporters; and</i> <i>vii. volumes of any spills of water or wastewater.</i> <i>(b) Wastewater tracking must be documented in an auditable chain of custody system.</i> <i>(c) Wastewater tracking must be in accordance with other legislative requirements such as those imposed under the Waste Management and Pollution Control Act 1998 (NT) and the Radiation Protection Act 2004 (NT).</i> <i>(d) Wastewater tracking documentation must be reported to the Minister at least annually in accordance with the framework provided in the EMP.</i> <u>C.7.1 Wastewater Management Plan</u>	

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			(a) An EMP for a petroleum activity must include a wastewater management plan (WWMP). (b) A WWMP must address all water and wastewater management activities which are proposed, as defined in section C.2.1... <u>C.7.1.1 Wastewater treatment, reuse, and disposal</u> The WWMP must include a specific detailed risk assessment for any proposed on site wastewater treatment or disposal which addresses at a minimum the following: (a) For any proposed produced water and flowback fluid treatment processes occurring outside of enclosed tanks (including volume reduction via evaporation) the WWMP must demonstrate that all associated environmental risks and environmental impacts have been reduced to a level that is ALARP and acceptable...	
5.6	That in consultation with the gas industry and the community, specific guidance be implemented by the Government, drawing on protocols and procedures developed in other jurisdictions, for the characterisation, segregation, potential reuse and management of solid wastes produced by any onshore shale gas industry.	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019 and can be found here.	Part C of the Code addresses the characterization and management of both waste fluids and waste solids generated on the well site. Code of Practice <u>C.2.1 Water and wastewater to which this Code applies</u> (e) residual drilling waste, e.g. muds and cuttings (which may be more or less in a solid state) in addition to the fluids mentioned in (a) to (d) above; <u>C.4 Design requirements</u> <u>C.4.1 Drilling fluids</u> <u>C.4.1.1 Principles</u> ...Drilling fluids can have a substantial volume of solids derived from additives (such as bentonite clay) and drill cuttings. Management of drilling fluid as a waste must manage the liquid and solid components appropriately. <u>C.4.1.2 Mandatory requirements</u> (a) Waste drilling fluid shall be managed in accordance with the WWMP and SMP. (b) Any residual drilling fluids and cuttings must be contained within: i. engineered pits, lined with an impermeable membrane with coefficient of permeability of less than 10^{-9} m/s tested in accordance with AS 1289.6.7.2 and with resistance to tearing >0.5kN (ASTM D 4073); static puncture >0.5kN (ASTM D 4833) and tensile strength >20 kN/m (ASTM D 7275); or ii. above ground storage tanks with secondary containment measures as detailed in B.4.16.2(h). (c) An assessment of environmental impacts and environmental risks posed by the drill cuttings and residual drilling fluids must be carried out. (d) Disposal options for drill cuttings and residue from drilling fluids must take into account the results of the assessment in C.4.1.2 (c). (e) Leachability testing of drill cuttings must be undertaken in accordance with the Australian Standard Leaching Procedure (Australian Standards AS4439.2 and 4439.3) by a NATA accredited laboratory The analytes and method for drilling waste assessment for this assessment are shown in Table 10.	Part C of the Code adequately addresses recommendation 5.6. <u>Comments</u> It will be important to ensure that companies appropriately address solids in their wastewater management plans.

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			(f) If seeking approval to dispose of residue from drilling fluids on-site, the EMP that is submitted must include a certification from a suitably qualified third party... (g) Control measures must be implemented to minimise the interactions of wildlife, stock, and human receptors with drilling fluids. C.4.1.3 Preferred requirements (a) Recycling and re-use of all solids waste should be maximised, to minimise volume of waste that must be disposed of on-site or transported and managed off-site.	
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.	The Water Act 1992 was amended to remove the exemption apply to the petroleum and ancillary activities and the changes commenced on 31 December 2018. Groundwater extraction for petroleum and ancillary activities now requires a water extraction licence and is regulated under the Water Act 1992.	Water Legislation Amendment Bill 2018 removed the exemption for the petroleum and mining industries from the requirement for a water extraction licence under the Water Act 1992. The latest amendments to the Act and its regulations were finalized on September 29, 2021.	The Code adequately addresses recommendation 5.3. <u>Comments</u> - Existing deficiencies in the Water Act's licensing provisions mean that there is limited transparency and accountability surrounding the water licensing process. - For example, under Part 6A of the Water Act 1992, "Water extraction licence decisions," the Controller is required to give notice of the Controller's "intention to make a water extraction licence decision" within 20 days after the application is lodged "in a newspaper circulating the general locality to which the application relates" (Section 71B). The same process is used to advertise a decision on the licence (Section 71D). Placing a notice in a single newspaper does not seem to be a modern or effective means of informing the public of a licence application or decision.
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.	Amendments to the Water Act 1992 commenced on 19 June 2019 prohibiting the use of surface water for any petroleum and ancillary activities.	Water Amendment Bill 2019 inserted a prohibition on the use of surface water for fracking and associated offence into the Water Act to implement this recommendation. The Water Act now provides in Division 2 "Taking surface water": <i>Section 45A: No license to take water for petroleum activity</i> <i>The Controller must not grant a licence under section 45 if the proposed beneficial use of water under the licence is petroleum activity.</i> Note that "water" is defined in section 43 to mean "water flowing or contained in a waterway."	This Water Amendment Bill 2019 adequately addresses recommendation 7.6.
7.8a	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	Amendments to the Water Act 1992 commenced on 19 June 2019 to stipulate that authorisation for water extraction for hydraulic fracturing purposes cannot be given within 1km of an existing bore without the required landholder agreement or scientific investigation.	This recommendation should be implemented in its entirety before exploration permits are granted. However, the government has divided this into two recommendations (7.8a and 7.8b). According to the government, 7.8a includes only the first point of 7.8, while 7.8b includes the final three points. The government says it will implement 7.8b by December 2021. In order to address 7.8a, the following has been included in the Code of Practice and Water Act:	The Code and Water Act adequately address recommendation 7.8a. <u>Comments</u> - Given the importance of having a complete understanding the resource for deciding on the well-bore minimum distances, the SREBA study on groundwater quantity should have been completed before exploration approvals were granted. - Given the importance of the recommendations in 7.8b to groundwater supplies, the spirit of the

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	<i>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;</i> • <i>that relevant WAPs (water allocation plans) include provisions that adequately control both the rate and volume of water extraction by the gas companies;</i> • <i>that gas companies be required, at their expense, to monitor drawdown in local water supply bores; and</i> • <i>that gas companies be required to immediately 'make good' and rectify any problems if the drawdown is found to be excessive.</i> <i>[Note that the government divided this recommendation into 7.8(a) – which consists of the first bullet point only – and 7.8(b) – which consists of the final three bullet points.]</i>		Code of Practice <u>A.3.2 Well pad site selection requirements</u> <u>A.3.2.2 Mandatory requirements</u> <i>(d) There must be a minimum distance of at least 1km between an existing water supply bore used for domestic or stock consumption and a well pad unless:</i> <i>i. the owner of the water supply bore consents in writing to the location of the well pad; or</i> <i>ii. hydrogeological investigations and ground water modelling indicate that a different distance is appropriate.</i> Water Amendment Bill 2019 <u>Section 60(A) License to take ground water for hydraulic fracturing</u> <i>(1) This section applies in relation to an application for a license, or a license proposed to be granted on the Controller's own initiative, to take water from a bore if:</i> <i>(a) the proposed beneficial use of water under the license is petroleum activity that includes hydraulic fracturing; and</i> <i>(b) one or more designated bores are located within 1 km of the bore.</i> <i>(2) The Controller must not grant the license unless:</i> <i>(a) the owner of each designated bore mentioned in subsection (1)(b) consents to the grant of the license; or</i> <i>(b) hydrogeological investigations and ground water monitoring indicate that the activities under the license will not have any adverse effect on the supply of water to any designated bore mentioned in subsection (1)(b).</i> <i>"Designated bore" is defined in section 60A(3) to include a bore used for rural stock and domestic beneficial use and a bore in relation to which a water extraction license has been granted, among other things.</i>	recommendation calls for them to be implemented before exploration activities drawing down the aquifers begin. This has not occurred. Moreover, it is odd that the requirements of 7.8b were not built into the Code and <i>Water Act</i> at an earlier stage, and will need to be assessed separately in December. Specifically: ○ WAPs have not yet been developed for the Beetaloo Basin (recommendation 7.7). ○ The Code and <i>Water Act</i> do not require that gas companies engage in drawdown monitoring. Instead, the <i>Water Act</i> mandates that the Controller "ensure as far as possible that a continuous program for the assessment of water resources of the Territory is carried out, including the investigation collection, collation and analysis of data concerning the occurrence, volume, flow, characteristics, quality, flood potential and use of water resources." ○ The Code does not contain "make good" requirements. Operators should be required to make good if they drawdown local aquifers excessively, as in the recommendation. • Given the challenges of implementing these requirements and their importance, the plans for implementing recommendation 7.8b that come out in December 2021 should be scrutinized closely.
7.9	<i>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.</i>	Amendments to the <i>Water Act</i> 1992 commenced on 19 June 2019 to stipulate that authorisation cannot be given for the reinjection of hydraulic fracturing waste into aquifers.	Water Act 1992 <u>67 Grant of Recharge License</u> <i>(4) The Controller must not grant a license that permits the increase of water contained in an aquifer with water that is or contains hydraulic fracturing waste.</i> The <i>Water Act</i> defines an aquifer as "a geological structure or formation, or an artificial landfill, permeated or capable of being permeated permanently or intermittently with water."	The <i>Water Act</i> does not adequately address recommendation 7.9. <u>Comments</u> • Section 67(4) of the <i>Water Act</i> bans injection of waste into aquifers, though whether the "conventional reservoirs" explicitly mentioned in the recommendation are necessarily aquifers as defined in the <i>Act</i> is unclear, and therefore whether they could potentially be exempted from this <i>Water Act</i> restriction. • A direct ban on reinjection of wastewater, whether treated or untreated, into all aquifers and conventional reservoirs would be more faithful to the recommendation. • There is no codification of the final clause of the recommendation that requires "full scientific

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				<i>investigations [to] determine that all risks associated with these practices can be mitigated."</i>
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.	The Petroleum (Environment) Regulations 2016 were amended on 19 December 2018 to meet this recommendation, which requires that the information specified in the recommendation is included in an Environment Management Plan (EMP), is reported and made available online.	Code of Practice <u>B.4.13 Hydraulic stimulation and flowback operations</u> <u>B.4.13.2 Mandatory requirements</u> <i>(c) In accordance with Schedule 1, Part 2, Clause 6 and Part 3, Clause 11 of the PER, the Implementation Strategy of an EMP for petroleum activities that include hydraulic fracture stimulation must include details of monitoring and reporting of the as-pumped composition of any hydraulic fracturing fluid used. As a minimum, the following must be recorded and reported for each stage (where a stage in this context means all fluids pumped at a particular depth interval):</i> a. total volume of hydraulic fracturing fluid pumped, b. quality of water used (tested for analytes in section C.8 of this Code. Analyses do not need to be repeated if the same water source is used for multiple stages) and c. typical and maximum concentrations of chemicals or other substances used. The <i>Petroleum (Environment) Regulations</i> were amended to require an EMP for hydraulic fracturing to include "the details about any chemical or other substance that may be in, or added to, any treatment fluids to be used in the course of the activity" (reg. 8(4)(ba)). In addition, Schedule 1 to the PER, which outlines the information to be included in an EMP, provides: 4A Chemicals used in the course of hydraulic fracturing If the activity is hydraulic fracturing, a plan must specify the following information in relation to any chemical or other substance that may be in, or added to, any treatment fluids to be used in the course of the activity: (a) the identity of the chemical or other substance; (b) the volume of the chemical or other substance; (c) the concentration of the chemical or other substance; (d) the purpose of the chemical or other substance; (e) details regarding how the chemical or other substance will be managed; (f) details regarding how the chemical or other substance will be transported on-site; (g) details regarding any action proposed to be taken to prevent a spill of the chemical or other substance; (h) the requirements in relation to the management of the chemical or other substance of the prescribed chemical legislation. Note: for clause 4A(e), "managed" includes handling, collecting and storing any chemical or other substance. In relation to flowback and produced water, the PER was amended to require reporting of flowback fluid and produced water "within 6 months" of the "flowback occurring" (s 37A(1))/the produced water being extracted" (s 37B(1)). <u>Part 3A Reporting requirements for hydraulic fracturing</u>	The Code and PER largely address recommendation 7.10, with some omissions, as below. <u>Comments</u> • Reporting on flowback fluid only within six months of the flowback occurring seems to contravene the recommendation that the information be "reported and publicly disclosed online as soon as it becomes available." • In some cases of chemical reporting in the EMP, the chemical data sheets state the following: "The product contains other ingredients which do not contribute to the overall classification. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret." • We note the NT Government's implementation progress website does not mention the second part of this recommendation focused on flowback and produced water.

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			37A Report about flowback fluid (1) An interest holder in relation to an activity that includes hydraulic fracturing must give the Minister a report about flowback fluid within 6 months of the flowback occurring. (2) The report must contain the following information: (a) the identity of any chemical or NORM found in the flowback fluid; (b) the concentration of any chemical or NORM found in the flowback fluid; (c) details regarding how any chemical or NORM has been or will be managed; (d) details regarding how any chemical or NORM has been or will be transported; (e) details regarding how any chemical or NORM has been or will be treated; (f) details regarding any action proposed to be taken to prevent any chemical or NORM spill; (g) details of the emergency contingency plan included in the environment management plan to which the activity relates; (h) the requirements in relation to the management of any chemical or NORM of the prescribed chemical legislation. ... (5) The Minister must publish the report on the Agency's website within 5 business days after receiving the report. (6) In this regulation: flowback fluid means fluid that is a mixture of hydraulic fracturing fluid and formation fluid that is allowed to flow from the well following hydraulic fracturing. 37B Report about produced water (1) An interest holder in relation to an activity that includes hydraulic fracturing must give the Minister a report about produced water within 6 months of the produced water being extracted. (2) The report must contain the following information: (a) the identity of any chemical or NORM found in the produced water; (b) the concentration of any chemical or NORM found in the produced water; (c) details regarding how any chemical or NORM has been or will be managed; (d) details regarding how any chemical or NORM has been or will be transported; (e) details regarding how any chemical or NORM has been or will be treated; (f) details regarding any action proposed to be taken to prevent any chemical or NORM spill; (g) details of the emergency contingency plan included in the environment management plan to which the activity relates; (h) the requirements in relation to the management of any chemical or NORM of the prescribed chemical legislation. ... (5) The Minister must publish the report on the Agency's website within 5 business days after receiving the report. (6) In this regulation: produced water means naturally occurring water that is extracted from the geological formation following hydraulic fracturing. Note also that the Code of Practice includes the following:	

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			<u>C.7 Mandatory requirements for management plans for wastewater and spills</u> <u>C.7.2 Spill management plan</u> (a) An EMP for a petroleum activity must include a Spill Management Plan (SMP). ... (d) The SMP must contain the following: i. a description of the chemicals, water and wastewater and the way that they will be stored, transported and transferred as part of petroleum activity, this includes fluids which are mixed and/or pumped on site....	
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	The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019. The Code requires proponents to comply with the Preliminary Guideline for Groundwater monitoring bores for Exploration Petroleum Wells in the Beetaloo Sub-Basin which was finalised and distributed on 29 November 2018. The guideline has been uploaded to the DEPWS website. Monitoring has commenced in Beetaloo Sub-basin to enable the 6 month baseline monitoring requirement to be achieved	Code of Practice <u>A.3.2 Well pad site selection requirements</u> <u>A.3.2.2 Mandatory requirement</u> (d) There must be a minimum distance of at least 1km between an existing water supply bore used for domestic or stock consumption and a well pad unless: i. the owner of the water supply bore consents in writing to the location of the well pad; or i. hydrogeological investigations and ground water modelling indicate that a different distance is appropriate. <u>B.4.1 Well integrity management</u> <u>B.4.1.2 Mandatory requirements</u> (c) A well integrity testing and validation program must be established for all wells, that includes: i. subsurface integrity testing (SIT); ii. well integrity and well barrier validation requirements in accordance with this Code; iii. a minimum testing frequency for wells in the operational phase of their lifecycle that is commensurate with well's well integrity risks as per the accepted WOMP; and iv. triggers for well integrity testing based on: a. well integrity monitoring; and b. substantive changes to well barriers or well operating envelope. <u>B.4.3. Well design and well barriers</u> <u>B.4.3.2. Mandatory requirements</u> Wells must be designed such that: ... (b) unless paragraph (c) applies, they are constructed, maintained and decommissioned in such a manner that it can be demonstrated there are at least two verified well barriers between: i. a hydrocarbon bearing zone and aquifers and the surface; and ii. deep, saline water bearing formations and aquifers/the surface. (c) where one or more of the following circumstances applies, less than two verified barriers may be provided:	The Code largely addresses recommendation 7.11, with one exception. <u>Comments</u> • See concerns in recommendation 5.3 in relation to the failure to require Category 9 well construction.

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	<i>years and be reviewed for suitability by the regulator.</i>		<i>i. during top hole or surface hole drilling where shallow hydrocarbon or water flow risk has been assessed as being negligible;</i> <i>ii. during diverter drilling;</i> <i>iii. during well decommissioning when two formations need to be isolated from one another and two barriers are not feasible, and a continuous cement plug extending minimum 50m above to 50m below the interface is placed instead; or</i> <i>iv. in other circumstances during well life cycle activities when a risk assessment demonstrates that the same level of risk can be achieved as if two verified barriers were in place.</i> <u>B.4.17 Groundwater monitoring</u> <u>B.4.17.2 Mandatory requirements</u> <i>... (b) Where there is an intention to hydraulically fracture the well(s) at a well site...</i> <i>(ii) Electrical conductivity data from the monitoring bore(s) must be measured as soon as practicable after the completion of construction of the monitoring bore(s) until decommissioning of all wells on the well site. Results submitted to the regulator: (i) by electronic means from the well site as soon as they are available; (ii) if this is unachievable to implement in the first stages of exploration, an alternative plan and timetable may be proposed before hydraulic fracturing commences, detailing how electrical conductivity information will be regularly submitted.</i> <i>(c) Any guidelines published by the Northern Territory Government from time to time relating to groundwater monitoring parameters, methodologies and frequencies for petroleum operations must be followed. This includes the Preliminary Guideline: Groundwater Monitoring Bores for Exploration Petroleum Wells in the Beetaloo Sub-basin.</i> Schedule <u>302a Well barrier integrity validation reporting</u> It is a requirement that, on any occasion a titleholder validates, installs, replaces or modifies a well barrier, or identifies degraded performance from a barrier, the titleholder must submit a "Well Barrier Integrity Validation" report... The Well Barrier Integrity Validation Report (WBIV) is to be uploaded on the Department's website. In accordance with Clause 103, and before submission to the Department, the titleholder will have the following results in the WBIV certified by an independent and reputable validator. • Results of any well integrity tests conducted before and after hydraulic fracturing; • Results of any integrity tests after a well barrier is installed, replaced or modified. Submission of the WBIV to the Department must be accompanied with a copy of the validator's certification.	

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			301c Contents of well operations management plan 301c(1) The matters that must be included in a well operations management plan are as follows: (h) A description of the monitoring, audit and well integrity assurance processes that will be implemented to ensure the performance outcomes and performance standards are being met throughout the life of the well... NOTE: Results of the monitoring process and outcomes are to be uploaded on the Government's website along with any remedial action undertaken as per Clause 302a (see above).	
7.12	<i>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:</i> • the Environment Management Plan 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.	The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019 and can be found here.	The Code of Practice calls for the inclusion of a wastewater management plan (WWMP) and spill management plan (SMP) within the Environmental Management Plan (EMP). Code of Practice C.3 Wastewater management framework <i>The components of the wastewater management framework ... include ...</i> (d) Provide for the relevant activities and the environmental risks and environmental impacts they involve in a Wastewater Management Plan (WWMP) and a Spill Management Plan (SMP), as part of the EMP. (e) Monitor, manage and report in accordance with the WWMP and SMP. C.7.1 Wastewater management plan (a) An EMP for a petroleum activity must include a wastewater management plan (WWMP). (b) A WWMP must address all water and wastewater management activities which are proposed, as defined in section C.2.1 and as excluded by section C.2.2 of this Code. (c) The WWMP must include a description of the activities that will generate waste and wastewater, including any activities that may generate drilling materials (refer to definition in Section C.4.1), produced water, flowback fluid and any other waste which is proposed to be handled, stored or transported away from the area in which the activity is approved to be carried out... C.7.2 Spill management plan (a) An EMP for a petroleum activity must include a Spill Management Plan (SMP). (b) The content of an SMP as stipulated by this Code may be incorporated into an emergency contingency plan that is also required to be submitted as part of an EMP. (c) The SMP must assess and manage the risks posed by potential spills of waste, wastewater produced oil or condensate, fluids and any chemicals used or stored as part of petroleum activity.	The Code and PER largely implement recommendation 7.12, with a few exceptions, as set out below. Comments • On our reading of the Code and the PER, the WWMP and SMP are enforceable, because: (a) Code C.3 provides that the WWMP and SMP are part of the EMP; and (b) the PER provides that any person who carries out a regulated activity in a manner that contravenes an EMP commits an offence (clause 31). • Bunds are not explicitly mandatory for the well site. • Enclosed tanks are generally required for holding wastewater. However, the Code's exceptions (C.4.2.2) present risks (e.g., liners may break and leak wastewater, and that the region experiences huge rain events that may, if required procedures are not followed, lead to the overflow of the holding ponds). Given mention in other places of challenges of access during the wet season, companies may have difficulties in managing the rapid movements of wastewater into tanks before all major rain events. • We recommend that an expert review the Code, in particular B.4.16 and A.3.8, to assess whether the secondary containment requirements adequately meet the recommendation.

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			The Code also has references the use of enclosed tanks for produced water and flowback fluid, save for in particular circumstances: <u>C.4.2 Management of produced water and flowback fluid</u> <u>C.4.2.2 Mandatory requirements</u> <i>(a) All produced water and flowback fluid must be held in above-ground enclosed tanks at all times following release from the petroleum well other than in the following circumstances:</i> <i>i. it is being treated for reuse or disposal</i> <i>ii. it is being reused as explicitly authorised in an approved wastewater management plan (see Section C.7.1)</i> <i>iii. it is being disposed of as explicitly authorised in an approved waste management plan (see Section C.7.1)</i> <i>iv. it is being removed from site for lawful disposal elsewhere</i> <u>C.7.1.1 Wastewater treatment, reuse and disposal</u> <u>C.7.1.1(a) Enclosed tank requirement in major rain events</u> <i>ii. WWMP must include a plan to transfer produced water and flowback fluid into above-ground enclosed tanks (see section C.4.2.2) at least 8 hours in advance of any predicted significant rainfall event as specifically defined based on local weather conditions and other site specific risks;</i> The Code references well site fluids management: <u>B.4.16 Site material and fluids management</u> <u>B.4.16.2 Mandatory requirements</u> <i>(f) The well site must be designed and operated to minimise the potential for releases of contaminants to the environment and the impacts of such a release.</i> <i>(h) Use, storage and handling of materials on site must be conducted in accordance with section A.3.8 and Part C of this Code, and:</i> <i>i. secondary containment must be instituted on areas of the well site where any hazardous chemicals or those that may cause environmental harm are to be stored or handled during all well operations.</i> <i>ii. areas where any hazardous chemicals or those that may cause environmental harm are to be stored or handled must be lined to be sufficiently impervious and able to contain spilled material or waste until it can be removed or treated. This lining may be a geomembrane or a suitably constructed clay liner.</i>	
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 (see above). If	The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the	As per recommendation 7.11.	The Code adequately addresses recommendation 7.13.

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	<i>contamination is detected, remediation must commence immediately.</i>	Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019. The Code requires proponents to comply with the Preliminary Guideline for Groundwater monitoring bores for Exploration Petroleum Wells in the Beetaloo Sub-basin which was finalised and distributed on 29 November 2018. The guideline has been uploaded to the DEPWS website .		
7.15	<i>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.</i>	The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019. The Schedule is available here .	Schedule of onshore petroleum exploration and production requirements 301c. Contents of well operations management plan (1) <i>The matters that must be included in a well operations management plan are as follow</i> (a) <i>A description of the well, and the well activities relating to the well, to which the plan applies;</i> (b) <i>A description of the risk management process used to identify and assess risks to the integrity of the well;</i> (c) <i>A description and explanation of the design, construction, operation and management of the well, and conduct of well activities, showing how risks to the integrity of the well will be reduced to as low as reasonably practicable;</i> Note: A separate well plan summary, detailing the location of all known faults and geo-hazards, must be submitted for uploading on the Department's website.	Schedule, s. 301c adequately addresses recommendation 7.15, however, we have concerns about its implementation. <u>Comments</u> - It not clear where the "separate well plan summary" is on the Department's website, and we have not yet found such a plan with this fault information for any of the approved exploration wells. - In the Imperial 2021-2025 program partially approved on 3 September 2021, Imperial stated that they planned to use the seismic testing under assessment to characterize the faults that would then be built into a future well management plan. Thus, the Minister was being asked to approve a plan that did not contain all relevant information at the time.
7.17	<i>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.</i>	Amendments to the <i>Water Act 1992</i> commenced on 19 June 2019 and stipulate that release of hydraulic fracturing waste to surface waters is an offence.	<i>Water Amendment Bill 2019</i> inserted a prohibition on the pollution of water by "hydraulic fracturing waste" into the <i>Water Act</i> (section 17A). However, Section 17B states: (1) Section 17A does not apply if: (a) hydraulic fracturing waste is produced water or flowback fluid; and (b) the hydraulic fracturing waste comes into contact with water that is contained in the geological formation being targeted by the process of hydraulic fracturing. (2) In this section: <i>flowback fluid</i> means fluid that is a mixture of hydraulic fracturing fluid and formation fluid that is allowed to flow from the well following hydraulic fracturing. <i>produced water</i> means naturally occurring water that is extracted from a geological formation following hydraulic fracturing.	The <i>Water Act 1992</i> amendments largely address recommendation 7.17. <u>Comments</u> There is no specific mention in the <i>Water Act</i> about whether treated wastewater is also considered wastewater that cannot come into contact with other water bodies.
7.18	<i>That to minimise the adverse impacts of any onshore shale gas infrastructure (roads and</i>	The Northern Territory Government has worked with	Code of Practice	The Code does not adequately address recommendation 7.18.

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	<i>pipelines) on the flow and quality of surface waters, the Government must ensure that:</i> - 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; - 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.	independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	<u>A.3.4 Erosion and sediment control and hydrology</u> <i>(d) Road and pipeline corridor designs must:</i> - minimise erosion of exposed road surfaces and drains; - ensure that roads and pipeline surface water flow paths minimise erosion of all exposed surfaces and drains; - comply with relevant guidelines such as the International Erosion Control Association Best Practice for Erosion and Sediment Control (2008), IECA Appendix P: Land Based Pipeline Construction December 2015 (Addendum to IECA 2008) and the Australian Pipeline Industry Association Code of Environmental Practice for Onshore Pipelines 2017. <i>(e) The requirements of the Land Clearing Guidelines as published on the DENR website and amended from time to time must be complied with in relation to protection of natural waterways as a result of land disturbance and ensure the following:</i> - appropriate buffers are implemented around natural waterways; - disturbance in the wet season is minimised; - the number of crossing points is minimized; - crossings are constructed as close as practicable to right angles to the waterway... <u>A.3.5 Biodiversity protection</u> ... (b) All infrastructure stream crossings must provide for appropriate fauna passage;	<u>Comments</u> The first part of the recommendation does not appear to be met, that is, there does not appear to be a basin-wide planning study that assesses and plans for landscape scale development to avoid the larger cumulative impacts of piecemeal infrastructure additions.
8.2	<i>That a baseline weed assessment be conducted over all areas that will be accessed by a gas company on an exploration permit prior to any exploration activities being carried out on that area and that ongoing weed monitoring be undertaken to inform any weed management measures necessary to ensure no incursions or spread of weeds.</i>	The Department of Environment, Parks and Water Security will continue working with holders of existing Exploration Permits in the Beetaloo Sub-basin to accurately identify locations of exploration and undertake weed surveys in those areas. A requirement for ongoing weed monitoring and management to prevent new incursions or spread of weeds has been incorporated into the Code of Practice and includes mandatory weed management requirements to be included in Environment Management Plans enforced under the Petroleum (Environment) Regulations 2016. Specific guidance regarding baseline weed assessments provided within the Weed Management Plan Guideline which is available on DEPWS's	Code of Practice <u>A.3.6 Weed management</u> A project specific weed management plan must be developed as part of the EMP which meets the requirements of the <i>NT Weed Management Planning Guide: Onshore Petroleum Projects</i> (available here). The plan must provide for: - baseline weed assessments prior to regulated activities being undertaken - ongoing weed monitoring...	The Code adequately addresses recommendation 8.2.

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		website along with the Code of Practice. Baseline assessments for new areas will be required prior to activities commencing in these areas.		
8.3	<i>That, at all times, gas companies must have a dedicated weeds officer for each gas field who is responsible for weed management and whose role includes:</i> • <i>training all field workers in the identification of weeds, especially gamba and grader grass, and to establish an effective reporting system for any suspected weed incursions;</i> • <i>designing and implementing effective weed surveillance; and</i> • <i>ensuring prompt and effective management of any weed incursions in consultation with affected landholders. That the gas industry funds a dedicated officer responsible for weed management associated with any onshore shale gas development. This officer is to be located in the Government's Weed Management Branch in a regional centre. The officer will be responsible for:</i> • <i>coordinating regional weed baseline assessments and subsequent weed surveillance; and</i> • <i>overseeing strategic and effective management of any weed incursions by gas companies.</i>	The obligation on gas companies to have a dedicated weeds officer for each gas field have been built into weed management plan guidelines which are required to be complied with by the Code of Practice. The Guideline has been released along with the Code of Practice. A dedicated weeds officer has been employed by the Department of Environment, Parks and Water Security working closely with industry to ensure weeds related risks are appropriately managed.	Code of Practice <u>A.3.6 Weed management</u> A project specific weed management plan must be developed as part of the EMP which meets the requirements of the <i>NT Weed Management Planning Guide: Onshore Petroleum Projects</i> (https://denr.nt.gov.au/_data/assets/pdf_file/0006/708558/weed-management-planning-guide-onshore-petroleum-projects.pdf). The plan must provide for... (c) ... a dedicated weed officer...	The Code adequately addresses recommendation 8.3. <u>Comments</u> • The Code could contain more specificity about the roles of the weed officer, as defined in the recommendation.
8.4	<i>That gas companies must be required to have an approved weed management plan for any area the subject of an exploration permit prior to any part of that area being accessed for the carrying out of any exploration activities. The WMP must be consistent with all relevant statutory obligations and relevant threat abatement plans established under the EPBC Act.</i>	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019 and can be found here. Weed Management Plans are now required by the Code of Practice to be included as part of an Environment Management	Code of Practice <u>A.3.6 Weed management</u> A project specific weed management plan must be developed as part of the EMP which meets the requirements of the <i>NT Weed Management Planning Guide: Onshore Petroleum Projects</i> (https://denr.nt.gov.au/_data/assets/pdf_file/0006/708558/weed-management-planning-guide-onshore-petroleum-projects.pdf).	The Code adequately addresses recommendation 8.4.

Rec #	Final Report - detailed recommendation	How does the NT government justify the 100% implementation status?	How has the NT government implemented this recommendation?	Analysis of implementation of the Fracking Inquiry's recommendation
		Plan, under the Petroleum (Environment) Regulations 2016. A Guideline has been developed outlining specific requirements which can be found on the DEPWS website.		
8.5	<i>That gas companies be required to comply with any statutory regional fire management plan within their area of exploration and/or production activity. The fire management plan must:</i> <i>address the impacts that any onshore shale gas industry will have on fire regimes in the NT and identify how those impacts will be managed;</i> <i>establish robust monitoring programs for assessing seasonal conditions and fuel loads;</i> <i>require that annual fire mapping be undertaken to monitor any increase in fire frequency due to any onshore shale gas development;</i> <i>require that all existing baseline data for at least the decade prior to commencement of any exploration activity be collated and published;</i> <i>implement management actions, such as prescribed fuel reduction burns at strategic locations, if fire frequency is shown to have increased due to onshore shale gas activity; and</i> <i>facilitate support for local volunteer fire brigades to increase regional capacity for fire management</i>	The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice <u>A.3.7 Fire management</u> (a) A fire management plan at a project level must be developed as part of the EMP which demonstrates the following: - analysis of baseline fire information (at least 10 years); - analysis of impacts of the proposed activities on the existing fire management regime (including measures and strategies of government and other stakeholders); - coordination with the landholder and other land users and consistency with the landholder's fire management obligations and strategies (including regional and property fire management plans under the <i>Bushfires Management Act 2016</i>); - implementation of the interest holder's appropriate fire mitigation measures, such as: - robust monitoring of seasonal conditions and fuel loads; - maintenance of fire access trails; - maintenance of fire breaks around infrastructure; - controlled burns; - communication system for monitoring bushfire alerts in the area; and - contributing to increased regional fire fighting capacity (such as local volunteer fire brigades); - appropriate fire control measures for relevant activities; - annual fire mapping to monitor changes to fire frequency in the relevant area. (b) infrastructure must be designed, constructed, operated and maintained to mitigate risks of ignition.	The Code adequately addresses recommendation 8.3.
8.7	<i>That the area of vegetation cleared for infrastructure development (well pads, roads and pipeline corridors) be minimised through the efficient design of flowlines and access roads, and where possible, the colocation of shared infrastructure by gas companies.</i>	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The	Code of Practice <u>A.3.1 Site selection and planning</u> (b) The following must be demonstrated in regard to the selection of proposed locations: landscape and regional scale impacts have been considered and accounted for at the design phase of development and are informed by baseline ecological studies of areas to be disturbed;	The Code adequately addresses recommendation 8.7.

Rec #	Final Report - detailed recommendation	How does the NT government justify the 100% implementation status?	How has the NT government implemented this recommendation?	Analysis of implementation of the Fracking Inquiry's recommendation
		finalised Code was published on 12 June 2019.	ii. critical habitats and important habitats are identified and avoided during corridor selection and construction and appropriate controls mechanisms implemented during construction to avoid any impact on them; iii. the area of vegetation to be cleared for infrastructure development (including well pads, roads and pipeline corridors) has been minimised through efficient design and where possible, use of existing infrastructure and the co-location of shared infrastructure; and iv. potential environmental nuisance has been avoided and minimised.	
8.8	<i>That well pads and pipeline corridors be progressively rehabilitated, with native vegetation re-established such that the corridors become ecologically integrated into the surrounding landscape.</i>	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice <u>A.3.9 Rehabilitation</u> (a) A Rehabilitation Plan must be included as part of an EMP. It must be developed by a suitably qualified person and must include specific environmental outcomes and performance standards (eg, monitoring and reporting requirements). (b) The Rehabilitation Plan shall be appropriate to the scale and nature of the activity and include: i. strategies for the determination of final land use(s) and rehabilitation goals and details of how rehabilitation objectives will be achieved; ii. a monitoring and maintenance program for reinstated and rehabilitated areas. (c) Progressive rehabilitation of significantly disturbed land which is not required for the ongoing conduct of the petroleum activity(ies) or future activities, must commence as soon as practicable, but not longer than 12 months following the cessation of activities on the land. (d) All significantly disturbed land must be reinstated to its pre-disturbed condition. For areas that previously contained native vegetation, native vegetation must be re-established such that the corridors become ecologically integrated into the surrounding landscape. (e) Regular maintenance and at least yearly monitoring of rehabilitated areas must take place to measure compliance with the Rehabilitation Plan. (f) If contamination is detected, remediation must commence immediately in accordance with the spill management plan and/or emergency contingency plan.	The Code adequately addresses recommendation 8.8.
8.10	<i>That gas companies be required to identify critical habitats during corridor construction and select an appropriate mechanism to avoid any impact on them.</i>	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice <u>A.3.1 Site selection and planning</u> (b) The following must be demonstrated in regard to the selection of proposed locations: i. landscape and regional scale impacts have been considered and accounted for at the design phase of development and are informed by baseline ecological studies of areas to be disturbed; ii. critical habitats and important habitats are identified and avoided during corridor selection and construction and appropriate controls mechanisms implemented during construction to avoid any impact on them; iii. the area of vegetation to be cleared for infrastructure development (including well pads, roads and pipeline corridors) has been minimised through efficient design and	The Code adequately addresses recommendation 8.10.

Rec #	Final Report - detailed recommendation	How does the NT government justify the 100% implementation status?	How has the NT government implemented this recommendation?	Analysis of implementation of the Fracking Inquiry's recommendation
			where possible, use of existing infrastructure and the co-location of shared infrastructure; and iv. potential environmental nuisance has been avoided and minimised.	
8.11	<i>That clearing for corridors, well pads and other operational areas be kept to a minimum, that pipelines and other linear infrastructure be buried (except for necessary inspection points), and that all disturbed ground be revegetated.</i>	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice <u>A.3.1 Site selection and planning</u> <i>(e) Pipelines and ancillary services must be buried except for the following:</i> <i>i. temporary infrastructure;</i> <i>ii. infrastructure located on well pads;</i> <i>iii. where it is necessary for inspection; or</i> <i>iv. where burial would not reduce environmental risks or environmental impacts from the infrastructure to levels which are ALARP and acceptable, as demonstrated in the EMP.</i> <u>A.3.5 Biodiversity protection</u> Surface activities must be undertaken in a manner that avoids and minimises environmental risks and environmental impacts to flora and fauna, critical habitat and important habitat to ALARP and acceptable in accordance the Land Clearing Guidelines as published on the DENR website and amended from time to time and the following: <i>(a) Land clearing for corridors, well pads and other operational areas must be kept to a minimum;</i> <i>(b) All infrastructure stream crossings must provide for appropriate fauna passage;</i> <i>(c) Where environmental impacts and environmental risks to flora and fauna are unable to be avoided or adequately mitigated by other means, the residual impacts must be offset in accordance with the Northern Territory and/ or Australian Government policy relating to environmental offsets in effect from time to time (if any).</i> <i>The Implementation Strategy required under Schedule 1 cl. 11 of the PER must provide for records of the nature, location and extent of disturbance of flora and fauna including geospatial information depicting areas cleared to be provided to the Minister.</i> <u>A.3.9 Rehabilitation</u> <i>(a) A Rehabilitation Plan must be included as part of an EMP. It must be developed by a suitably qualified person and must include specific environmental outcomes and performance standards (eg, monitoring and reporting requirements).</i> <i>(b) The Rehabilitation Plan shall be appropriate to the scale and nature of the activity and include:</i> <i>i. strategies for the determination of final land use(s) and rehabilitation goals and details of how rehabilitation objectives will be achieved;</i> <i>ii. a monitoring and maintenance program for reinstated and rehabilitated areas.</i> <i>(c) Progressive rehabilitation of significantly disturbed land which is not required for the ongoing conduct of the petroleum activity(ies) or future activities, must commence as soon as practicable, but not longer than 12 months following the cessation of activities on the land.</i>	The Code largely addresses recommendation 8.11. <u>Comments</u> The requirement that “all disturbed ground be revegetated” may not be met, as Section A.3.9 of the Code describes that “all significantly disturbed land” must be reinstated to its pre-disturbed conditions.

Rec #	Final Report - detailed recommendation	How does the NT government justify the 100% implementation status?	How has the NT government implemented this recommendation?	Analysis of implementation of the Fracking Inquiry's recommendation
			<i>(d) All significantly disturbed land must be reinstated to its pre-disturbed condition. For areas that previously contained native vegetation, native vegetation must be re-established such that the corridors become ecologically integrated into the surrounding landscape.</i> <i>(e) Regular maintenance and at least yearly monitoring of rehabilitated areas must take place to measure compliance with the Rehabilitation Plan.</i> <i>(f) If contamination is detected, remediation must commence immediately in accordance with the spill management plan and/or emergency contingency plan.</i>	
8.12	<i>That directional drilling under stream crossings be used in preference to trenching unless geomorphic and hydrological investigations confirm that trenching will have no adverse impact on water flow patterns and waterhole water retention timing.</i>	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice <u>A.3.4 Erosion and sediment control and hydrology</u> <i>(f) Directional drilling under waterway crossings must be used in preference to trenching for all buried infrastructure unless geomorphic and hydrological investigations confirm that trenching will have no adverse impact on water flow patterns and waterhole water retention timing.</i>	The Code adequately addresses recommendation 8.12
8.13	<i>That roads and pipeline surface water flow paths minimise erosion of all exposed surfaces and drains.</i>	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice <u>A.3.4 Erosion and sediment control and hydrology</u> <i>(d) Road and pipeline corridor designs must:</i> ii. <i>ensure that roads and pipeline surface water flow paths minimise erosion of all exposed surfaces and drains.</i>	The Code adequately addresses recommendation 8.13.
8.14	<i>That all corridors be constructed to minimise the interference with wet season 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.</i>	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice <u>A.3.1 Site selection and planning</u> <i>(d) Infrastructure site/route selection must minimise interference with wet season water flow paths and exposure of infrastructure to flooding.</i> <u>A.3.4 Erosion and sediment control and hydrology</u> <i>(d) Road and pipeline corridor designs must:</i> iii. <i>comply with relevant guidelines such as the International Erosion Control Association Best Practice for Erosion and Sediment Control (2008), IECA Appendix P: Land Based Pipeline Construction December 2015 (Addendum to IECA 2008) and the Australian Pipeline Industry Association Code of Environmental Practice for Onshore Pipelines 2017.</i>	The Code adequately addresses recommendation 8.14.
8.15	<i>That to minimise the impact of any onshore shale gas industry on landscape amenity, gas companies must demonstrate that they have minimised the surface footprint of development to ALARP, including that:</i>	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's	Code of Practice <u>A.3.2 Well pad site selection requirements</u> <u>A.3.2.2 Mandatory requirement</u>	The Code does not adequately address recommendation 8.15. <u>Comments</u>

Rec #	Final Report - detailed recommendation	How does the NT government justify the 100% implementation status?	How has the NT government implemented this recommendation?	Analysis of implementation of the Fracking Inquiry's recommendation
	- well pads are spaced a minimum of 2 km apart; and - the long-term infrastructure within any development area (exploration or production) has little to no visibility from any major public roads. <i>*ALARP means "a level as low as reasonably practicable."</i>	recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	(a) Where a petroleum development is targeting a continuous resource well pads must be spaced a minimum of 2km apart, measured from the centre of the well pads; or the interest holder must demonstrate: - a justification that demonstrates that a well pad spacing of less than 2 km is required to reduce environmental risks and impacts on cultural heritage and other land users to ALARP and acceptable in consideration of site specific constraints (including geohazards, environmental values, cultural heritage, existing land use); - reasons supporting the alternative locations chosen; and - that the proposed locations minimise landscape amenity impacts. (b) Where a petroleum development is targeting a compartmentalised resource, well pad spacing and location must be placed to minimise landscape amenity impacts. (c) Well pads and well infrastructure installed on the well pad post drilling must have little or no visibility from any major public road that exists at the time the well pad is constructed. Continuous resource means "[a] resource hosted in source rock with significant lateral extent, such as a shale." Compartmentalised resource is "[a] resource restricted in lateral extent where petroleum has migrated from source rocks to a definable reservoir."	- Although Subsection (a) of A.3.2.2 requires well pads to be spaced a minimum of 2 km in accordance with Recommendation 8.15, it allows an interest holder to deviate from this requirement to reduce impacts on cultural heritage, but also on a more general category of "other land users." It is possible that this exemption could be improperly granted. - An expert might usefully assess the distinction between continuous resources and compartmentalised resources because well pad spacing requirements are different depending on the resource type. - Subsection (c) seems to adequately implement the visibility requirement.
9.1	That to reduce the risk of upstream methane emissions from any onshore shale gas wells, the Government implement the US EPA New Source Performance Standards of 2012 and 2016.	The Northern Territory Government worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice <u>D.5.1 Methane Emissions Management Plan</u> <u>D.5.1.3 Preferred requirements</u> (a) The MEMP should be consistent with the emissions management plan described in US NSPS 2016 and relevant parts of the following sections: §60.5397a; §60.5410a; §60.5415a; and §60.5420a. <u>D.5.2.3 Preferred requirements</u> (a) The inspection frequency should be consistent with the monitoring requirements in US NSPS 2016 and relevant parts of the following sections: §60.5397a; §60.5410a; and §60.5415a. <u>D.5.3.3 Preferred requirements</u> (a) The minimum requirements for gas detection instruments, operation and calibration procedures should be consistent with the requirements in US NSPS 2016 and relevant parts of the following sections: §60.5397a. <u>3.2 Nature of requirements</u> In the Code, "preferred requirements" is defined as follows: (c) preferred requirements: These are practices, methods and techniques which should generally be followed by interest holders unless: - there is a convincing justification why they cannot be followed; and	The Code does not adequately address recommendation 9.1. <u>Comments</u> In contrast to the more absolute language of the recommendation, compliance with US EPA New Source Performance Standards 2016 under the Code of Practice is only "preferred," not mandatory. (See left for the definition of "preferred requirements" in the Code.)

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			ii. any alternative practice, method or technique that will be followed: a) if a corresponding principle has been identified, will achieve the principle; or b) if no corresponding principle has been identified, will result in no greater environmental risks or environmental impacts than if good oilfield practice is followed.	
9.2	That prior to the grant of any further exploration approvals, a code of practice be developed and implemented for the ongoing monitoring, detection and reporting of methane emissions from any onshore shale gas fields and wells.	The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice Part D — Methane emissions monitoring, leak management, detection and reporting (sets out minimum standards).	The Code adequately addresses recommendation 9.2. <u>Comments</u> - Monitoring and reporting efforts in the Code would be significantly strengthened (and the intention of the Inquiry would be better implemented) if all "preferred" requirements in Part D of the Code were made "mandatory" requirements. - For example, in the body of the Inquiry report, the panel recommended that "a formal site-wide leak inspection and repair program should be conducted that is consistent with the US EPA NSPS standards" (see page 226 of the Inquiry's report). However, Code D.5.3.3(a) lists as a "Preferred" requirement that "The minimum requirements for gas detection instruments, operation and calibration procedures should be consistent with the requirements in US NSPS 2016...". Likewise, Code D.5.2.3 – again a "Preferred" requirement states that the frequency of methane emissions inspection should be consistent with US NSPS 2016.
9.3	That baseline monitoring of methane concentrations be undertaken for at least six months prior to the grant of any further exploration approvals. In areas where hydraulic fracturing has already occurred, the baseline monitoring should be undertaken at least a year prior to the grant of any production approvals.	Measurement of regional baseline methane concentrations in the Beetaloo Sub-basin was commenced by CSIRO in July 2018, and concluded in March 2019. CSIRO has released three publicly available reports of the initial surveys for naturally occurring methane monitoring it has conducted. The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019. It contains requirements	Code of Practice <u>D.4.1 Baseline Methane Assessment</u> <u>D.4.1.2 Mandatory Requirements</u> (a) Methane assessment (i.e. mobile surveys of ambient methane concentration; identification and location of main methane sources; quantification of emission rates if possible) must be undertaken for the region or catchment for at least six months prior to the granting of exploration approvals involving hydraulic fracturing. (b) In areas where hydraulic fracturing has already occurred, methane assessment (i.e. mobile surveys of ambient methane concentration; identification and location of main methane sources; quantification of emission rates if possible) for the region must be undertaken for at least a year prior to the granting of production approvals. ... (e) Baseline assessment must be undertaken by persons or organisations approved by the Northern Territory Government. Note also that the NT Government's implementation website says: "Measurement of regional baseline methane concentrations in the Beetaloo Sub-basin was commenced by CSIRO in July 2018, and concluded in March 2019. CSIRO has released three publicly available reports of the initial surveys for naturally occurring methane monitoring it has conducted."	The Code adequately addresses recommendation 9.3. <u>Comments</u> 12 months of baseline monitoring data from an area that already has fracking ongoing in exploration wells is a poor substitute for a before-fracking study. - Note also that there does not appear to be a requirement for the baseline monitoring to be publicly released (see also comments on recommendation 9.5 below).

Rec #	Final Report - detailed recommendation	How does the NT government justify the 100% implementation status?	How has the NT government implemented this recommendation?	Analysis of implementation of the Fracking Inquiry's recommendation
		for baseline and ongoing methane monitoring.		
9.4	<i>That baseline and ongoing monitoring be the responsibility of the regulator and funded by the gas industry.</i>	Exploration permit holders in the Beetaloo Sub-basin will pay the NT Government for the baseline methane monitoring work CSIRO has completed. Industry will pay for the baseline through a cost recovery exercise. The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. It contains requirements for baseline and ongoing methane monitoring. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice <u>D.4 Regional methane monitoring</u> This section outlines requirements for the establishment of a baseline and ongoing monitoring of methane emissions in a region. Three types of regional monitoring programs are required: • Baseline Methane Assessments, described in D.4.1, are conducted to characterise the ambient methane levels, which may vary with seasons, and to identify the major sources of methane prior to a prospective activity. This assessment may be done in conjunction with baseline methane surveys conducted for a Strategic Regional Environmental Baseline Assessment (SREBA). • Regional Methane Assessment Programmes, described in section D.4.2, are conducted to characterise the existing natural and anthropogenic sources of methane emissions across each permit or licence area and adjacent areas before the commencement of exploration activity and immediately after the commencement of full-scale production. • Routine Periodic Atmospheric Monitoring Programmes, described in D.4.3, are conducted to provide for periodic monitoring so that any changes in methane emissions can be detected during the life of a project that has entered the production phase. These assessments use the Regional Methane Assessment Programmes as their baseline. These assessments are conducted by or on behalf of the Northern Territory Government, funded by industry, and must be designed and implemented by a suitably qualified and experienced professional who is approved by the Minister.	The Code adequately addresses recommendation 9.4.
9.5	<i>That all monitoring results must be made publicly available online on a continuous basis in real time.</i>	The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019. The government has commenced work on an online portal to enable timely public reporting.	Code of Practice <u>D.1 Overview</u> <i>The purpose of this Code is to ensure that ... (d) greenhouse gas emissions from industry are minimised, and adequately quantified and reported to the Northern Territory Government for subsequent open publication.</i> <u>D.4.2 Regional Methane Assessment Programme (RMAP)</u> <u>D.4.2.3 Preferred requirements</u> <i>(b) If fixed monitoring stations are used as part of ongoing monitoring programmes, data should be made continuously available to the public.</i> <u>D.4.3 Routine periodic atmospheric monitoring programme</u> <u>D.4.3.2 Mandatory requirements</u> <i>(e) The results from the stations must be made available to the public through the Northern Territory Government provided portal in the requested format.</i>	The Code does not adequately address recommendation 9.5. <u>Comments</u> • In relation to routine periodic monitoring, D4.3.2(e) of the Code requires results to be made publicly available, although it does not explicitly require the results to be made available online "on a continuous basis in real time" as required by the recommendation. • In relation to the regional methane assessment programme, publication of data from fixed monitoring stations is only a "preferred" requirement (see D.4.2.3). This seems insufficient to address the recommendation that all monitoring results be made publicly available. • Note also that, as mentioned above in relation to recommendation 9.3, there does not appear to be a requirement that baseline monitoring be made publicly available (see D.4.1).

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		It contains requirements for baseline and ongoing methane monitoring.	The NT Government's implementation website says: " <i>The government has commenced work on an online portal to enable timely public reporting.</i> "	The government claims it has started work on an online portal to enable public reporting, but drilling should not be allowed until this is ready and populated with data from the baseline assessment required by recommendation 9.3, as well as the results of ongoing monitoring by companies already undertaking exploration.
9.6	<i>That once methane emission concentration limits are exceeded, as soon as reasonably practicable the regulator must be notified, an investigation must be undertaken by the gas company to identify the source or sources of the emissions, and make-good provisions be carried out by the gas industry.</i>	The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019. The Code of Practice identifies the process gas companies must undertake if emission concentration limits are exceeded. The process includes giving notice to the regulator and undertaking an investigation. Cumulative impacts are also considered through the delivery of recommendations 14.19 and 14.21.	Code of Practice <u>D.5 Emissions Detection and Management</u> <u>D.5.6 Leak Remediation and Notification</u> (establishes requirements for managing, documenting, and notifying significant leaks). The <i>Petroleum (Environment) Regulations</i> require the Minister to publish notices/reports of reportable and recordable incidents – which we assume would include methane leaks.	The Code of Practice does not adequately meet recommendation 9.6. <u>Comments</u> - D.5.6.1 allows up to 30 days after detection for minor leaks to be repaired, which seems overly lenient. - The Code does not require the Company to notify the Minister of the leak unless it cannot repair the leak within 30 days. - The Code does not appear to require records of leaks to be made publicly available on an ongoing basis. - It is not clear if or how implementation of "make-good provisions" are incorporated into the Code.
9.7	<i>That the action framework outlined in Table 9.10 be implemented to lower fugitive methane emissions.</i> <i>Table 9.10 mitigation actions:</i> A. <i>Ensure that world leading practice regulations are implemented that are known to achieve lower methane emissions.</i> B. <i>Prescription-based regulation only, while achieving desirable outcomes, may restrict new technologies. There is a need to allow appropriate flexibility in the formulation of performance-based regulations.</i> C. <i>Ensure that there are appropriate incentives for compliance and penalties for non-compliance.</i> D. <i>Ensure that there are appropriate requirements for monitoring regulatory</i>	The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019.	Code of Practice <u>Part D — Methane emissions monitoring, leak management, detection and reporting</u>	The vagueness and breadth of recommendation 9.7 makes it difficult to assess to what extent it has been implemented. We conclude that it has been partially addressed via the Code. <u>Comments</u> Assessment of corresponding provisions in the Code: - The Code incorporates US NSPS 2016 and US EPA Method 21 (determination of VOC leaks from process equipment). - The leak detection instruments used should be "selected to ensure they are fit for purpose and maximise the probability of detecting methane leaks." USEPA Method 21 and optical gas imaging are identified as leak testing methods, but the operator can propose "other superior methods" if available. (D.5.3.2). - There do not seem to be any penalties for violating the Code in the Code itself, but "an

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	<i>compliance and that there are adequate resources.</i> <i>E. Ensure that there are appropriate requirements for monitoring emissions.</i> <i>F. Ensure that there are adequate resources to undertake monitoring and that this monitoring is undertaken by an independent organisation with the necessary expertise.</i> <i>G. These failure events can be mitigated by ensuring compliance with appropriate regulations, including undertaking rigorous risk assessment and ensuring that a formal leak detection and repair program is undertaken regularly.</i>			interest holder must demonstrate in an environment management plan (EMP) under the PER how the requirements of this Code will be met (see Schedule 1, cl 10 of the PER),” and the PER contains penalties. Code at 3.1(c). Regulation 31 of the PER notes that “a person who carries out a regulated activity in a manner that contravenes the current plan for the activity commits an offence” for which they may be liable for up to 200 penalty units. d) Section D.6 contains reporting requirements with regards to methane emissions. For example, the operator has to submit an annual report to the NT government on flowback activities, operation of reciprocating compressors, and leak detection survey results. It is unclear whether these annual reports will be made public. e) Section D.4.3 discusses the routine periodic atmospheric monitoring programme. Section D.5.2 includes requirements related to inspection frequency and procedure. f) “Leak detection and monitoring methods are selected to ensure that they are fit for purpose and are conducted by a suitably qualified person to maximise the probability of detecting methane leaks.” D.5.4.1. The definition of a “suitably qualified person” does not include independence as a requirement. The Code notes that it does not “cover independent validation and verification requirements for activities during the life-cycle of a well.” B.2. g) Interest holders have to conduct a risk assessment to identify risks posed by leaks (D.5.1.2(a)). Table 10 indicates the emission inspection minimum frequency for different facilities and systems. For example, all gas containing equipment following major maintenance (e.g. repacking, replacement of seals) has to be inspected within 48 hours of recommissioning. Low pressure pipeline and fittings, steel or high pressure pipelines, and processing plants must be inspected at least annually.
10.2	<i>That in consultation with the gas industry, landholders, Land Councils, local government and local communities, the Government mandates an appropriate setback distance from all gas well heads, pipelines and gas processing facilities to a habitable dwelling (including all buildings or</i>	The Northern Territory Government has worked with independent scientific experts to develop a Code of Practice relative to the Inquiry's recommendation. The Code is	Code of Practice <u>A.3 Surface activities mandatory requirements</u> <u>A.3.1 (f) Site selection and planning</u> <i>All petroleum infrastructure including, petroleum wells, pipelines and gas processing facilities must have a setback distance of at least 2km from an existing or proposed</i>	The Code adequately addresses recommendation 10.2. <u>Comments</u> The recommendation would be more complete if the Code explicitly mentioned this same setback for other facilities associated with fracking that have

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	<i>premises where people reside or work, schools and associated playgrounds, permanent sporting facilities and hospitals or other community medical facilities) in order to minimise risks identified in HHRA reports, including potential pathways for waterborne and airborne contaminants. Such setback distances should not be less than 2 km and should apply to all exploration and production activities.</i>	legally enforceable through the Petroleum (Environment) Regulations 2016. The finalised Code was published on 12 June 2019. Appropriate setback distances are enforceable via legislation. Setback distances are 2 km from a well head, pipeline or gas processing facility.	<i>habitable dwelling including all buildings or premises where people reside or work, schools and associated playgrounds, permanent sporting facilities and hospitals or other community medical facilities.</i>	detrimental health effects, including wastewater treatment and storage, and chemical storage areas. These facilities may be included implicitly in the "all petroleum infrastructure," though it will be important to assess the implementation of this regulation to ensure it does.
11.1	<i>That gas companies be required to obtain an Authority Certificate prior to the grant of any exploration and production approvals.</i>	The Petroleum (Environmental) Regulations 2016 were amended so that from 11 June 2019 the Minister for Environment and Natural Resources cannot approve an Environment Management Plan unless an Authority Certificate under the Northern Territory Aboriginal Sacred Sites Act 1989 is included.	Petroleum (Environment) Regulations have been amended as follows: <u>Division 2 Minister's decision about approval of environment management plan</u> <u>9 Approval criteria for plan</u> (1) <i>The approval criteria for an environment management plan are that the plan must:</i> (d) <i>include an Authority Certificate in relation to the land on which the activity will be carried out.</i>	The PER adequately addresses recommendation 11.1. <u>Comments</u> • Stop the clock provisions should be mandated.
11.2	<i>That the Aboriginal Areas Protection Authority:</i> <i>be provided with a copy of any application to conduct hydraulic fracturing for onshore shale gas under petroleum environment legislation at an early stage of the assessment and approval process;</i> <i>be given an adequate opportunity to explain the application to custodians; and</i> <i>be given an adequate opportunity to comment on the application and have those comments considered by the decision-maker.</i>	Recommendation 11.2 of the Inquiry requires the Authority to gain an understanding of and comment on the proposed Hydraulic Fracturing activities, consult custodians on the proposals and provide comments to the relevant decision maker. This will take place in connection with Environment Management Plans (EMP) and Environmental Impact Statements (EIS). Aboriginal Areas Protection Authority and the Department of Environment, Parks and Water Security continue to monitor and work on processes with regular reviews to ensure appropriate outcomes are achieved."		The only way to assess completion of this recommendation is through a case-by-case approach.
11.3	<i>That the Sacred Sites Act be amended to protect all sub-surface features of a sacred site.</i>	The Aboriginal Areas Protection Authority received legal advice on the extent of protection to sub-surface sites provided by the	The government has opted not to implement this recommendation.	This recommendation has intentionally not been implemented. <u>Comments</u>

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		Northern Territory <i>Aboriginal Sacred Sites Act 1989</i>. This advice was considered by the Aboriginal Areas Protection Authority and the Authority consulted with the relevant Land Councils. It was determined that no amendments are required to the <i>Aboriginal Sacred Sites Act 1989</i> to protect sub-surface features.		The NT government did not identify an alternative way of protecting sub-surface features of sacred sites. As such, it does not seem like the Inquiry's concerns that led up to Recommendation 11.3 have been addressed. The Fracking Inquiry Final Report at 285-86 states: "<i>The Panel's strong view is that it should be put beyond doubt that features of a sacred site, and sacred sites themselves, can be underground, and must be protected. ... Having regard to the support for this recommendation received by the Panel, including in the course of community consultations, the Panel has retained Recommendation 11.3, but notes that the usual practice of stakeholder engagement should take place before initiating changes to legislation.</i>"
11.4	<i>That gas companies be required to provide a statement to native title holders containing information of the kind required under section 41(6) of the Land Rights Act for the purposes of negotiating an onshore shale gas exploration agreement under the future act provisions of the Native Title Act.</i>	The Northern Territory Government has updated its Petroleum Exploration Permit Application and Conditions guideline to reflect the requirement for petroleum companies seeking to negotiate an exploration agreement on Native Title Land, to provide a statement to native title claimants in line with the provisions of section 41(6) of the <i>Aboriginal Land Rights Act 1976</i> regarding potential future exploration activity. This will ensure native title claimants have a clear understanding of the nature of the potential future exploration activity. The <i>Aboriginal Land Rights Act 1976</i> s41(6) details in a very prescriptive nature the information that is required to be provided by petroleum companies (regarding potential exploration activities) to both inform and commence negotiating an exploration permit with Traditional Owners on Aboriginal Land. The <i>Native Title Act 1998</i> is Commonwealth legislation and cannot be amended by the Northern Territory Government.	Petroleum Act 1984 <u>s. 57F</u> Notification of native title holders etc. (1) <i>Within 14 days after the notification event or within the further time allowed in writing by the Minister:</i> (a) <i>if the prescribed petroleum act is an act to which section 24MD(6B) of the Native Title Act applies – the Minister must serve written notice of the making of the application on the persons referred to in section 57E(a), (b) and (c) and on the Native Title Registrar; or</i> (b) <i>if the prescribed petroleum act is an act to which section 57C(1)(b) refers – the applicant must serve written notice of the making of the application on the persons referred to in section 57E(a), (b) and (c) and on the Native Title Registrar.</i> The Aboriginal Land Rights Act 1976 <u>s41(6)</u> (6) <i>The application shall set out a comprehensive proposal which includes, but is not limited to, the following particulars:</i> (a) <i>a description of the applicant and of the business activities of the applicant;</i> (b) <i>a description of the affected land by reference to a map showing roads, topographical features, residential areas and other relevant features;</i> (c) <i>a copy of the instrument by which the consent of the Northern Territory Mining Minister was given and of any conditions relevant to the potential impact of the exploration works on the affected land and on Aboriginals, being conditions that are, under a law of the Northern Territory relating to mining for minerals, likely to be conditions to which the grant of the exploration licence will be subject;</i> (d) <i>an outline of the proposed exploration program stating, as far as practicable, the location, and likely effect, of proposed exploration works, and including details of:</i> (i) <i>the anticipated period of activity upon such works;</i>	This recommendation has not been implemented. <u>Comments</u> - The Petroleum Exploration Permit Application and Conditions Guidelines are not binding and therefore cannot be used to implement this recommendation. - The <i>Aboriginal Land Rights Act 1976</i>, s41(6) details the requirements that gas companies must fulfill when seeking approval by the Minister for gas exploration permits. It does not require that gas companies specifically provide a statement to native title holders containing such information. It does, however, require that this information be put together in the gas company's application. - The Petroleum Act requires gas companies to provide notification of its application to native title holders where relevant. These legal requirements would not necessarily "ensure native title claimants have a clear understanding of the nature of the potential future exploration activity" but would appear to fulfill this recommendation.

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			(ii) proposed and possible exploration techniques; (iii) the extent to which exploration activities will, or are likely to, affect the environment inside and outside the affected land; (iv) the proposed method and amount of vehicular access to and within the affected land with reference to any proposals to construct roads, landing strips or other access facilities; (v) the maximum number of people likely to be on the affected land from time to time; (vi) the proposed water, timber or other requirements to be obtained from the affected land; and (vii) proposals for minimising the effect of the proposed exploration works on the affected land; (viii) the estimated cost of exploration; (ix) the estimated geological potential of the area; (x) a proposal in relation to payments for exploration activities; (xi) the term of the exploration period; (xii) proposals for rehabilitation; and (xiii) proposals for minimising social impact;	
11.7	That Land Councils, traditional Aboriginal owners and gas companies consider making all, or if this is not appropriate, part of petroleum exploration agreements publicly available.	The Northern Territory Government consulted Land Councils affected by existing exploration permits and the Australian Petroleum and Production Exploration Association (APPEA) on the implementation of this recommendation. Land Councils and APPEA considered the request to make confidential Petroleum Exploration Agreements made under the <i>Native Title Act 1993</i> or <i>Aboriginal Land Rights Act (Northern Territory) 1976</i>, between Traditional Owners and exploration companies publicly available, and advised they do not support implementation of this request. Petroleum exploration agreements involving potential hydraulic fracturing will remain confidential.		This recommendation has intentionally not been implemented.

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14.2	<i>That the Minister must immediately notify the public of any proposed land release for any onshore shale gas exploration.</i> <i>That the Minister must consult with the public and stakeholders and consider any comments received in relation to any proposed land release.</i> <i>That the Minister be required to take into account the following matters when deciding whether or not to release land for exploration:</i> <i>the prospectivity of the land for petroleum;</i> <i>the possibility of co-existence between the onshore gas industry and any existing or proposed industries in the area; and</i> <i>whether the land is an area of intensive agriculture, high ecological value, high scenic value, culturally significant or strategic significance.</i> <i>That the Minister publish a statement of reasons why the land has been released and why coexistence is deemed to be possible.</i>	The <i>Petroleum Legislation Miscellaneous Amendments Bill 2019</i> was passed in the Legislative Assembly on 24 March 2020 and assented to on 30 March 2020. The <i>Petroleum Act 1984</i> was amended to require public notification of proposed land release and for submissions to be made including in relation to the possibility of co-existence. The amendments to the Act will commence in June 2020.	<i>Petroleum Act 1984</i> <u>Division 2 Exploration permits for petroleum</u> <i>(2A) A submission under subsection (2)(db) is limited to the following:</i> <i>(a) if there are other existing or proposed industries for a specified block – whether exploration of the specified block is possible at the same time;</i> <i>(b) whether the land of a specified block is suitable for exploration.</i> <i>Note for subsection (2A)(b)</i> <i>The submission may submit that the land is not suitable for exploration because the land is:</i> <i>(a) subject to intensive agriculture; or</i> <i>(b) of high ecological value; or</i> <i>(c) of high scenic value; or</i> <i>(d) culturally significant; or</i> <i>(e) of strategic importance to nearby residential areas</i> <u>16A Determination of release of blocks</u> <i>After the application period has ended, the Minister must:</i> <i>(a) consider any applications received and any submissions received; and</i> <i>(b) determine which blocks are to be released for exploration;</i> <i>(c) release the specified blocks for exploration; and</i> <i>(d) publish, on the Agency's website, the decision under paragraph (c) and the reasons why the blocks are appropriate for exploration.</i> <u>18 Notice of application for exploration permit</u> <i>(1) The Minister must cause to be published, at the expense of the applicant, in a newspaper circulating in the part of the Territory in which the application area is situated, or in any other publication that the Minister thinks fit, a notice containing:</i> <i>(c) the name of the applicant; and</i> <i>(d) a description of the application area sufficient to enable it reasonably to be identified or a map upon which the proposed boundaries of the application area are indicated by reference to named geographical features; and</i> <i>(d) a statement to the effect that a person may, within 2 months after the notice is published in the newspaper or other publication, lodge in writing with the Minister an objection to the grant.</i> <u>20 Determination of application for exploration permit</u> <i>(2) After the date specified in the notice given under section 19(2), the Minister must consider the following:</i> <i>(a) the application;</i>	The <i>Petroleum Act 1984</i> largely addresses recommendation 14.2. <u>Comments</u> The <i>Petroleum Act</i> requires that the Minister publish a statement of reasons for why the blocks are appropriate for exploration. The Act does not, however, require “a statement of reasons for why the land has been released and why coexistence is deemed to be possible”.

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			(b) any objections to the grant of the exploration permit; (c) any replies or other comments of the applicant; (d) any other information supplied to the Minister as requested under section 16(5)(a); (e) any other matter the Minister considers relevant to the application.	
14.3	That Government not approve any application for an exploration permit in relation to areas that are not prospective for onshore shale gas or where co-existence is not possible. Priority must be given to the areas identified in Recommendation 14.4.	The government's Reserved Block Policy, finalised in July 2019, determines areas of no petroleum potential and details exploration permits will not be granted over such areas.	The Reserved Block Policy identifies seven categories of reserved blocks: 1) parks and reserves, 2) towns and residential areas, 3) high conservation value, 4) Indigenous Protected Areas (IPAs), 5) areas of cultural significance, 6) high tourism value, and 7) no petroleum potential. The Policy then provides for a staged declaration process that will take place in four tranches: 1) immediate declaration, 2) declare after notice to park board, 3) declare after negotiation, and 4) consult with relevant land council. • "The areas in Tranche 1 are from Categories 1, 2, 3 and 7. They do not overlap any granted EPs and, except for Tjuwalyin (Douglas) Hot Springs Nature Park, are not on ALRA land. Stage 1 areas will be declared in the near future. • Tranche 2 comprises jointly managed parks and reserves on and off ALRA land. These parks and reserves will be declared as soon as the relevant Board of Management for the park or reserve has been notified of the proposed declaration. • Tranche 3 comprises areas that overlap granted exploration permits. Government will negotiate with the relevant petroleum companies regarding the relinquishment of these areas and declare reserved blocks accordingly. • Tranche 4 will occur when the Land Councils advise the Minister for Resources that either: (a) they support the declaration of proposed reserved blocks on ALRA land; or (b) they have not consented to the grant of an EP under s42(1) of the ALRA. The areas to be granted in Tranche 4 comprise approximately 60% of the total area to be declared."	The Reserved Block Policy adequately addresses recommendation 14.3.
14.4	That prior to the grant of any further exploration approvals, the following areas must be declared reserved blocks under s 9 of the Petroleum Act, each with an appropriate buffer zone: • areas of high tourism value; • towns and residential areas (including areas that have assets of strategic importance to nearby residential areas); • national parks; • conservation reserves; • areas of high ecological value; • areas of cultural significance; and • Indigenous Protected Areas.	The government's Reserved Block Policy was finalised in July 2019 in accordance with the Inquiry's recommendation, following community consultation. There will be a staged approach to declaring reserved blocks under s9 of the Petroleum Act. Areas to be declared a reserved block and maps of the areas can be found here	The NT government has published a Reserved Blocks Policy to implement this recommendation (see here and here). The Policy identifies (largely through maps) the proposed reserved blocks. It contains some description of the data sets used to underpin the maps. The Policy sets out a proposal for four tranches of declarations (<i>i.e.</i>, identifies the order of declarations). The tranches are based on whether consultation or negotiation will be required prior to the declaration of reserved block.	The Reserved Blocks Policy does not adequately address recommendation 14.4. <u>Comments</u> • There are no clear criteria for each reserved block category identified by the Inquiry. • There is limited and/or inadequate data or evidence supporting the majority of the categories. • The Policy effectively ignores some categories altogether, based on the false assumption that existing legislative protections are sufficient (<i>e.g.</i>, areas of cultural significance). • There are no buffer zones identified for proposed reserved blocks. • There is no clear process to enable the ongoing identification of no-go zones based on new or improved data (especially the SREBA).

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				Also, as we understand it, only reserved blocks from Tranche 1 and 2 have been declared to date. This list is comprised of national parks, areas for future water reserve development, and municipal areas. Blocks that are likely to be in greater conflict with petroleum interests have not yet been declared, but should be declared prior to any additional exploration permits being granted.
14.5	<i>That the Government immediately considers and implements mechanisms to retrospectively apply Recommendation 14.4 to granted exploration permits.</i>	The government's Reserved Block Policy determines that it will be negotiating with exploration permit holders that have identified reserved blocks on their tenure to relinquish those areas from their permit area.	Reserved Blocks Policy Tranche 3 includes areas where there is a granted exploration permit. The Department of Industry, Tourism and Trade will negotiate with the permit holders to relinquish those areas. The NT government has an updated list of areas declared reserved blocks here.	The Reserved Blocks Policy adequately meets recommendation 14.5, but we have concerns about its implementation. <u>Comments</u> - Analysis of how effective retrospective protection of important areas in Tranche 3 requires a case-by-case approach. - However, it does not appear that any exploration permit blocks have been adjusted thus far.
14.6	<i>That a statutory land access agreement be required by legislation.</i> <i>That prior to undertaking any onshore shale gas activity on a Pastoral Lease (including but not limited to any exploration or production activity), a land access agreement must be negotiated and signed by the Pastoral Lessee and the gas company.</i> <i>That breach of the land access agreement be a breach of the relevant exploration or production approval giving rise to the onshore shale gas activity being carried out on the land.</i>	The <i>Petroleum Legislation Miscellaneous Amendments Bill 2019</i> was passed in the Legislative Assembly on 24 March 2020 and was assented to on 30 March 2020. The amendments to the Act commenced in June 2020 and allow for regulations to be made in relation to land access. The government consulted with affected stakeholders on draft <i>Petroleum Regulations</i> that detail the requirements of statutory land access agreements. The <i>Petroleum Regulations 2020</i> have been made by the Administrator and commence 1 January 2021.	Petroleum Regulations 2020 (NT) <u>Division 2</u> <u>Requirement for access agreements</u> <u>12 Access agreement required before commencement of operations</u> <i>(1) Subject to subregulation (2), an interest holder must not commence regulated operations on any particular area of land except in accordance with an approved access agreement.</i> Note for subregulation (1) Regulation 47 provides that it is an offence for an interest holder to commence regulated operations on land without the land being the subject of an approved access agreement.	The <i>Petroleum Regulations 2020</i> do not adequately address 14.6. <u>Comments</u> - The <i>Petroleum Regulations 2020</i> do require access agreements to be in place before commencement of petroleum operations (including exploration permits and other preliminary activities). - There do not appear to be any provisions specifically about pastoral leases. - While it is an offence to commence regulated operations on land without an approved access agreement under the <i>Petroleum Regulations 2020</i>, these regulations do not specifically state that a breach of the access agreement is a breach of the relevant exploration or production approval.
14.7	<i>That in addition to any terms negotiated between the pastoralist and the gas company, the statutory land access agreement must contain the above standard minimum protections for pastoralists.</i> <u>Minimum Protections</u> - minimum notice periods, given either orally or in writing, except in the case of emergencies; - an obligation to conduct the onshore shale gas activities in a manner that minimizes disturbance to livestock and property;	The <i>Petroleum Legislation Miscellaneous Amendments Bill 2019</i> was passed in the Legislative Assembly on 24 March 2020 and was assented to on 30 March 2020. The amendments to the Act commenced in June 2020 and allow for regulations to be made in relation to land access. The government consulted with affected stakeholders on draft	Petroleum Regulations 2020 <u>Division 2</u> <u>Requirement for access agreements</u> <u>13 Parties</u> <i>(1) The parties to an approved access agreement are: (a) the interest holder of the relevant petroleum interest; and (b) the designated person of the relevant land.</i> <u>Schedule 2 Standard minimum protections</u>	The <i>Petroleum Regulations 2020</i> adequately address 14.7. <u>Comments</u> - There do not appear to be any provisions specifically about pastoral leases. - However, the "designated person of the relevant land" presumably refers to pastoralists. - The Schedule 2 Standard Minimum Protections explicitly include all of the protections called for in the recommendation.

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	• <i>an obligation to return any gates to their original position unless advised otherwise by the Pastoral Lessee;</i> • <i>an obligation to obtain the Pastoral Lessee's consent prior to the erection of any gate, fence or other barrier on the land;</i> • <i>an obligation to repair any gate, fence, grid or other barrier on the land damaged or harmed by the gas company or any subcontractor engaged in onshore shale gas activity on the land;</i> • <i>agreement upon the location and size of any camps on the land necessary to conduct the onshore shale gas activities;</i> • <i>notification to the pastoral lessee as soon as practically possible of all spills, incidents, harm or damage to the Pastoral Lease and its infrastructure and operation;</i> • <i>a minimum amount of compensation payable for each well drilled (see the discussion in Section 14.6.1.6 below);</i> • <i>compensation for any decrease in the value of the land;</i> • <i>'make good' provisions for any damage or harm to the water (surface and ground), land, infrastructure, or operation of the Pastoral Lease. The onus of proof is to be reversed so that the obligation is on the gas company to demonstrate that the harm or damage was not caused by the onshore shale gas activities;</i> • <i>indemnification for any harm or damage caused by any third party engaged by the gas company or any of its sub-contractors to the water (surface and ground), land, infrastructure or operation of the Pastoral Lease;</i> • <i>the provision of appropriate guarantees where the holder of the approval to carry out the relevant onshore shale gas activity is not the person or company undertaking the activities on the land;</i> • <i>to the extent reasonable and permitted by law, a release by the gas company of the Pastoral Lessee for any death or personal injury to the gas company's personnel, damage to or loss of the gas company's property or consequential loss, including financial loss;</i>	<i>Petroleum Regulations that detail the requirements of statutory land access agreements.</i> <i>The Petroleum Regulations 2020 have been made by the Administrator and commence 1 January 2021.</i>		

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	• restrictions on, and notifications of, the sale, assignment or transfer of any rights or obligation by the gas company; • no confidentiality clause unless by mutual agreement of the parties; • payment of all reasonable legal, financial and technical fees incurred in respect of the agreement must be borne by the gas company holding the approval for the activity; • the payment of all duties and taxes payable in respect of the land access agreement; • clear dispute resolution mechanisms; • clear termination mechanisms; • agreement on access points, roads and tracks prior to entering onto the lease; • induction training for all employees or contractors of the gas company; • an obligation to prevent the spread of weeds, feral pests and diseases, and to ensure biosecurity; • clear obligations with respect to rehabilitation and remediation, including the provision for the independent assessment of all rehabilitation and remediation; and • the ability to renegotiate the land access agreement after a specified period of time, including post-exploration and pre-production			
14.8	That prior to the grant of any further exploration permits or production approvals, the Government enacts a minimum mandatory compensation scheme payable to Pastoral Lessees for all onshore shale gas production on their Pastoral Lease. Compensation should be calculated by reference to the impact that the development will have on the Pastoral Lease and the Pastoral Lessee, for example, the number of wells drilled, the value of the land (both before and after), and the area of land cleared and rendered unavailable for pastoral activities.	The Petroleum Legislation Miscellaneous Amendments Bill 2019 was passed in the Legislative Assembly on 24 March 2020 and was assented to on 30 March 2020. The amendments to the Act commenced in June 2020 and allow for regulations to be made in relation to land access. The government consulted with affected stakeholders on draft Petroleum Regulations that detail the requirements of statutory land access agreements. The Petroleum Regulations 2020 have been made by the Administrator and commence 1 January 2021.	Petroleum Regulations 2020 <u>Part 3 Compensation</u> <u>6 Compensation to owners</u> (1) For section 81(1)(c) of the Act, the following circumstances are prescribed: (a) the drilling of a well on the land by the interest holder; (b) to the extent of an owner's or occupier's respective interests in the land – any decrease in the market value of the land caused by regulated operations carried out on the land by the interest holder. (2) For section 81(7A) of the Act: (a) the compensation payable under subregulation (1)(a) may be: (i) an amount for each well; or (ii) an amount represented by improvements or work on the land provided or carried out by the interest holder; and (b) the compensation payable under subregulation (1)(b) may be: (i) an amount equal to the decrease in market value of the owner's or occupier's interest in the land (as the case may be); or (ii) an amount represented by improvements or work on the land provided or carried out by the interest holder.	The Petroleum Regulations 2020 adequately address recommendation 14.8. <u>Comments</u> • There do not appear to be any provisions specifically about pastoral leases, but the Petroleum Regulations 2020 do provide for compensation to landowners in general based on the impact the development will have on the land.

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			(3) <i>The method of compensation under subregulation (2)(a) or (b) will be determined by agreement between the parties or, if they are unable to agree, by the Tribunal.</i> <u>Schedule 2</u> (12) <i>Compensation for drilling</i> (13) <i>Compensation for decrease in value of land</i> (14) <i>General obligation to make good</i>	
14.10	<i>That any person may lodge an objection to the proposed grant of an exploration permit within a prescribed time limit.</i> <i>That all objections received by the Minister must be published online. That the Minister must, in determining whether to grant or refuse the application, take into account any objection received.</i>	The <i>Petroleum Legislation Miscellaneous Amendments Bill 2019</i> was passed in the Legislative Assembly on 24 March 2020 and assented to on 30 March 2020. The <i>Petroleum Act 1984</i> was amended to allow any person to lodge an objection to the proposed grant of an exploration permit and for those objections to be published online. The amendments to the Act will commence in June 2020.	<i>Petroleum Act 1984</i> <u>Section 18</u> (1) <i>The Minister must cause to be published, at the expense of the applicant, in a newspaper circulating in the part of the Territory in which the application area is situated, or in any other publication that the Minister thinks fit, a notice containing:</i> *** (e) <i>a statement to the effect that a person may, within 2 months after the notice is published in the newspaper or other publication, lodge in writing with the Minister an objection to the grant.</i> <u>Section 19</u> (1) <i>Objections to the grant of an exploration permit may be lodged in response to a notice published under section 18(1) in accordance with the statement referred to in section 18(1)(e).</i> (2A) <i>The Minister must, as soon as practicable after receiving the objections, publish the objections on the Agency's website.</i>	The <i>Petroleum Act 1984</i> adequately address recommendation 14.8. <u>Comments</u> • Anyone can lodge an objection to a proposed grant of an exploration permit within 2 months of the notice publication. • It is not possible to assess whether the Minister takes all objections into account without considering each exploration permit application on a case-by-case basis.
14.11	<i>That the Petroleum Act be amended to make the principles of ESD a mandatory relevant consideration for any decision made under that Act in relation to any onshore shale gas industry.</i> <i>That the principles of ESD must be taken into account and applied by a decision-maker in respect of all decisions concerning any onshore shale gas industry.</i>	The <i>Petroleum Legislation Miscellaneous Amendments Bill 2019</i> was passed in the Legislative Assembly on 24 March 2020 and assented to on 30 March 2020. The <i>Petroleum Act 1984</i> was amended to require the principles of ecologically sustainable development are considered in decision-making under the <i>Petroleum Act 1984</i> and the <i>Petroleum (Environment) Regulations 2016</i>. The amendments to the Act commenced in June 2020.	<i>Petroleum Act 1984</i> <u>Part 1A Principles of ecologically sustainable development</u> <u>6A Principles of ecologically sustainable development</u> (1) <i>The Minister must consider and apply the principles of ecologically sustainable development in making the following decisions under this Act:</i> (a) <i>the decisions specified in Schedule 1;</i> (b) <i>a decision made under a direction given by the Minister under section 71(1);</i> (c) <i>any other prescribed decision.</i> (2) <i>Unless otherwise expressly provided, in making a decision under this Act and stating the reasons for that decision, the Minister is not required to specify how the Minister considered or applied these principles.</i> <u>133 Decision in relation to variation of condition of production licence</u> <i>The Minister is not required to consider and apply the principles of ecologically sustainable development in making a decision made under section 55(2) in relation to an application under section 55(1) made before the commencement.</i> <u>55 Variation etc. of condition of production licence</u>	The <i>Petroleum Act 1984</i> does not adequately address recommendation 14.11. <u>Comments</u> • Although the recommendation states that the principles of ecologically sustainable development (ESD) should be considered for any decision made under the <i>Petroleum Act</i> relating to the onshore shale gas industry, the Act provides for an exemption where the Minister is varying, suspending, or waiving a condition of a production licence. This exemption could result in negative environmental impacts depending on the condition at issue. • Whether the principles of ESD are taken into account and applied by the decision-maker for all decisions can only be assessed on a case-by-case basis.

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			(1) Subject to Part IIA if applicable, a production licensee may apply to the Minister to vary, suspend or waive a condition of his licence. (1A) An application under subsection (1) must be accompanied by the prescribed fee. (2) Subject to Parts IIA and IIB as applicable, on receiving an application under subsection (1), the Minister may, by notice served on the licensee, vary, suspend or waive a condition of the licence, in accordance with the application. Environment Protection Act 2019 Ecologically sustainable development means development that improves the total quality of human life, both now and in the future, in a way that: (a) maintains the ecological processes on which all life depends; and (b) recognises the need for development to be equitable between current and future generations.	
14.12	<i>That the Minister must not grant any further exploration permits unless satisfied that the applicant (including any related entity) is a fit and proper person, taking into account, among other things, the applicant's environmental history and history of compliance with the Petroleum Act and any other relevant legislation both domestically and overseas.</i> <i>That failure to disclose a matter upon request relevant to the determination of whether an applicant is a fit and proper person will result in civil and/or criminal sanctions under the Petroleum Act.</i> <i>That the Minister's reasons for determining whether or not the applicant is a fit and proper person be published online.</i>	The Petroleum Act 1984 was amended in March 2019 to require an appropriate person test for the issuing of a permit. The changes to the legislation came into effect in April 2019.	Petroleum Act 1984 Section 15A of the Petroleum Act lays out factors for determining whether the applicant is "an appropriate person to hold a permit or licence under the Act," including the applicant's compliance with prescribed legislation (whether the applicant has had a license revoked or suspended, record of compliance with the prescribed environmental legislation of any director where the applicant is a corporation). Section 15A(6) lists the prescribed legislation and prescribed environmental legislation. Both of these lists include a catch-call for foreign legislation ("an Act of another jurisdiction that is similar in nature and purpose to an Act listed above"). Section 15A(4) <i>"The Minister may require an applicant or associated entity to provide more information in relation to any matter in order for the Minister to determine whether the applicant or entity is an appropriate person to hold a permit or licence under this Act."</i> Section 15A(5) provides for publication: <i>"The Minister must publish, on the Agency's website, the reasons why the Minister has determined that an applicant, and any associated entity of the applicant, is or is not an appropriate person to hold a licence or permit under this Act."</i> 106 Offences generally (1) A person shall not contravene or fail to comply with this Act or a direction or notice under this Act. (2) A person who contravenes or fails to comply with this Act or a direction or notice under this Act for which a penalty is not provided by this Act, other than this section, is punishable upon being found guilty by a maximum penalty of: (a) if the offender is a natural person – 100 penalty units; or (b) if the offender is a body corporate – 500 penalty units.	Section 15A of the <i>Petroleum Act</i> adequately addresses recommendation 14.12. <u>Comments</u> Section 15A(4) read together with Section 106 provides for penalties when an applicant fails to comply with a request for more information as part of the appropriate person test.

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14.15	<i>That prior to the grant of any further exploration approvals, all draft EMPs for hydraulic fracturing must be published in print and online and available for public comment prior to Ministerial approval.</i> <i>That all comments made on draft EMPs must be published online.</i> <i>That the Minister must take into account comments received during the public consultation period when assessing a draft EMP.</i>	Petroleum (Environment) Regulations 2016 were amended on 19 December 2018 to meet the requirements of this recommendation. All draft Environment Management Plans seeking Minister's consideration for drilling of petroleum wells and hydraulic fracturing activities must be advertised for a 28 day public comment period; comments received must be published online; and the Minister must take into account all comments received before making a decision on the draft Environment Management Plan.	<i>Petroleum (Environment) Regulations</i> amendment provides for this. See clause 8A generally. <u>8A Publishing certain plans for comment</u> (1) <i>The Minister must publish an environment management plan if:</i> (a) <i>the plan is submitted to the Minister under regulation 6; and</i> (b) <i>the plan relates to the drilling of a well or to hydraulic fracturing; and</i> (c) <i>the plan complies with regulation 8.</i> (2) <i>The plan must be published, in any manner the Minister considers appropriate, within 14 days of the Minister receiving the plan.</i> (3) <i>The requirement to publish does not apply to:</i> (a) <i>information received under regulation 10 [Minister may require further information]; or</i> (b) <i>a modified plan submitted under regulation 11 [Approval of plan, refusal to approve and other actions, which permits the Minister to allow the submission of a modified plan where the original does not meet the approval criteria]; or</i> (c) <i>a plan that relates to the drilling of a water bore.</i> (4) <i>The Minister must publish, with the plan, a notice stating the following:</i> (a) <i>that the plan is published for public comment;</i> (b) <i>that interested persons may submit written comments on the plan to the Minister no later than 28 days after the date of its publication;</i> (c) <i>the address to which comments may be sent or delivered;</i> (d) <i>that all comments received will be published.</i> (5) <i>In publishing a plan, the Minister:</i> (a) <i>must withhold from the public information of a commercially confidential nature; and</i> (b) <i>may withhold other information from the public if satisfied there are reasonable grounds for doing so.</i> <u>8B Public comments on plan</u> (1) <i>Interested persons may submit written comments on a plan published under regulation 8A to the Minister no later than 28 days after the date of its publication.</i> (2) <i>The Minister must publish any comments submitted under subregulation (1), in any manner the Minister considers appropriate, after the end of the 28 day period.</i>	The amendment to the <i>Petroleum (Environment) Regulations</i> does not adequately address the recommendation. <u>Comments</u> - The requirement to publish EMPs does not include: (a) modified plans submitted after the Minister considers that the original plan did not meet the approval criteria; or (b) additional information submitted at the request of the Minister. This leaves the provisions open to abuse to avoid public scrutiny. We recommend this provision be revised to require publication of modified plans and information provided at the request of the Minister. - The requirement to publish EMPs excludes information of a "commercially confidential nature" and any other information deemed "reasonable" by the minister. There is no guidance on what is "commercially confidential" or what may be deemed "reasonable" by the Minister. - Also, the Minister has discretion to publish public comments on the EMP "in any manner the Minister considers appropriate." This provision could be open to abuse to prevent public scrutiny. In practice, however, all the comments appear to be published online with the EMP upon the taking of a decision. - Finally, "all comments made on the EMPs" should include comments made by the Minister in requesting resubmissions of the EMPs. In practice, however, resubmission notices from the Minister to the applicant do not appear to be published online.
14.16	<i>That prior to the grant of any further exploration approvals, all notices and reports of environmental incidents, including reports about reportable incidents under the Petroleum Environment Regulations, must be published immediately upon notification in print and online.</i>	The Petroleum (Environment) Regulations 2016 were amended on 19 December 2018 to meet the requirements of this recommendation.	<i>Petroleum (Environment) Regulations</i> amendment allows for this: see clause 35A. <u>Clause 35A Publication of notices and reports</u> (1) <i>The Minister must publish the following documents:</i> (a) <i>written notice of a reportable incident under regulation 33;</i> (b) <i>a final report about a reportable incident under regulation 34;</i> (c) <i>a report about recordable incidents under regulation 35.</i>	The <i>Petroleum (Environment) Regulations</i> adequately address this recommendation. <u>Comments</u> The regulations require the Minister to withhold information "of a commercially confidential nature" and allow her to if there are "reasonable grounds," without providing an guidance on the exercise of the Minister's discretion.

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			(2) <i>The document must be published, in any manner the Minister considers appropriate, as soon as practicable but no later than 2 business days of the Minister receiving the notice or report.</i> (3) <i>In publishing the document, the Minister:</i> (a) <i>must withhold from the public information of a commercially confidential nature; and</i> (b) <i>may withhold other information from the public if satisfied that there are reasonable grounds for doing so.</i>	There should be a transparent, easy, and consistent way for the public to access this information. The vagueness of the location of the information, as well as the right of withholding, does not align with the Inquiry's recommendation.
14.18	<i>That prior to the grant of any further exploration approvals, the Government develops and implements enforceable codes of practice with minimum prescriptive standards and requirements in relation to all exploration and production activities, including but not limited to, land clearing, seismic surveys, well construction, drilling, hydraulic fracturing and decommissioning and abandonment.</i>	The Petroleum (Environment) Regulations 2016 were amended on 19 December 2018 to meet the requirements of this recommendation.	Petroleum Act 1984 allows for this. Section 118(2)(ra): <i>...the Administrator may in the Regulations prescribe for or in relation to ... the making and the enforcement of a code of practice, including by providing that a contravention of the code is an offence against the regulations</i> The final Code of Practice was released on 31 May 2019.	The Code of Practice adequately addresses recommendation 14.18. The details of the Code do not always adhere faithfully to the larger set of recommendations offered by the Inquiry. <u>Comments</u> - As noted throughout this document, one major concern with the Code is that many of the "requirements" are "preferred," rather than "mandatory." This significantly weakens the implementation of the recommendations. - The Code relies on other guidelines (e.g., the NT Weed Management Planning Guide, or the DENR's Land Clearing Guidelines) that may or may not align with the larger set of recommendations of the panel.
14.19	<i>That prior to granting any further exploration approvals, cl 3(2)(b) of Schedule 1 of the Petroleum Environment Regulations be amended to read as follows:</i> <i>"3(2)(b) [delete 'as far as practicable'] any cumulative effects of those impacts and risks when considered both together and in conjunction with other events, activities or industries, including any other petroleum activities and extractive industries, that have occurred or that may occur in or near the location of the activity or in or near the region, area or play where the regulated activity is located".</i>	The Petroleum (Environment) Regulations 2016 were amended on 19 December 2018 to meet the requirements of this recommendation.	Petroleum (Environment) Regulations were amended in December 2018 to implement this recommendation. Schedule 1, clause 3(2): The assessment mentioned in subclause (1)(a) must be of: (a) <i>all the environmental impacts and environmental risks arising directly or indirectly from:</i> (i) <i>all aspects of the regulated activity; and</i> (ii) <i>potential emergency conditions, whether resulting from an incident or any other reason; and</i> (b) <i>the cumulative effects of those impacts and risks when considered with each other and in conjunction with any other activities or events that occurred or may occur in or near the permit area for the regulated activity.</i> Example for clause 3(2)(b) of other activities or events: Activities or events associated with: (a) <i>other exploration for, or production of, petroleum; or</i> (b) <i>the exploration for, or extraction of, minerals or extractive minerals.</i>	The PERs do not adequately address recommendation 14.19 <u>Comments</u> - The panel provided precise language in this context that should be adhered to precisely for the following reasons: a) In its discussion preceding this recommendation, on pages 413-414 of the final report, the Inquiry raised concerns about "exploration creep," being the risk that large numbers of wells may be drilled and fracked under exploration permits. b) This recommendation is intended to fulfil the Panel's goal to ensure that safeguards must exist to prevent exploration creep and require cumulative impacts of any onshore shale gas activities during the exploration phase to be assessed, taken into account and appropriately mitigated. c) The Panel also intended the recommendation to remove the previous ambiguity about the

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				geographical reach of assessment of cumulative impacts in EMPs. d) As such, in our view, the limitation in the PER to assess only cumulative impacts “in or near the permit area” fails to fulfill the requirements of the recommendation to assess impacts “in or near the location of the activity and in or near the region, area or play where the regulated activity is located.” e) Additionally, the examples given in the PERs of what constitutes “other activities or events” is limited to petroleum and mining activities, but there may be other activities in the project area that are “other events, activities, or industries” that should be considered in cumulative impacts outside of these industries, such as cattle grazing.
14.20	<i>That the Minister must be satisfied that an applicant is a fit and proper person to hold a production licence, taking into account, among other things, the applicant's environmental history and history of compliance with the Petroleum Act and any other relevant legislation both domestically and overseas.</i> <i>That failure to disclose a matter relevant to the determination of whether an applicant is a fit and proper person upon request will result in civil and/or criminal sanctions under the Petroleum Act.</i> <i>That the Minister's reasons for determining whether or not the applicant is a fit and proper person be published online.</i>	The <i>Petroleum Act</i> was amended in March 2019 to require an appropriate person test for the issuing of a licence. The changes to the legislation came into effect in April 2019.	Section 15A of the <i>Petroleum Act 1984</i> lays out factors for determining whether the applicant is “an appropriate person to hold a permit or licence under the Act.”	Section 15A of the <i>Petroleum Act</i> adequately addresses recommendation 14.20. <u>Comments</u> Section 15A(4) read together with Section 106 provides for penalties when an applicant fails to comply with a request for more information as part of the appropriate person test.
14.21	<i>That as part of the environmental assessment and approval process for all exploration and production approvals, the Minister be required to consider the cumulative impacts of any proposed onshore shale gas activity.</i>	The environmental assessment processes and the assessment of environment management plans under the <i>Petroleum (Environment) Regulations 2016</i> already provides scope for the assessment of cumulative impacts where appropriate. The NT EPA is providing advice to the Minister for Environment and Natural Resources on all environment management plans to assist with the Minister's consideration of cumulative impacts.	Petroleum (Environment) Regulations 2016: <u>Schedule 1, Part 1</u> <u>3 Assessment of environmental impacts and environmental risks</u> (1) A plan must include: (a) details of all environmental impacts and environmental risks of the regulated activity described in the plan and an assessment of those impacts and risks; and (b) a description of the process used to assess the environmental impacts and environmental risks. (2) The assessment mentioned in subclause (1)(a) must be of: (a) all the environmental impacts and environmental risks arising directly or indirectly from: (i) all aspects of the regulated activity; and (ii) potential emergency conditions, whether resulting from an incident or any other reason; and	The PER adequately address recommendation 14.21. EMPs must assess cumulative impacts, and the Minister must approve these plans.

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		The Environment Protection Act 2019 establishes a reformed environmental impacts assessment and approval process for the Territory. It commenced on 28 June 2020 and requires environmental impact assessment and approval of proposed actions that have the potential to have a significant impact on the environment. The Act defines impact as including cumulative impacts.	(b) <i>the cumulative effects of those impacts and risks when considered with each other and in conjunction with any other activities or events that occurred or may occur in or near the permit area for the regulated activity.</i> Example for clause 3(2)(b) of other activities or events: <i>Activities or events associated with: (a) other exploration for, or production of, petroleum; or (b) the exploration for, or extraction of, minerals or extractive minerals.</i> <u>Part 2 Environment management plans</u> <u>Division 1 Submission of environment management plan for approval</u> <u>6 Submission of plan for approval</u> <i>(1) An interest holder who proposes to carry out a regulated activity must first submit to the Minister, for approval, an environment management plan relating to the activity.</i>	
14.23	<i>That prior to the grant of any further exploration approvals, the Petroleum Act and Petroleum Environment Regulations be amended to allow open standing to challenge administrative decisions made under these enactments.</i>	The <i>Petroleum Act 1984</i> was amended in March 2019 to enable open standing for persons to seek judicial review of decisions within the <i>Petroleum Act 1984</i> and <i>Petroleum (Environment) Regulations 2016</i>, as outlined in the legislation. The changes to the legislation came into effect in April 2019.	Amendments to <i>Petroleum (Environment) Regulations</i> and <i>Petroleum Act 1984</i> allow this standing. <i>Petroleum (Environment) Regulations</i> <u>Division 7 Review of decisions</u> <u>Subdivision 1 Judicial review</u> <u>29AA Judicial review of decision</u> <i>Any person may seek judicial review by the Supreme Court of a decision specified in Schedule 1A, whether or not any right of the person has been affected by, or as a consequence of, the decision.</i> <i>Petroleum Act 1984</i> <u>Part II Division 6 Review of determinations</u> <u>Subdivision 1 Judicial review</u> <u>57ABA Judicial review of decision or determination</u> <i>Any person may seek judicial review by the Supreme Court of a decision or determination specified in the Schedule, whether or not any right of the person has been affected by, or as a consequence of, the decision or determination.</i>	The <i>Petroleum (Environment) Regulations 2016</i> and <i>Petroleum Act 1984</i> adequately address recommendation 14.23.
14.26	<i>That prior to the grant of any further exploration approvals, the Government develops and implements a robust and transparent compliance and monitoring strategy, having regard to the principles set out in the ANAO Administering Regulation: Achieving the right balance guide, and the policy in SA.</i>	The Departments of Primary Industry and Resources and Environment, Parks and Water Security published a Monitoring and Compliance Strategy in July 2019, which is publicly available on the DEPWS website.	A Compliance and Monitoring Strategy was released in July of 2019: https://denr.nt.gov.au/data/assets/pdf_file/0007/715543/Monitoring-and-compliance-strategy.pdf. Its 18 pages lay out principles of monitoring, and it is not actually a monitoring program for the industry, per se. The Strategy promises that the DENR will produce such a program in the future: <i>"The Department of Primary Industry and Resources has committed to 24 onsite regulatory inspections for petroleum activities in 2019-20, as detailed in the Agency's Key Performance Indicators, within the NT Government's Budget Paper 3 for 2019-20.</i> <i>The Department of Environment and Natural Resources is presently developing its compliance monitoring program which will be published on its website. This monitoring program will be targeted to the environmental impacts and risks</i>	The government's Compliance and Monitoring Strategy does not adequately address recommendation 14.26, which has the goal of achieving certainty and transparency (see pages 423-424 of the Inquiry's report). <u>Comments</u> • The Strategy appears to be a stopgap measure to enable exploration to proceed, given that it has few specifics beyond promising a monitoring program from DENR in the future. • The Strategy emphasizes the primary role of corporate reporting and third-party complaints, and notes that sanctions or revocation of a licence are a last resort. For example, see the pyramid figure on page 13, with "Preventative measures" as the

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			<i>identified in the Environment Management Plans currently being considered for approval.</i> <i>As an indicative guide, the following operational elements are likely to attract monitoring actions, whether it be through reporting, inspections or audits, and dependent on the level of risk.</i> 1. <i>Exploration</i> Initial site establishment (including native vegetation clearing); Geophysical and Geological (G&G) Surveys; Drilling and well construction; Civil construction; Well testing; Well interventions, activities and workovers; Well decommissioning; Site rehabilitation Monitoring and compliance strategy for onshore petroleum 2. <i>Production</i> Safety and System Integrity testing and maintenance; Management Plan Implementation Strategies; Drilling and well construction; Vegetation clearing; Civil construction; Geophysical and Geological surveys; Well interventions, activities and workovers; Facilities construction, operations and maintenance; Site rehabilitation; Transportation 3. <i>Decommissioning and Rehabilitation</i> Well abandonment or decommissioning; Facilities removal; Site rehabilitation; On-going monitoring and reporting." (see p. 10-11 of the Strategy).	foundation and "Punitive measures" as the much smaller tip. Also, on page 16, the Strategy states that it "promotes a strong culture of accountability, self-monitoring and reporting from Industry. The primary responsibility for monitoring compliance with environment management plans, operational licence conditions, codes of practice and national and international standards will reside with the interest holder."
14.27b	<i>That prior to any further exploration approvals being granted, a hotline be established permitting anonymous reporting about any onshore shale gas industry non-compliance. That all such reports be immediately investigated.</i>	An Onshore Gas Non-compliance Hotline was introduced in November 2018 to address recommendation 14.27b.	The community hotline can be found here.	This recommendation has been implemented.
14.34	<i>That prior to the grant of any further exploration approvals, in order to ensure independence and accountability, there must be a clear separation between the agency with responsibility for regulating the environmental impacts and risks associated with any onshore shale gas industry and the agency responsible for promoting that industry.</i>	The amendment to the Administrative Arrangement Orders were completed on 27 February 2019. This resulted in Minister for Environment and Natural Resources having administrative responsibility for provisions of the <i>Petroleum Act 1984</i> relating to environmental regulation of petroleum activities (including the <i>Petroleum (Environment) Regulations 2016</i> and the <i>Environmental Offences</i>). Minister for Primary Industry and Resources holds all other regulatory functions and powers under the <i>Petroleum Act 1984</i>. Amendments to the <i>Northern Territory Environment Protection Authority Act 2012</i> commenced on 30 November 2018 allowing	The government's implementation website says: <i>"The amendment to the Administrative Arrangement Orders were completed on 27 February 2019. This resulted in Minister for Environment and Natural Resources having administrative responsibility for provisions of the Petroleum Act 1984 relating to environmental regulation of petroleum activities (including the Petroleum (Environment) Regulations 2016 and the Environmental Offences). Minister for Primary Industry and Resources holds all other regulatory functions and powers under the Petroleum Act 1984.</i> <i>Amendments to the Northern Territory Environment Protection Authority Act 2012 commenced on 30 November 2018 allowing for additional members to be appointed to the NT EPA and introducing changes that will allow ministers to seek the authority's advice on a range of specific proposals and plans targeting improved environmental management and protection.</i> <i>Two new NT EPA members with extensive experience in the petroleum industry commenced on 1 January 2019 and the NT EPA has begun providing the Minister advice to inform decisions as to whether or not to approve Environment Management Plans and what conditions should be attached."</i> According to the Monitoring and Compliance Strategy published in July 2019, the roles of the Departments are divided as follows:	This recommendation has largely been implemented, with a few weaknesses. <u>Comments</u> - It appears that the two NT EPA members with "extensive experience in the petroleum industry" have spent much of their careers working in or on behalf of the oil and gas industry, making their "clear separation" from the industry questionable. - The Department of Industry, Tourism and Trade's maintenance of control over the decision about the Well Operations Management Plan (WOMP) is not in line with the recommendation.

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		for additional members to be appointed to the NT EPA and introducing changes that will allow ministers to seek the authority's advice on a range of specific proposals and plans targeting improved environmental management and protection. Two new NT EPA members with extensive experience in the petroleum industry commenced on 1 January 2019 and the NT EPA has begun providing the Minister advice to inform decisions as to whether or not to approve Environment Management Plans and what conditions should be attached.	<i>The Department of Primary Industry and Resources (the Resource Regulator) now has the principal functions of: promoting land release; managing titles, access; managing securities; assessing and approving Well Operations Management Plans (WOMP); assessing and approving Well Integrity Management Plans (WIMP); activity and production reporting; providing technical and operational standards and codes of practice; providing information and assessment of exploration permits, retention licenses and production licenses.</i> <i>The Department of Environment and Natural Resources (the Environment Regulator) has the principal function of: liaising with industry prior to lodging applications regarding environmental planning and management requirements for proposed projects; assessing the project specific environmental risks and impacts as provided through the environment management plan (EMP) and/or environmental impact statement (EIS); providing assistance to the Northern Territory Environment Protection Authority (NTEPA) and Minister for Environment and Natural Resources in determining whether an EMP approval should be granted and appropriate environmental standards and conditions to be included; monitoring and auditing compliance with EMPs and environmental legislative requirements; making enforcement decisions and recommendations to the Minister for Environment and Natural Resources for environmental offences.</i>	
16.2	<i>That an implementation framework including details of who, when and how each of the recommendations will be implemented, be completed within three months from any lifting of the moratorium.</i>	The implementation plan has been released and is available to view at hydraulicfracturing.nt.gov.au.	The Implementation Plan sets out a three-stage process for implementing the Inquiry recommendations. STAGE ONE – PLANNING Stage One outlines the tasks following the lifting of the moratorium. It covers setting up the governance arrangements for implementation, establishing the Onshore Shale Gas Community and Business Reference Group and starting work on some of the major reform areas. This Implementation Plan is the major milestone in Stage One. STAGE TWO – PREPARING FOR EXPLORATION Stage Two comprises implementing the recommendations that need to be done early including those that the Inquiry determined must be complete before any exploration involving drilling or hydraulic fracturing and stimulation of unconventional wells. The recommendations summarised in table 16.1 of the Inquiry final report are: • Codes of Practice for industry • transfer of environmental decisions regarding petroleum from the Minister for Primary Industry and Resources to the Minister for Environment and Natural Resources • baseline mapping and ongoing monitoring regimes for weeds, methane emissions and water quality near proposed drilling sites • commencement of a broader Strategic Regional Environmental and Baseline Assessment (SREBA). Our goal is to complete this by the end of 2018. STAGE THREE – EXPLORATION AND PREPARING FOR PRODUCTION Stage Three covers the balance of the Inquiry recommendations and will take a number of years to complete. Stage Three must be completed before any production approvals	The Implementation Plan largely addresses recommendation 16.2. <u>Comments</u> • The timeline for implementation, especially with regard to Stage Three, is vague.

Rec #	Final Report - detailed recommendation	How does the NT government justify the 100% implementation status?	How has the NT government implemented this recommendation?	Analysis of implementation of the Fracking Inquiry's recommendation
			are granted for unconventional gas. Many of the actions in Stage Three are still in planning and the detailed approach will be published in online updates to this plan. Actions in Stage Three may commence before Stage Two is complete.	
16.3	<i>That a centralised, well-resourced, experienced and skilled Implementation Unit be established immediately within the Department of Chief Minister to coordinate the development of the implementation framework.</i>	The Hydraulic Fracturing Inquiry Implementation Taskforce was established April 2018 in the Department of the Chief Minister and Cabinet.	<i>"The Hydraulic Fracturing Inquiry Implementation Taskforce has been established within the Department of the Chief Minister to coordinate the delivery of the Inquiry recommendations and articulate an approach to implementing each recommendation, mapped in the Implementation Plan.</i> <i>A Steering Committee of government Chief Executives guides the work of the Taskforce and assesses and manages risks to the delivery of this plan."</i> Scientific Inquiry into Hydraulic Fracturing Implementation Plan at 5.	This recommendation has been fully implemented.
16.4	<i>That a Community and Onshore Shale Gas Industry and Business Reference Group be established to provide feedback to Government on the development of an implementation framework, and its subsequent execution, if the Government lifts the moratorium.</i>	The Onshore Shale Gas Community and Business Reference Group has been formed and had its first meeting on 3 July 2018. The Reference Group has had six meetings in total as of March 2020. The Terms of Reference and Communique from meetings can be downloaded here .	<i>"The Onshore Shale Gas Community and Business Reference Group has been established with representatives from the community, environmental groups, local business, the gas industry, land councils and local government. Its role is to provide a forum for government to seek advice and share information on the Implementation Plan to deliver on the recommendations and their subsequent execution."</i> Scientific Inquiry into Hydraulic Fracturing Implementation Plan at 5.	This recommendation has been fully implemented. <u>Comments</u> The Reference Group's term concluded on 31 December 2020. "Engagement and oversight through the final stage of inquiry implementation will continue directly with the Independent Overseer, Dr Ritchie and through existing and newly established working and reference groups."