Draft EMP Content Guideline: Onshore Petroleum Regulated Activities

Open for comment 10 May – 9 June 2021

The draft *EMP Content Guideline: Onshore Petroleum Regulated Activities* (the Guideline) was publicly available for comment on the Department of Environment, Parks and Water Security (DEPWS) Have Your Say website from 10 May – 9 June 2021. This table is a collation of the formal and informal comments received on the Guideline during and post the public comment phase:

- Arid Lands Environment Centre (ALEC), 3 June 2021
- Environment Centre NT (ECNT), 8 June 2021
- Aboriginal Areas Protection Authority (AAPA), 9 June 2021
- Environmental Defenders Office, 9 June 2021
- NT Environment Protection Authority (NT EPA) via NT EPA meeting, 10 June 2021 (informal comments)
- DEPWS Water Resources Division, 15 June 2021 (informal comments)
- DEPWS Flora and Fauna Division, 15 June 2021 (informal comments)
- Australian Petroleum Production & Exploration Association (APPEA), 25 June 2021
- Central Land Council (CLC), 28 June 2021
- Northern Land Council (NLC), 16 July 2021 - DRAFT

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1	Arid Lands Environment Centre (ALEC), 3 June 2021	**Hybrid regulations** The Guideline is informed by the regulatory framework, namely the *Petroleum Act 1984,* Petroleum (Environment) Regulations 2016 and Code of Practice for petroleum Activities in the Northern Territory (Code of Practice). It is stated in the Guideline that the Code of Practice is a jointly administered instrument between the Department of Environment, Parks and Water Security (DEPWS) and Department of Industry, Tourism and Trade (DITT)[1]. The Guideline fails to prescribe all responsibilities around the Environment Management Plans (EMPs) to DEPWS. Instead, it is unclear who is responsible for which activities. It is integral that there is clear separation of responsibilities around petroleum activities and environmental management. Recommendation 14.34 of the Scientific Inquiry into Hydraulic Fracturing in the Northern Territory (Fracking Inquiry) is explicit in the need for regulatory separation, stating: > 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.[2]	**Outside the scope of the EMP content guideline.** As per the Administrative Arrangement Orders 2021, the *Petroleum Act 1984* is administered by two Ministers: Minister for the Environment and the Minister for Mining and Industry. DEPWS and the Environment Minister are responsible for environmental regulation of petroleum activities (including the Regulations and the Environmental Offences). This is broadly consistent with the Inquiry recommendations, and the Option 1 Model (p434 of the Inquiry's Final Report) that there be a separate environmental approval for petroleum activities. It must be noted the Inquiry recognised that splitting the environment approval out has occurred in other jurisdictions to mitigate community concerns regarding regulatory capture. The Government's approach to this recommendation has been made clear to the Independent Officer Dr David Ritchie, the Community and Business Reference Group and the public. In particular the Government's approach was advised through the Implementation Plan and the implementation of the recommendation was specifically noted by both the Community Business Reference Group and the Independent Officer through their various communiques and reports.

[1] Environment Management Plan Content Guideline: Onshore Petroleum Regulated Activities, p.9.

[2] Scientific Inquiry into Hydraulic Fracturing in the Northern Territory Final Report, p.413.

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		Instead, it is understood that DITT has retained responsibilities for well operation management plans (WOMPs). WOMPS are central to the effective governance of environmental issues relating to the petroleum industry. These responsibilities should be managed and approved by DEPWS or the Minister for the Environment. It is clear that responsibilities of the Code of Practice under the Petroleum (Environment) Regulations 2016 lie with the Minister for Environment and the Department of Environment. There is no legal basis for which DITT and the Minister for Resources should retain powers related to EMPs and any form of environmental regulation around petroleum activities in the Northern Territory. ALEC considers it vital that EMPs are wholly administered by DEPWS, including all environmental approvals and oversight. It will reduce regulatory complexity, streamline regulatory responsibilities and ensure best practice environmental management is followed. It is vital that all 135 recommendations of the Fracking Inquiry are implemented, including Recommendation 14.34.	
2	Arid Lands Environment Centre (ALEC), 3 June 2021	**Cumulative impacts** The Guideline is woefully inadequate in addressing cumulative impacts. Its three sentences completely undermine a section which is of critical importance to environmental management broadly and the EMP process specifically (e.g. Schedule 1, item 3(2)(b) of the *Petroleum (Environment) Regulations* 2016). Cumulative impacts can contribute to some of the most significant environmental impacts. Cumulative impacts are central to the Fracking Inquiry and recommendations handed down by Justice	Administrative law principles require that a decision-maker considers all relevant information available at the time of making their decision and the Regulations mandate the Minister gives reasons that are adequate to meet the standard required of a written statement of reasons under regulation 12. To the extent possible and where applicable, when considering cumulative impacts for a regulated activity consideration is given to reasonably foreseeable future environmental impacts and environmental risks in or near the permit area (Sch 1, item 3(2)(b)), which likely includes production impacts and risks.

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		Pepper, including Recommendation 14.19[3], Recommendation 14.21[4] and Recommendation 12.5[5]. Adequately regulating cumulative impacts is a central step to understanding whether petroleum activities in the Northern Territory are safe and viable. Recommendation 14.21 states: 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[.] For the Minister to consider cumulative impacts, the information that is provided ought to exceed a minimum standard. Instead, the Guideline provides no framework, nor does it provide any insight into how cumulative impacts should be considered. It is left entirely up to the proponent. The Guideline fails to ensure that the Minister is provided with information around cumulative impacts that meets a certain standard, is measurable and comprehensive. The Guideline's approach to cumulative impacts is subjective and entirely arbitrary. The Guideline's failure to adequately consider cumulative impacts is deeply concerning. It is a key priority of the Territory Government to ensure that the Fracking Inquiry is implemented in a manner that is comprehensive and rigorous. This ensures that	**Amended.** Section 4.6.5 of the Guideline has been amended as follows: When considering whether or not to approve an EMP, the Minister must consider cumulative environmental impacts and risks. Having regard to the nature, scale, duration and context of the regulated activity, the Minister may take into account any of the following environmental factors, for example: • water (quality, volume and aquatic ecosystems (if any)), including groundwater extraction in accordance with existing groundwater extraction licences (including other users) • peak maximum traffic flow and potential impacts to other road users • GHG emissions considered within the context of NT and national emissions • wastewater management • land clearing • terrestrial ecosystems with a focus on how the hierarchy of controls have been applied to reduce impacts to these environmental elements to a level that is as low as reasonably practicable and acceptable.

[3] Scientific Inquiry into Hydraulic Fracturing in the Northern Territory *Final Repor*t, p.414.

[4] Scientific Inquiry into Hydraulic Fracturing in the Northern Territory *Final Report*, p.418.

[5] Scientific Inquiry into Hydraulic Fracturing in the Northern Territory *Final Report*, p.313.

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		the industry is developed safely, and in a manner which protects the environment and meets the expectations of the community. The lack of detail around cumulative impacts allows perceptions to grow in the community that the Northern Territory Government is not taking the threats posed by petroleum activities and their cumulative impacts seriously. ALEC condemns the way cumulative impacts are considered in the Guideline.	The Minister considers all cumulative impacts in or near the permit area (Sch 1, item 3(2)(b)) within the context of the principles of ESD (including social, cultural and economic influences), a commitment to progressive rehabilitation (including proposed remediation of any contamination), and the advice of the NT EPA pursuant to a request made under s29B of the *Northern Territory Environment Protection Authority Act 2012* (NT EPA Act). To meet this expectation, an EMP risk assessment must include 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 (Schedule 1, Item 3(2)(b)).
3	Arid Lands Environment Centre (ALEC), 3 June 2021	**Acceptable environmental impact** The Guideline states several times that environmental impacts will be minimised to an extent that is 'acceptable'[6], 'acceptable level' or 'a level that is acceptable'[7]. There is no definition of what an acceptable level means. The Guideline needs to provide more detail and clarity around what environmental impacts are 'acceptable'.	**Amended.** Section 4.6.2.5 of the Guideline has been amended with the inclusion of the following sentence and footnote: In other words, an interest holder must suitably define an acceptable level of impact or risk and proposed measures to reduce the consequence, severity or likelihood of those impacts or risks to that defined level while referring to the relevant Australian legislation, Australian standards, published guidance, industry standards, and best practice guides (NOPSEMA 2020).[a] **Footnote:** [a]NOPSEMA, 2020. Fact Sheet: ALARP & Acceptable for environmental impacts and environmental risks. Available at: https://www.nopsema.gov.au/assets/Publications/A739345.pdf.

[6] Environment Management Plan Content Guideline: Onshore Petroleum Regulated Activities, p.15, p.19, p.26

[7] Environment Management Plan Content Guideline: Onshore Petroleum Regulated Activities, p.27.

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4	Arid Lands Environment Centre (ALEC), 3 June 2021	**Appropriate assessment of costs** An EMP must demonstrate that environmental impacts and risks are reduced to a level that is as low as reasonably practicable (ALARP). The guideline states that: > ALARP means that all reasonably practicable measures are in place to control an impact or risk considering the level of consequence and cost, time and resources involved to mitigate it. Reducing impacts and risks to ALARP centres on the construct of reasonable practicability; the weighing up of the magnitude of the impact or risk against the cost of reduction.[8] However, there is no full definition of what ALARP is, or what costs matter. It remains unclear how temporal factors are integrated into ALARP and cost considerations. That is, are the costs of climate change considered as part of the cost. Are other costs also considered, such as the cost of greenhouse gas (GHG) emissions; the cost of cumulative impacts; the cost of habitat preservation; the cost of water usage; or who the cost impacts and when. More detail is required to ascertain what costs mean under the ALARP and the Guideline.	**Amended.** The following footnote has been added to section 4.6.2.4 of the Guideline to clarify ALARP, which is a term derived in the UK and was related to health and safety: > See: > Edwards vs NCB [1949] 1 ALL E. R. 743: The element to prove is a balance between the sacrifice in cost, time and effort to averting the risk to the point of "grossly disproportionate" > UKHSE, 2001. Reducing Risks, Protecting People (R2P2). Available at: https://www.hse.gov.uk/managing/theory/index.htm.

[8] Environment Management Plan Content Guideline: Onshore Petroleum Regulated Activities, p.27.

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5	Arid Lands Environment Centre (ALEC), 3 June 2021	**Contribution to climate change** The Guideline should account for the contribution petroleum activities will have upon climate change. There is a precedent for this set by the NSW Land and Environment Court in 2019, in the landmark decision at Rocky Hill near Gloucester[9]. The case was the first of its kind in Australia, and the first of its kind since the Paris Agreement that the global carbon budget and the burning of fossil fuels were heard in a superior jurisdiction court. It was also the first time that an Australian court used GHG emissions and climate change considerations to block the development of fossil fuel projects. The Rocky Hill landmark decision handed down by Preston CJ sets a precedent that climate change considerations do have standing when determining whether a fossil fuel development should proceed. Following on from this, a recent decision in the Federal Court[10] has found that the Federal Environment Minister has a duty of care to young people to not to cause them physical harm in the form of personal injury from climate change. The case found that the prospect of harm is real and "reasonably foreseeable", with one million of today's Australian children to be hospitalised because of heat-related events. Climate impacts are no longer legally speculative, and cannot be batted off as a future problem. This precedent that Environment Ministers have a duty of care is the first step in determining claims of negligence. Ministers are	**Outside the scope of the EMP content guideline.** The Regulations are silent on assessment of GHG emissions, except indirectly through the assessment of cumulative impacts and identifying the predicted GHG emissions for a regulated activity and subsequent reporting of emissions under NGERS. The purpose of the Code is to ensure that: *"greenhouse gas emissions from industry are minimised, and adequately quantified and reported to the Northern Territory Government for subsequent open publication."* (Cl D.1(d)) Section 4.4.4 of the Guideline includes provisions for interest holders to identify predicted greenhouse gas emissions generated from flaring (including flare efficiency), combustion and land clearing. These provisions address mandatory and reporting requirements in the Code and Regulations, in accordance with NGERS. The NT Government has a Climate Change Response, a Climate Action Plan and is undertaking research to inform an emissions reduction strategy. Government is developing an emissions reduction strategy and a policy for managing emissions from new and expanding large emitters. Government is also developing a draft greenhouse gas emissions offset policy.

[9] Gloucester Resources Limited v Minister for Planning [2019] NSWLEC 7.

[10] *Sister Marie Brigid Arthur* v *Minister for the Environment* [2021] FCA 560.

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		now potentially liable for negligence if climate considerations are not accounted for, particularly in relation to their impact upon young people.	
6	Arid Lands Environment Centre (ALEC), 3 June 2021	**Minimum standards** The Guideline fails to implement and outline minimum standards. ALEC considers it critical that minimum standards are a cornerstone of the Guideline. This is in line with best environmental practice.	**Noted. Amended.** Mandatory and preferred standards of operation are detailed in the Code, which covers *"… all petroleum activities"* (cl 2). This guideline is a supplement to the provisions in the Code and the Regulations. The guideline also references out to other guidance material developed by the NT Government to support EMP content and regulated activities. For context the following sentences have been added to section 1.2 of the Guideline: • This guideline should be read in conjunction with the Code and the Regulations with specific attention to the acceptance criteria set out under reg 9, and Schedule 1 of the Regulations. • This guideline is not intended to provide information on how EMPs are assessed, the assessment and approval timelines or regulatory assessment criteria.
7	Arid Lands Environment Centre (ALEC), 3 June 2021	**Conclusion** ALEC has serious concerns about the proposed EMP Content Guideline, not so much by what it does include but what it doesn't. Clarity of decision-making is essential and the hybrid regulations creates uncertainty in critical areas most notably the Well Operation Management Plan. ALEC recommends that DEPWS and the Environment Minister should have oversight on all aspects	**Noted. Addressed in items 1 – 6.**

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		of EMPs. The lack of guidance on acceptable environmental impact, the assessment of costs and minimum standards leaves too much to the subjective views of proponents. ALEC recommends that more emphasis be placed on the objectives of environmental management and the key values and minimum standards to be protected. Finally, the impact of petroleum projects on the climate must be considered and more guidance is required to ensure proponents adequately understand and report on the potential climate impacts of their proposed actions. This guidance does not provide the community confidence that the recommendations of the Pepper Inquiry are being implemented as they were intended to.	
8	Environment Centre NT (ECNT), 8 June 2021	**Failure to comply with Recommendation 14.34: regulatory separation** The issue of regulatory capture was a core concern of the Fracking Inquiry's, with the Inquiry asserting that an independent, transparent and well-resourced regulator was the cornerstone of its recommendations. The Panel noted the "widely and strongly held view in the community that DPIR [now the Department of Industry, Tourism and Trade, or DITT] is not independent of industry" (p 430). In particular, the Inquiry noted the perception of the community that it was not appropriate for a government department with responsibility for promotion of the gas industry, also to be responsible for its environmental regulation. Accordingly, the Fracking Inquiry recommended that all regulatory responsibility for fracking be transferred from DITT to the Environment Minister and the Department of Parks, Environment	**Outside the scope of the EMP content guideline.** Refer to the Department's response to item 1.

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		and Water Security (or DPEWS, for day to day regulation). In particular, the Fracking Inquiry states in its final report: …[t]o ensure that environmental decisions are being made independently from the promotion of any onshore gas industry, the Panel proposes that the regulation of the industry be the responsibility of an entity that does not also have responsibility for promoting that industry. (p 430, see also recommendation 14.34) ECNT is concerned that DITT appears to have retained some regulatory responsibility for fracking. In particular, the Draft Guideline relevantly states that "the Code [of Practice for Petroleum Activities in the Northern Territory] is jointly administered by DEPWS and the Minister for the Environment and the Department of Industry, Tourism and Trade and the Minister for Resources" (p 9). Specifically, ECNT understands from publicly available information that DITT appears to have retained approval power over well operation management plans (WOMPs) which are required by the Code. WOMPS are a core document which govern key environmental issues such as well integrity and as such should clearly be approved by you or DEPWS. While EMPs are publicly available and the public is able to comment on them, the public has no access to WOMPS, undermining another key commitment of the Northern Territory Government's to transparency in government decision-making with respect to fracking. Finally, there is no legal basis for any approval power for WOMPs residing with either DITT or the Minister for Resources, as regulatory responsibility for Code under the Petroleum	

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		(Environment) Regulations 2016 clearly rests with the Environment Minister, and DEPWS. This is a fundamental breach of the spirit and intent of the Fracking Inquiry's report and its final recommendations. To comply with the Fracking Inquiry recommendations, it is imperative that regulatory responsibility be wholly moved from DITT to DEPWS as a matter of urgency, including with respect to approval of WOMPs and administration of the Code.	
9a	Environment Centre NT (ECNT), 8 June 2021	**Cumulative impact assessment and "exploration creep"** The Fracking Inquiry heard from various stakeholders about their concern about "exploration creep" with respect to the onshore gas industry, that is, that a large number of exploration wells might be constructed via EMP approvals granted prior to the Strategic Regional Environmental Baseline Assessment (SREBA), and the implementation of many of the Inquiry's recommendations. To mitigate against this risk, the Fracking Inquiry recommended safeguards to ensure that the: "cumulative impacts of any onshore shale gas activities that occur during the exploration phase of development are assessed, taken into account and appropriately mitigated." Together with the requirement that the principles of ESD be enshrined in the Petroleum Act (Recommendation 14.11), and the recommendation for area-based regulation (Recommendation 14.22), the Fracking Inquiry recommended amendment to the description of the level of cumulative impact assessment required in cl 3(2)(b) as follows (Recommendation 14.19):	**Amended.** Refer to the Department's response to item 2 and amendment to section 4.6.5 of the Guideline.

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		"That prior to granting any further exploration approvals, cl 3(2)(b) of Sch 1 of the Petroleum Environment Regulations be amended to read as follows: "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." ECNT notes with concern that there are clear differences between cl 3(2)(b) of the Petroleum Environment Regulations as currently in force, and what was recommended by the Fracking Inquiry. Accordingly, it appears that clause 14.19 has not been fully implemented. Further, ECNT notes that Recommendation 14.22 remains unimplemented, with no indication of when or whether this will occur. ECNT submits that, given that mitigating the effects of "exploration creep" in the absence of baseline studies was a central concern of the Fracking Inquiry, the Draft Guideline provides insufficient detail about what is required to enable cumulative impact assessment. Cumulative impact assessment is dealt with very briefly (at pages 30 and 31 of the Draft Guidance) and contains a grammatical error (an incomplete sentence under the heading 4.6.5). Vague and brief dot points are given for "typical impacts which may have a cumulative effect". There is no detail given about how cumulative impact assessment is to be undertaken by either proponents or the regulator, giving rise to a real risk that it will not be undertaken in accordance with the spirit and intent of the Fracking Inquiry, or	

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		the regulatory framework. ECNT submits that this may give rise to errors in approvals for EMPs that may affect their legal validity, and make them subject to legal challenge.	
9b		ECNT submits that the Draft Guideline should be amended to include prescription about the following matters as a bare minimum: a) the geographical extent (ie spatial parameters or boundaries) of the area or region to be included or considered as part of a cumulative impact assessment; b) the temporal boundaries or scales for any cumulative impact assessment, which include "past temporal boundaries" (which take into account past cumulative impacts from a defined point in time) and "future temporal boundaries" (which set the time frame for assessing activities that will in the future cumulative affect a valued environment); c) the kinds of other activities that should be taken into account in such an assessment, including the impacts of other gas exploration activities and land uses in the region such as pastoral and agriculture. ECNT refers to Canter and Kamath's questionnaire checklist for assessment of cumulative impacts which underscores the importance of setting clear spatial and temporal boundaries, before analysing how past, present or future activities may affect	**Amended.** Refer to the Department's response to item 2 and amendment to section 4.6.5 of the Guideline.

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		environmental values/objectives.[11] Ross suggests four steps to minimise ecosystem impacts by utilising cumulative impact assessment.[12] The Australian Government's bioregional assessment methodology for assessments of coal seam gas and coal mining developments on water resources may also be of relevance.[13] It is imperative that the Draft Guideline be amended to incorporate meaningful cumulative impact assessment as this was a core concern of the Fracking Inquiry, its recommendations, and the Northern Territory's commitment to implement them. Moreover, it is an explicit requirement of the Petroleum (Environment) Regulations.	
10	Environment Centre NT (ECNT), 8 June 2021	**Progressive incorporation of scientific studies into EMPs and their approval** The Fracking Inquiry identified a number of risks that were not able to be adequately assessed by the Pepper Inquiry due to the paucity of data. To provide some key examples of gaps in scientific knowledge: • in relation to surface/groundwater characteristics and aquatic and terrestrial biodiversity, the Fracking Inquiry said the significant knowledge gap impeded "the ability to	**Amended.** Section 1 of the Guideline has be updated to include the following bullet points: It is important, therefore, that EMPs: • incorporate the most up-to-date scientific research into the NT's onshore gas industry available at the time; for example outcomes of the: ○ Strategic Regional Environmental and Baseline Assessment (SREBA) studies

[11] Canter, L. W., & Kamath, J. (1995). Questionnaire checklist for cumulative impacts. Environmental Impact Assessment Review, 15, 311–339. https://doi.org/10.1016/0195-9255(95)00010-C.

[12] Ross, W. A. (1998). Cumulative effects assessment: Learning from Canadian case studies. Impact Assessment and Project Appraisal, 16, 267–276. https://doi.org/10.1080/14615517.1998.10600137.

[13] https://www.bioregionalassessments.gov.au/methods/bioregional-assessment-methodology.

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		properly assess the risks of any shale gas development (especially cumulative risk over large areas)" (p 394); • "an assessment of the possibility that groundwater biodiversity (stygofauna and GDEs) may be affected by over extraction or contamination of groundwater can only be done after the recommended SREBA is completed" (p 166); • "sustainable extraction limits should be set on the basis of the outputs from the regional numerical groundwater model developed as part of the SREBA to manage poorly understood groundwater systems" (p 137). The Fracking Inquiry recommended that exploration could proceed while the SREBA was being completed, notwithstanding the risk of "exploration creep" occurring. In addition to the SREBA, there are a number of baseline and other scientific studies which have been, or are being, undertaken by independent experts, such as the Commonwealth's Geological and Bioregional Assessment Program with respect to the Northern Territory's onshore gas industry; and studies undertaken as part of GISERA's research program with respect to the Northern Territory's onshore gas industry. It is imperative that EMPS progressively incorporate the latest and most up to date scientific research (including those research programs mentioned above), particularly as this research may materially change the risk profile of exploration activities. The Draft Guideline should contain a requirement to incorporate the most up to date scientific research into EMPs, and their assessment by the regulator. As currently drafted, ECNT is concerned that the Draft	○ Commonwealth's Geological and Bioregional Assessment Program (GBA) program ○ Commonwealth's Gas Industry Social and Environmental Research Alliance (GISERA) research program.

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		Guideline only appears to require the incorporation of proponents' own baseline and other scientific studies.	
11	Aboriginal Areas Protection Authority (AAPA), 9 June 2021	**Section 4.4.1 Site selection** The Authority suggests that an EMP demonstrate how cultural heritage has been considered in relation to site selection, and that this be addressed in section 4.4.1 of the Content Guideline. The legislative mechanism for protection of sacred sites associated with developments is an Authority Certificate issued in accordance with the Northern Territory Aboriginal Sacred Sites Act 1989 (NTASS Act). For the Interest Holder, it would be most informative to obtain an Authority Certificate during an early stage of proposal planning so as to enable site selection to take into account any mandated site protection mechanisms in the conditions of the certificate. Such conditions can be far more inconvenient to the Interest Holder when applied to a proposal that has little flexibility in the location of activities.	**Amended.** The following paragraph has been included in section 4.4.1 of the Guideline: The EMP must demonstrate how cultural heritage has been considered in relation to site selection. The legislative mechanism for protection of sacred sites associated with developments is an Authority Certificate issued in accordance with the *Northern Territory Aboriginal Sacred Sites Act 1989*. Authority Certificates should be obtained during the early stages of proposal planning so as to enable site selection to take into account any mandated site protection mechanisms in the conditions of the certificate.
12	Aboriginal Areas Protection Authority (AAPA), 9 June 2021	**Appendix B - Legislative Requirements** The second table lists legislation that may be applicable, and includes the 'Northern Territory Aboriginal Sacred Sites Act 2013'. Please note that the year of the NTASS Act is 1989, and that it is definitely applicable to regulated activities. The Authority therefore suggests removing the NTASS Act from the second table and including it in the first table, with the following information (or similar): • Requirement: The Petroleum (Environment) Regulations 2016 [Regulation 9(1)(d)] requires that activities authorised under	**Amended.** Appendix B of the Guideline has been updated with the AAPA recommendations.

<table>
<tr><th>Item #</th><th>Submitter</th><th>Comment</th><th colspan="4">Department response</th></tr>
<tr><td></td><td></td><td>the Petroleum Act 1984 have an Authority Certificate, issued in accordance with the Northern Territory Aboriginal Sacred Sites Act 1989, prior to Ministerial approval of an EMP for that activity.
• Applicability: Interest holder has Authority Certificate C202X/XXX, which covers the regulated activities.
• How met: Compliance with the conditions of the Authority Certificate.</td><td colspan="4"><table><tr><th>Legislation</th><th>Requirement</th><th>Applicability</th><th>How met</th></tr><tr><td>Northern Territory Aboriginal Sacred Sites Act 1989</td><td>The Petroleum (Environment) Regulations 2016 [Regulation 9(1)(d)] requires that activities authorised under the Petroleum Act 1984 have an Authority Certificate, issued in accordance with the Northern Territory Aboriginal Sacred Sites Act 1989, prior to Ministerial approval of an EMP for that activity.</td><td>Interest holder has Authority Certificate C202X/XXX, which covers the regulated activities.</td><td>Compliance with the conditions of the Authority Certificate.</td></tr></table></td></tr>
<tr><td>13</td><td>Aboriginal Areas Protection Authority (AAPA), 9 June 2021</td><td>Sections 4.1 and 4.2:
The Authority suggests being specific about the acceptable page-length for various sections of the EMP. For example:</td><td colspan="4">Noted. No change.
At this stage a page limit per EMP section is not intended.</td></tr>
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		• 'a maximum of 8 pages' • 'brief (1-2 pages)'	
14	Environmental Defenders Office, 9 June 2021	**Wastewater and brine** Recommendation 5.5a of the Pepper Inquiry Recommendations focuses on wastewater, and recommends 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". The draft Guideline (at page 10) provides an example of wastewater regulation requirements that should be included in an EMP, but does not specify that the final disposal site for wastewater and associated brine should be identified in an EMP. Disposal of wastewater and associated brine has been identified as posing a significant ongoing environmental risk if not managed appropriately. For example, Professor Stuart Khan of the School of Civil & Environmental Engineering at the University of NSW, in providing independent expert advice to the NSW Independent Planning Commission in relation to the Narrabri Gas Project (the largest coal seam gas proposal in NSW) (Khan Report), stated:[14] "when you treat water by reverse osmosis you are not destroying the chemicals and salts, you are separating the water into two components: one is a highly purified component and an equally highly concentrated component. It is managing that concentrated brine that presents a number of challenges.… Then you have a solid waste disposal problem. You have large volumes of	**Noted. No change**. The provisions for wastewater disposal are mandated in the Code, including the requirement for a wastewater management plan (cl C.7.1). Clause C.6.1(b) of the Code states: *"Wastewater tracking must be documented in an auditable chain of custody system."* Offsite (interstate) treatment is an interim solution while the NT and Australian Government works with industry to implement a long term solution to water management including recycling and disposal. The CSIRO is currently developing a water management framework with a focus on identifying sustainable options for managing onshore gas wastewater in the NT. The outputs from this framework include fit-for-purpose management and water treatment alternatives that consider costs, and high-level environmental and social outcomes. Updates to CSIRO studies can be found on the CSIRO GISERA website: https://gisera.csiro.au/. As such, the Code (cl C.6.1) includes provisions for the identification of volumes of water and wastewater removed from site and its destination.

[14] Khan Report available at https://www.ipcn.nsw.gov.au/resources/pac/media/files/pac/projects/2020/03/narrabri-gas-project/correspondence/edo/khan-narrabri-gas-project-ipc-advice-final.pdf.

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		contaminated salts that need to be disposed somewhere, usually to landfill." Adding to these risks is the fact that brine waste does not break down and therefore requires management in perpetuity. In the EDO's view, the draft Guideline should be amended to include a requirement to identify a final disposal site for brine waste. This is because ordinary landfill sites are generally not designed to safely contain this type of waste. Most ordinary landfill sites are not sufficiently lined to prevent leaching of brine waste. There is a significant risk of water entering ordinary landfill sites, whether it be through groundwater or rainfall, which interacts with brine to mobilise the chemicals present in the waste, leading to the risk that highly saline, contaminated water will leach from inadequately lined landfills. If the draft Guideline does not specify that the final disposal site for brine waste should be identified and assessed for adequacy, the risks posed by the ongoing management of brine waste, in particular the leaching of contaminated brine into the environment, cannot be properly assessed. These unassessed risks could have significant and ongoing negative impacts for human health and the environment.	
15	Environmental Defenders Office, 9 June 2021	**Flaring** We note that Section 4.4.4. of the draft Guideline identifies flaring as one of the activities that is likely to be undertaken as part of a regulated activity. However, the draft Guideline provides insufficient detail about how the identity and volume of pollutants generated from flaring should be assessed in an EMP, along with the assessment of specific risks associated with the timing and duration of flaring. In the EDO's view, the draft Guideline should	**Noted. No change.** 1. Refer section 4.7.5 of the Guideline, which cross-references to the Bushfire Management Planning Guideline: Onshore Petroleum, dated February 2020, drafted by the Department. Interest holders are required to identify all impacts and risks, including those associated with flaring. Mitigations must demonstrate that the risk has been reduced to levels that are ALARP and acceptable.

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		be amended to specify that detail in regard to these risks and impacts associated with flaring be included in an EMP. Further, the draft Guideline should be amended to specifically address the risk of flaring and bushfires, particularly in, but not limited to, the dry season in the Northern Territory, and to specify that appropriate management measures for this risk be included in an EMP.	In accordance with cl A.3.7 of the Code, it is mandatory for all EMPs to include a bushfire management plan. 2. Section 4.4.4 of the Guideline includes provisions for interest holders to identify predicted greenhouse gas emissions generated from flaring (including flare efficiency), combustion and land clearing. These provisions address mandatory and reporting requirements in the Code and Regulations.
16	Environmental Defenders Office, 9 June 2021	**Well construction** In the EDO's view, the draft Guideline should be amended to require detail about the construction and integrity of wells to be included in an EMP. Detail about the construction of wells for hydraulic fracture stimulation is essential to the broader assessment of associated environmental impacts and risks. Well construction is of critical significance to the protection of groundwater, methane emissions, and workers' safety. Depending on the construction and operation of wells, there may be risk of blow outs, well failure, annular gas migration, groundwater migration, spills and leaks of wastewater, explosions, contamination of other wells, cement barrier failure, well casing degradation, and corrosion, which may lead to contamination of groundwater in turn creating increased risks for the environment and human health. In the EDO's view, it is insufficient to leave detailed consideration of the impacts and risks associated with well construction to a later and separate assessment process. This assessment and details of associated management measures should be included in an EMP, and the draft Guideline should be amended to reflect this.	**Noted. No change.** Refer section 4.4 of the Guideline which states: *"The EMP must contain a comprehensive description of the regulated activity, including both routine and non-routine activities. The scope of the proposed activity must be described succinctly but with sufficient detail to allow the reader to understand the nature and scale of the regulated activity and to confirm the validity of the impact assessment. Key interactions between the regulated activity and the environment, such a sensitive receptors should be identified and adequately described."* EMPs currently contain extensive description of well construction in accordance with the Code, including detailed schematics of casing and stratigraphy; cementing process and chemical risk assessment. In addition, a description of the seismic survey information that has been used in most instances to inform subsurface geohazard assessment at a well site and the separation distance between the basement of the deepest recognised aquifer at that location and the highest perforation for HF in the well. The minimum separation distance must be greater than the minimum specified in the Code. Construction of groundwater monitoring bores at a well site to the base of the deepest recognised aquifer at that location also requires a gamma log to be

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			run of the open bore to identify the top and bottom of the aquifer(s) to identify potential cavities in the -aquifer and inform subsequent well construction.
17	Environmental Defenders Office, 9 June 2021	**Social impacts** Social impacts are addressed at Table 3 of the draft Guideline, under "Communities and social performance". However, in the EDO's view, the discussion of risk relating to communities and social performance in the draft Guideline focuses on management of community complaints, as opposed to engagement with communities. For example, Table 3 focuses on informal, formal, or organised disapproval and action from local stakeholders, and does not set out examples of community engagement organised or initiated by interest holders. The draft Guideline is therefore at odds with appropriate practice for assessing community impacts. The draft Guideline should be amended to require an EMP to properly assess and measure the impacts of a regulated activity on community health and wellbeing, rather than simply relying on the number of community complaints as a metric of risk and impact.	**Noted. No change.** Content of an EMP must meet the provisions outlined in the Regulations and the Code. The chemical risk assessment in the Guideline includes a human health risk assessment including assessment of potential exposure pathways for Tier 2 chemicals in accordance with national guidelines. Further, a human health risk baseline assessment is also part of the ongoing Commonwealth SREBA[15] assessment. (**NB:** Table 3 and 4 have been deleted from section 4.6 of the Guideline. Refer to the Department's response to item 53.)
18	Environmental Defenders Office, 9 June 2021	**Changes to EMP** Section 4.4 of the draft Guideline states, "A regulated activity or component of a regulated activity not described in an EMP is not part of the EMP and cannot be undertaken." However, Section 4.4 also states, "Where the exact scale and extent of the regulated activity is subject to change, this should be indicated." In EDO's	**Noted. No change.** The purpose of this statement is to ensure that EMPs are assessing the regulated activity to its maximum predicted impact, risk, spatial and temporal boundaries, where practicable.

[15] Strategic Regional Environment and Baseline Assessment.

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		view, this creates an internal inconsistency within the draft Guideline. Section 4.4 of the draft Guideline provides no indication of any limits that may apply to changes or modifications to a regulated activity before an application for a new EMP will be required. The EDO suggests that the draft Guideline should be amended to address this uncertainty and inconsistency. Further, the draft Guideline should specify that any permitted changes to a regulated activity should be limited to those that will not create different or greater impacts or risks than those assessed in the EMP for the regulated activity.	As stated under item 19a, the Guideline is drafted to encourage objective-based regulation and should be read in conjunction with the Code and the Regulations. Separate guidance will be published on how to determine whether a change requires revision to an EMP or a notification to the Minister.
19a	Environmental Defenders Office, 9 June 2021	**A clear definition of "acceptable" levels of environmental impacts and risks** The EDO notes that the draft Guideline leaves it to proponents to define 'acceptable' levels of environmental impacts and risks: "It is the interest holder's responsibility to demonstrate that all sources of environmental impact and risk arising from conduct of the regulated activity, including cumulative impacts, are identified and can be managed to minimise environmental impacts and risks to ALARP and acceptable".[16] In the EDO's view, 'acceptable levels' must be able to be objectively measured and assessed in an EMP. In this regard, the draft Guideline should provide clear guidance on the level of ongoing environmental impact or risk that will be considered acceptable. Further, the draft Guideline should be amended to specify what types of environmental impacts or risks will be	**Noted and partially amended.** 1. **No change.** It is the responsibility of the interest holder to evaluate and demonstrate that the level of risk is acceptable, not define that it is acceptable. Refer to the Department's response to item 3. 2. **No change.** The Guideline is drafted to encourage objective-based regulation. EMPs are required to identify environmental sensitivities, and identify, characterise and evaluate the potential impacts and risks to the existing environment, in a manner that follows the NT EPA's Environmental Factors and Objectives (NT EPA, 2021) guidance. The combined environmental factors and objectives provide a mechanism by which to identify those environmental values, which may be affected by a regulated activity and to meet the expected outcomes of each environmental objective. 3. **Amended.** The Guideline focuses on providing detailed advice to interest holders on the information to be contained in the EMP to meet

[16] Draft Guideline, p 19.

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		considered unacceptable having regard to the nature of the regulated activity. In the absence of clear guidance on what constitutes acceptable or unacceptable impacts from petroleum activities, other metrics that guide decision-making, such as the requirement that impacts and risks be reduced "as low as reasonably practicable," cannot be measured objectively.	the acceptance criteria set out under reg 9 and the Code. The Guideline should be read in conjunction with the Code. The Guideline is not intended to provide information on how EMPs are assessed or the regulatory assessment criteria. To meet this expectation, the following sentences have been added to section 1.2 of the Guideline: • This guideline should be read in conjunction with the Code and the Regulations with specific attention to the acceptance criteria set out under reg 9, and Schedule 1 of the Regulations. • This guideline is not intended to provide information on how EMPs are assessed or the regulatory assessment criteria.
19b	Environmental Defenders Office, 9 June 2021	Further, in EDO's view, the draft Guideline should specify that the assessment of whether impacts and risks will be of an acceptable level should include consideration of the environmental management history of the proponent, and whether they have the technical capability to conduct the proposal.	**Noted. No change.** Regulation 9 sets out the matters which the Minister must consider when making her decision. Past compliance with other EMPs is not one of those criteria and there is no discretion to add other criteria.
19c	Environmental Defenders Office, 9 June 2021	Finally, the draft Guideline should specify that the assessment of the acceptability of an impact or risk should be premised on a positive obligation to ensure such assessment is consistent with the principles of ESD, not on "ensur(ing) such principles are not compromised" as indicated in Section 4.6.2.5. of the draft Guideline.	**Amended.** Bullet point 6, section 4.6.2.5 of the Guideline has been amended to: • that the assessment is consistent with the principles of ESD …
20a	Environmental Defenders Office, 9 June 2021	**Appropriate consideration of environmental costs in the assessment of ALARP**	**Noted. Outside the scope of the EMP content guideline.**

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		The draft Guideline specifies that "Reducing impacts and risks to ALARP centres on the construct of reasonable practicability; the weighing up of the magnitude of the impact or risk against the cost of reduction. A risk reduction measure can be considered as being reasonably practicable if the costs to implement it are not grossly disproportionate to the reduction in risk achieved."[17] In EDO's view, this approach necessitates the proper consideration of all environmental costs (and the associated benefits of avoiding those costs). Therefore, the draft Guideline should specify that the true environmental cost of projects should be assessed in an EMP, including the costs associated with dangerous climate change that new fossil fuel projects will invariably increase (in the absence of carbon offsetting or other abatement), and the costs associated with ensuring intergenerational equity in relation to fossil fuel project impacts.	
20b	Environmental Defenders Office, 9 June 2021	In EDO's view, an assessment of risk should also inform consideration of ALARP. However, the risk matrix set out in the draft Guideline at Table 4 inappropriately links risk to frequency. For example, an 'unlikely' event is defined as one that "Typically occurs in 100 - 1,000 years". This type of measure, and the timescales involved, is completely meaningless in the context of an industry that is relatively new to operating in the Northern Territory. In EDO's view, the risk matrix should also include a stronger focus on risks arising as a consequence of scientific uncertainty, rather than the separate approach set out in the draft	**Amended.** Table 3 and Table 4 have been deleted from section 4.6.2.3. NB: Scientific uncertainty is fully integrated into EMP risk assessments. It demonstrates the level of confidence interest holders have in the mitigations put forward to minimise impacts and risks to ALARP and acceptable levels.

[17] Draft Guideline, p 26.

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		Guideline, which states that scientific uncertainty "may" be incorporated in risk assessment (Section 4.6.3.).	
20c	Environmental Defenders Office, 9 June 2021	EDO also disagrees with the assumption in Section 4.6.2.4. of the draft Guideline, which states that, "Where the implemented controls to mitigate environmental impacts and risks follow the mandatory and preferred requirements of the Code, they are considered to be ALARP and acceptable (cl 1)". In EDO's view, the requirements of the Code should be considered the minimum standard applicable. It is highly likely that in many circumstances the requirements of the Code will not be sufficient to appropriately manage relevant impacts and risks. The draft Guideline should therefore specify that ALARP must be considered in each individual circumstance to ensure that the specific circumstances of individual projects and the environments in which they operate are adequately assessed.	**Noted. No change.** The Code consolidates many of the environmental protection mechanisms and industry best practices recommended by the HFI. Each residual risk rating must be demonstrated to be ALARP and acceptable, and each regulated activity must adhere to the Code, which is the guiding statutory instrument to achieve this. The definition of ALARP set out by the Court of Appeal (in its judgment in Edwards v. National Coal Board, [1949] All ER 743) is: *"'Reasonably practicable' is a narrower term than 'physically possible' … a computation must be made by the owner in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) is placed in the other, and that, if it be shown that there is a gross disproportion between them – the risk being insignificant in relation to the sacrifice – the defendants discharge the onus on them."* (see https://www.hse.gov.uk/managing/theory/alarpglance.htm)
20d	Environmental Defenders Office, 9 June 2021	Further, in EDO's view, consideration of ALARP should not be based on the consideration of the measures that have been undertaken, but on the outcomes that will be achieved as a consequence of those measures. This should be reflected in the draft Guideline.	**Noted.** Refer to the Department's previous response to item 20c.

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21a	Environmental Defenders Office, 9 June 2021	**A clear definition of cumulative impacts and detailed requirements for consideration of cumulative impacts** As a preliminary point, EDO notes that the second sentence in Section 4.6.5 of the draft Guideline appears to be incomplete. It states, "an assessment of cumulative impacts requires consideration of (to the extent the information is publicly available)." The draft Guideline should be amended to correct this error. More substantively, EDO considers that the assessment of cumulative impacts should not be limited to information that is publicly available. The draft Guideline should specify that cumulative impacts and risks should be assessed and managed in an EMP on the basis of all relevant information (regardless of whether it is in the public domain or not). In EDO's view, the draft Guideline should include a more comprehensive description of the requirement for consideration of cumulative impacts and risks. In this regard, EDO recommends that the draft Guidelines include the wording of Schedule 1, Item 3(2)(b) of the PER: "[the assessment in the EMP must include] 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."	**Amended.** Refer to the Department's response to item 2 pertaining to cumulative impacts and update to section 4.6.5 of the Guideline.
21b	Environmental Defenders Office, 9 June 2021	Further, data collection and monitoring will be required in order to establish a frame of reference to compare and track cumulative impacts over time. The draft Guideline should reflect this need, and specify that an EMP should include strategies to develop	**Noted. Outside the scope of the EMP content guideline.**

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		environmental data collection and monitoring processes, environmental accounts systems and measurable strategic environmental goals. The inclusion of these tools in an EMP makes environmental costs and benefits more visible to decision-makers. In turn, this makes the concept of cumulative impacts more tangible and permits decision-makers to more accurately consider the principles of ESD in the context of the regulated activity. In this context, EDO recommends that the draft Guideline should: a. contain stronger links to regional plans, goals and solid baseline environmental data; b. recognise the significant cumulative effects of small and large projects; and c. address the lack of Territory-wide environmental goals and environmental accounts.	Refer Sch 1, item 6(2)(b), which requires monitoring of impacts; monitoring of emissions and discharges; and determination that impact mitigation measures are effective, such that outcomes and standards can be met. There are clear linkages between each type of monitoring (including inspections) and how it relates back to one (or more) of those three requirements. SREBA is the tool for regional environmental monitoring. Refer to the Department's responses to item 2 and item 21c (c) below.
21c	Environmental Defenders Office, 9 June 2021	In general, EDO considers that there are insufficient references to cumulative impacts in the draft Guideline. Cumulative impacts, particularly in relation to water and landscape impacts, are necessary and important considerations in an EMP given the scale of existing and proposed petroleum development in the Northern Territory. In EDO's view, the draft Guideline should clearly specify the minimum standards required for the assessment of all aspects of cumulative impacts in an EMP, in particular: a. groundwater and surface water usage and management;	**Noted. Partially amended.** a. **No change.** Groundwater use and potential impacts is assessed during the application for a water extraction licence and described in the EMP. The use of surface water is prohibited under the Water Act. b. **Amended**. Refer to the Department's response to item 2 pertaining to cumulative impacts and update to section 4.6.5 of the Guideline. c. **No change**. Section 4.4.4 of the Guideline includes provisions for interest holders to identify predicted greenhouse gas emissions generated from flaring (including flare efficiency), combustion and land

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		b. habitat fragmentation and consequent loss of landscape function; and c. emissions of methane and the gas industry's contribution to climate change.	clearing. These provisions address mandatory and reporting requirements in the Code and Regulations, in accordance with NGERS. The CSIRO has completed baseline methane emissions surveys in the Beetaloo Sub-basin: https://gisera.csiro.au/research/greenhouse-gas-and-air-quality/. The seasonal baseline surveys indicate a median methane value across the area pf 1.81 ppm, which is close to the normal background concentrations of approximately 1.8 ppm expected in rural or natural areas. The CSIRO is also undertaking the following emissions studies: *Offsets for life cycle greenhouse gas emissions of onshore gas in the Northern Territory* and *Methane emissions quantification of well drilling to completion processes in Beetaloo Sub-basin*. Updates to these studies can be found on the CSIRO GISERA website: https://gisera.csiro.au/.
21d	Environmental Defenders Office, 9 June 2021	The draft Guideline should be amended such that the definition of cumulative impacts should encompass the direct and indirect effects of the past, present and likely direct and indirect effects of the future. It should encompass the impacts of a particular project, the impacts of all other activities within a license area, and the impacts of other relevant mining and gas activities across the impacted region.	**Amended, refer to the Department's response to item 2** pertaining to cumulative impacts and update to section 4.6.5 of the Guideline.
21e	Environmental Defenders Office, 9 June 2021	Further, the consideration of cumulative impacts is crucial to effectively assess the contribution of regulated activities to global greenhouse emissions and the impacts of climate change. All sources of greenhouse gases contribute to climate change regardless of their origin or nature, which makes scope 3 greenhouse gas emissions relevant in calculating cumulative impacts in an EMP. In this regard, the draft Guideline should adopt	**Outside the scope of the EMP content guideline.** Refer to the Department's response to item 5**.**

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		the approach of the NSW Land and Environment Court in Gloucester Resources Limited v Minister for Planning [2019] NSWLEC 7 (Rocky Hill), which recognised the contribution of local fossil fuel projects to cumulative global greenhouse gas emissions and climate impacts. That approach is set out below and should be reflected in the draft Guideline: *There is a causal link between the [mine's] cumulative GHG emissions and climate change and its consequences. The [mine's] cumulative GHG emissions will contribute to the global total of GHG concentrations in the atmosphere. The global total of GHG concentrations will affect the climate system and cause climate change impacts. The [mine's] cumulative GHG emissions are therefore likely to contribute to the future changes to the climate system and the impacts of climate change.*	
22	Environmental Defenders Office, 9 June 2021	**Minimum environmental standards and outcomes** The draft Guideline states, "The Regulations require that an EMP must include environmental performance standards intended to validate the controls put in place to manage the environmental risks of the activity and that in aggregate deliver environmental outcome commitments".[18] In this regard, EDO considers that the draft Guideline should specify minimum environmental standards and outcomes in order to provide clarity and certainty for industry, and provide greater environmental protection. The value of a legally enforceable tool of this nature is discussed in the Interim Report of the Samuel	**Outside the scope of the EMP content guideline. No change.** As per the definition in the Regulations, the remit for specifying environmental performance standards and outcomes lies with the interest holder. This is because these elements are inherently linked to the management systems, equipment, procedures and processes of each individual company and vary from site-to-site and across companies. As stated in section 4.6.6.2 of the Guideline: *"Each environmental performance standard must be supported by auditable and measurable criteria"* and *"fulfil the intent of the 'S.M.A.R.T' criteria".*

[18] Draft Guideline, p 32.

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		Review of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). EDO recommends that environmental standards to be included in the draft Guideline must be robust, evidence-based, the subject of stakeholder consultation, and enforceable at the individual project level.	Demonstration of no project attributable impacts to groundwater and compliance with soil contamination guidelines in spill management plans are examples of SMART. Also, the Code is a statutory document describing minimum mandatory and preferred requirements, which when implemented ensure that onshore petroleum activities carried out in the NT are ALARP and acceptable.
23	Environmental Defenders Office, 9 June 2021	**Comprehensive requirements for hydraulic fracturing chemical disclosure** The draft Guideline states (at Section 4.6.7) that an EMP must specify all chemicals and other substances that are to be used in the activity, and lists requirements for chemical disclosure. However, the draft Guideline does not specify that the purpose of the chemical should be identified, despite the same requirement being set out in Schedule 1, Item 4A of the PER. EDO recommends that Section 4.6.7 be amended to explicitly include a requirement for interest holders to specify the purpose of each chemical or other substance that may be in, or added to, any treatment fluids to be used in the course of a regulated activity, to ensure the draft Guideline accurately reflects the requirements set out in Schedule 1 of the PER. EDO also considers that it is crucial to determine the impact of chemicals interacting with each other in treatment fluids to create new, potentially harmful chemicals. Given that the interaction of these chemicals may create impacts that will not be created by the impacts alone, such as an assessment is critical to understanding the risks involved in allowing these chemicals to be released into the local environment. Accordingly, the draft Guideline should	**Amended.** Section 4.6.7 of the Guideline has been amended to include: d) the purpose of the chemical or other substance NB: A detailed quantitative chemical risk assessment is undertaken for all hydraulic fracturing chemicals, which includes assessment of potential risks to human health and the environment.

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		specify that an EMP should include an assessment of potential risks and impacts of chemical interaction.	
24	Environmental Defenders Office, 9 June 2021	**Detailed requirements for information to be included in Rehabilitation Management Plans** The draft Guideline specifies (at Section 4.7.7.) the information that should be included in a Rehabilitation Management Plan. EDO supports the inclusion of information detailing monitoring and maintenance programs, and a schedule for progressive rehabilitation. However, the draft Guideline should also specify that that a Rehabilitation Management Plan should include information about the management of impacts and risks that may exist in perpetuity (e.g. the management of brine waste). Further, the draft Guideline should specify that details of security bonds be provided for particular activities such as drilling and hydraulic fracturing, where inappropriate rehabilitation methods can pose long term environmental risks. As noted above, an example of the need to detail risk management procedures in perpetuity arises in relation to the containment of wastewater and brine waste. In this regard, the Khan Report states (at page 6),[19] "a risk of loss of containment exists for perpetuity [as] the salt does not break down and will require ongoing management". The draft Guideline should specify that a Rehabilitation Management Plan provide an upfront plan for the management of this waste, and a requirement for the proponent to maintain responsibility for the cost of managing this	**Noted. No change.** Sub-plans mandated in the Code include a rehabilitation plan (cl A.3.9) and a wastewater management plan (cl C.7.1). In accordance with cl A.3.9(d) of the Code: *"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."* Refer section 4.7.7.1 of the Guideline, which addresses provision of a rehabilitation security.

[19] Above n 15.

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		waste in-perpetuity. EDO considers that this would reflect appropriate implementation of the polluter pays principle and prevent future generations from being impacted or otherwise burdened by the requirement to manage and dispose of wastewater and brine waste.	
25a	Environmental Defenders Office, 9 June 2021	**Adherence to recommendation 7.12 of the Pepper Inquiry Recommendations** Recommendation 7.12 of the Pepper Inquiry Recommendations states, "well pad site[s] 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's Action Items website (https://hydraulicfracturing.nt.gov.au/action-items), which sets out "a plan for implementing [the Pepper Inquiry Recommendations]" indicates that recommendation 7.12 has been implemented "100%". However, the requirements of Recommendation 7.12 are not explicitly set out in either the PER or the Code. Further, the draft Guideline appears to refer to bunding as optional risk mitigation measure. In this regard, the draft Guideline states (at page 33) that, "Bunding around well pad to prevent overtopping event from leaving well pad (xx ML)" is a mitigative control that is not specified in the Code. EDO considers that for Recommendation 7.12 to be "100%" implemented, the requirement to bund well pads should be explicitly set out in the draft Guideline.	**Outside the scope of the EMP content guideline.** It is not within the scope of the Guideline to address or resolve the implementation of HFI recommendations, which undergo review and approval through two independent oversight mechanisms. Clause A.3.8(e) of the Code states: *"Sites and facilities where petroleum activities are undertaken must be designed and constructed to prevent spills of potentially harmful chemicals or those that may cause environmental harm to the ground surface or their release from the site."* Clause A.3.8(g) of the Code states: *"Secondary containment must have sufficient capacity to hold 100% of the volume of the largest container stored in the area plus 10%, unless the container is equipped with individual secondary containment …"* Clause C.4.1.2(b) of the Code states: *"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*

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			ii. above ground storage tanks with secondary containment measures as detailed in B.4.16.2 (h)" As demonstrated above, the Code has applied recommendation 7.12 to the wastewater tank pads and all other key containment infrastructure at a well site such as drilling sumps and chemical storage areas. Examples of mitigations applied to wastewater tanks include: a 60 cm geotechnical core sampling at the tank pads at a well site on baseline soil for particle size distribution – to infer assessment for permeability for spill modelling, real-time monitoring to prevent overtopping, and double lined tanks with leak detection.
25b	Environmental Defenders Office, 9 June 2021	In addition, the draft Guideline (at page 33) lists the "use of open treatment tanks for dry season evaporation of wastewater" as an "Existing Control". This is also at odds with Recommendation 7.12 of the Pepper Inquiry Recommendations which also states that, "enclosed tanks must be used to hold all wastewater". This further demonstrates that Recommendation 7.12 has not been "100%" implemented by the Northern Territory Government.	**Outside the scope of the EMP content guideline.** It is not within the scope of the Guideline to address or resolve the implementation of HFI recommendations, which undergo review and approval through two independent oversight mechanisms. The NT Government sought advice from CSIRO and its scientific peers on best practice for wastewater storage. In accordance with the Code (cl C.7.1.1), wastewater is allowed into open tanks to reduce the amount of water stored in tanks and the impacts of transporting large volumes offsite for subsequent treatment and disposal. This is necessary during the early stages of exploration when on-site treatment and recycling is unfeasible. Further, the release of petroleum wastewater to surface water (recommendation 7.17) has been prohibited through a decision making policy under the *Water Act 1992*. Offsite (interstate) treatment is an interim solution while the NT Government works with industry to implement a long term solution to water management

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			including recycling and disposal. (Refer to the Department's response to item 21c, regarding CSIRO studies.)
26	Environmental Defenders Office, 9 June 2021	**Detailed consultation with Aboriginal communities and individuals with interpreters present** EDO recommends that the draft Guideline should be amended to place more importance on consulting with Aboriginal people and communities. It is noted that Land Councils are an example of a Stakeholder. However, there is no specific emphasis placed in the draft Guideline on the special circumstances associated with consulting with Aboriginal communities, and the cultural context that requires particular consultation approaches to be undertaken. Based on our experiences with the Environmental Impact Assessment (EIA) process in the Northern Territory, and advising and representing Aboriginal individuals and communities impacted by major development, we consider that it is critical that the draft Guideline clearly emphasises that Aboriginal individuals and communities are broadly impacted by, and must be consulted on a wide range of matters in the EMP development process, as is the case with any other community. This means Aboriginal individuals and communities must be consulted on the broad range of interests and concerns that they may have, including impacts on Country and the environment. All Aboriginal people and communities impacted by regulated activities must be consulted on all matters relevant under the PER and Code, as articulated in an EMP, that are of concern to them.	**Outside the scope of the EMP content guideline.** It is not within the scope of the Guideline to address or resolve the implementation of HFI recommendations, which undergo review and approval through two independent oversight mechanisms. The Guideline will be updated annually to incorporate any developments that emerge from the implementation of HFI recommendations. Refer para 2, section 4.8.2 of the Guideline which states: *"When engaging with stakeholders, best practice dictates that information provided should be tailored to the specific interaction between the regulated activity and the stakeholder."* Separate stakeholder engagement guidance will be published that will include these considerations.

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		Consultation cannot be limited to tenure-related rights, nor impacts on cultural heritage and sacred sites alone, notwithstanding that these are critical matters. Recommendation 11.5 of the Pepper Inquiry Recommendations states that "interpreters be used at all consultations with Aboriginal people for whom English is a second language. Interpreters must be appropriately supported to ensure that they understand the subject matter of the consultation". EDO recommends that the requirements of Recommendation 11.5 be included in the draft Guideline.	
27	Environmental Defenders Office, 9 June 2021	**Effective engagement with stakeholders and the wider community** EDO considers that the Draft Guideline's example of "Other interested persons or organisations" including "representative groups facilitating access to its members"6 is too restrictive, in that it does not specifically refer to environmental groups or community organisations, both of which have and continue to engage with the wider community in relation to regulated activities. The draft Guideline should specify that interest holders should attempt to engage with the wider community in order to gain a more complete view of affected interests. The draft Guideline should specify that steps to genuinely engage with the wider community be taken (such as through public seminars or information sessions, including with remote and Aboriginal communities). Consulting only with key stakeholders places a heavy obligation on environmental and community groups that represent these communities, and means that interest	1. **No change.** Stakeholder: Refer to section 4.8.1 of the Guideline, which clearly identifies the scope of stakeholder identification and engagement in accordance with reg 7. 2. **No change.** Wider community engagement: As per reg 7, stakeholder engagement is predicated on identifying who is a stakeholder – i.e. *"person or body whose rights or activities may be directly affected by the environmental impacts or environmental risks of the regulated activity proposed to be carried out …"* 3. **Amended.** Early stakeholder engagement: a. Refer para 1, section 4.8 which states: *"Stakeholder engagement must be undertaken during the preparation of an EMP (reg 7), as stakeholder feedback is to be used to inform the EMP ..."* **Amended to**: Stakeholder engagement must be undertaken during the preparation of an EMP (reg 7), as stakeholder feedback is to be used to inform the EMP. Depending on the complexity of the activity and extensiveness of future stakeholder engagement, it may be beneficial for interest holders to develop a stakeholder

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		holders and decision-makers do not obtain the benefit of hearing directly from those impacted by regulated activities. The draft Guideline should specify that community engagement happen at an early stage in the development of an EMP. Information about regulated activities should be made easily available and use plain language that is accessible to members of the community, including those whose first language may not be English. Further, EDO considers that it is not acceptable for the draft Guideline to state: "It is not recommended that stakeholders be provided with draft EMPs, as much of the information may not be relevant." Information provided to stakeholders should be complete and sufficient for stakeholders to properly understand all impacts and risks of the regulated activity, and to ensure that they can effectively engage in the consultation process. The draft Guideline should not encourage interest holders to withhold relevant information from stakeholders, as this would counteract the objective of the consultation process. Instead, EDO recommends that the draft Guideline specify that stakeholders should be provided with complete draft EMPs to enable them to properly understand all relevant impacts and risks of the regulated activity, and to provide comment on them through the consultation process.	management plan **and ensure engagement commences before or early in the preparation of an EMP.** b. **No change.** Refer para 2, section 4.8.2 which states: *"When engaging with stakeholders, best practice dictates that information provided should be tailored to the specific interaction between the regulated activity and the stakeholder."* This does not preclude interest holders from providing a full EMP; noting that the version given to stakeholders may vary from the version submitted for assessment under Regulation 6, 17 or 18.
28a	Environmental Defenders Office, 9 June 2021	**Greater clarity around environmental factors and objectives in Appendix D** Appendix D of the draft Guideline lists environmental factors and objectives. EDO notes that many of the objectives are focused on a standard of 'maintained'. However, a standard requiring the	**Outside the scope of the EMP content guideline.** The environmental factors and objectives are verbatim from the NT EPA Environmental factors and objectives at:

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		maintenance of existing environmental conditions is only sufficient where the baseline or benchmark standard is "good condition". EDO notes that there is likely to be limited data in the Northern Territory to support an analysis of baseline or benchmark environmental conditions. Accordingly, EDO considers that Appendix D should provide greater clarity around how this standard will be measured in relation to each objective. Otherwise, the objectives will have limited utility. With respect to the various environmental factors and objectives listed in Appendix D, we provide the following comments: Terrestrial ecosystems – this objective should consistently adopt modern terminology, i.e. biodiversity (rather than flora and fauna), across all columns to ensure that it includes all relevant ecosystem components (fungi, bacteria, etc). This objective also needs to reflect the role of connectivity and ecosystem functionality. Conservation of biodiversity cannot be assessed at sites or regions in isolation as this would not take into account the distribution and/or populations of flora and fauna, and movement corridors or migration pathways that span two or more bioregions. EDO notes that Strategic Regional and Environmental Baseline Assessment (SREBA) is still being undertaken, and while it is incomplete, the draft Guideline should provide strong guidelines for an EMP to provide for the protection of biodiversity, including threatened species. There should also be a requirement for on-ground surveys across all seasons and a requirement that if threatened species habitat exists there is an assumption that the species may be present, regardless of whether the species was	https://ntepa.nt.gov.au/__data/assets/pdf_file/0020/804602/guide-ntepa-environmental-factors-objectives.pdf. Suggested changes to terminology under "Environmental objectives" is outside the scope of this guideline.

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		identified during on-ground surveys, in line with the precautionary principle.	
28b	Environmental Defenders Office, 9 June 2021	Hydrological processes – this objective should refer to groundwater/surface water interactions and should acknowledge that restoration may be a more suitable goal in some circumstances (e.g. rivers, water tables, etc).	**Outside the scope of the EMP content guideline.** Refer to the Department's response to item 28a.
28c	Environmental Defenders Office, 9 June 2021	Inland water environmental quality – this objective appears to include potential contradictions (e.g. ecological health and land uses), with no indication of how to determine which values will be prioritised to be 'maintained'.	**Outside the scope of the EMP content guideline.** Refer to the Department's response to item 28a.
28d	Environmental Defenders Office, 9 June 2021	Air quality – this objective should address both the environmental and health impacts linked to air quality.	**Outside the scope of the EMP content guideline.** Refer to the Department's response to item 28a.
28e	Environmental Defenders Office, 9 June 2021	Atmospheric processes – EDO strongly supports the inclusion of an objective focusing on reducing greenhouse gas (GHG) emissions. However, as currently framed, the target of net zero emissions by 2050 is meaningless unless it is linked to emissions reduction trajectories that are in line with the 1.5 / well below 2 degree temperature goals of the Paris Agreement. For this reason, a reference to the Paris temperature goals should be explicitly included in the draft Guideline to ensure the net zero goal is effective. Recommendation 9.8 of the Pepper Inquiry Recommendations states that "the NT and Australian governments seek to ensure that there is no net increase in the life cycle GHG emissions emitted in Australia from any onshore shale gas produced in the NT". The objective in the draft Guideline	**Outside the scope of the EMP content guideline.** Refer to the Department's responses to items 21e and 28a.

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		should be to avoid or minimise emissions to ensure the NT contributes to meeting Paris Agreement temperature targets and will have net zero emissions by 2050. We also consider that there should be an explicit reference to the reduction of Scope 3 emissions where relevant. Finally, we note that the adaptation component referenced in Appendix D includes a focus on adapting social structures to a changing environment, which appears to be more appropriate as a 'communities and economy' objective.	
28f	Environmental Defenders Office, 9 June 2021	Communities and economy – this objective should reflect a 'triple bottom line' approach, given the potential for conflict between various values that needs to be reconciled. This objective should also reflect the need to internalise the full social and environmental costs of regulated activity across its lifecycle (e.g. public health consequences, carbon emissions, polluter-pays incentives, rehabilitation costs, etc).	**Outside the scope of the EMP content guideline.** Refer to the Department's response to item 28a.
29	NT EPA via NT EPA meeting, 10 June 2021	The Guideline requires an explicit statement that it is the Minister for Environment that makes a decision on EMPs.	**Noted. No change.** Refer section 1.0 of the Guideline, which states: *"The Petroleum (Environment) Regulations 2016 (the Regulations) require interest holders to prepare an environment management plan (EMP) and have it **approved by the Minister for Environment**, prior to commencing an onshore petroleum regulated activity in the Northern Territory (NT)."* Refer section 4.2.1 of the Guideline, which states: *"Regulation 6 requires the interest holder who proposes to carry out a regulated activity to first submit to **the Minister [for Environment], for approval**, an EMP relating to the activity."*

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30	NT EPA via NT EPA meeting, 10 June 2021	The Guideline is not explicit on what cumulative impacts cover and needs to be clear on what cumulative impacts are considered. This includes being clear on both retrospective and prospective exploration activities and for the interest holder to consider the full range of exploration activities on a particular site (so including future). Interest holders do need to submit a 5 year technical works program to DITT, so the full range of exploration activities could be based on those future activities.	**Amended,** refer to the Department's response to item 2 pertaining to cumulative impacts and update to section 4.6.5 of the Guideline.
31	Water Resources Division, 15 June 2021	The EMP Guideline seems to cover all the necessary elements. In 4. "EMP content guidance" there could be more examples of how the EMP covers water issues as most of the examples are about biodiversity, weeds, bushfires, erosion and sedimentation. This is the case especially in 4.5 "Description of the existing environment" and 4.6 "Assessment of environmental impacts and risks".	**Amended,** refer to the Department's response to item 19a, point 3.
32	Water Resources Division, 15 June 2021	Section 4.4.2.1 could refer to providing the location of current bores and groundwater and surface water extraction licences. This information is available for the NTG Data portal and NR Maps.	**Amended.** Section 4.4.2, bullet point 13 of the Guideline has been amended to: • surface water bodies and streams and groundwater areas, **including sensitive receptors such as groundwater bores and surface water extraction licenses in the vicinity (e.g. within a 5 km radius of a well pad)** NB: Groundwater bores installed by the interest holder for extraction, control monitoring and impact monitoring are described in the EMP. Clause A.3.2.2(d) of the Code, requires *"… a minimum distance of at least 1 km between an existing water supply bore used for domestic or stock consumption and a well pad unless the owner of the water supply bore*

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			consents in writing to the location of the well pad; or hydrogeological investigations and ground water modelling indicate that a different distance is appropriate."
33	Water Resources Division, 15 June 2021	Section 4.4.4 could refer to the requirement to have a water extraction licence third dot point first sub dot point and a bore works permit fourth dot point.	**Amended.** The following footnote has been added to third dot point first sub dot point, section 4.4.4 of the Guideline: Groundwater extraction may require a water extraction licence and bore work permit. Information is available at: https://nt.gov.au/environment/water.
34	Water Resources Division, 15 June 2021	Under 4.6.5 the guideline could include a statement about impact being within any limits set by the relevant water allocation plan, if a water allocation plan has been declared for the area.	**Amended.** Section 4.6.5, bullet point 1 of the Guideline has been amended to: • water (quality, volume and aquatic ecosystems (if any), including groundwater extraction in accordance with existing groundwater extraction licences (including other users) **and within any limits set by the relevant water allocation plan (WAP), if a WAP has been declared for the area**"
35	Water Resources Division, 15 June 2021	Section 4.5 has no mention of water (except flood modelling) it would be worth mentioning something about surface water and groundwater surveys to be consistent with mentioning most other environmental domains, too.	**No change**. 1. **Surface water:** Seasonal or permanent surface water bodies within the vicinity of a regulated activity would be identified as sensitive receptors during ecological baseline studies: As stated in section 4.5 of the Guideline: *"Code (cl A.3.1(b)) requires baseline ecological studies …"* The identification of such features is integral to avoiding impacts to these features and supporting informed decisions regarding site selection.

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			2. **Groundwater:** The Code requires six months of groundwater monitoring/data prior to the commencement of hydraulic fracturing (cl B.4.17.2(b)).
36	Flora and Fauna Division, 15 June 2021	Editorial changes.	**Amended.** Flora and Fauna provided a number of editorial amendments. These have been taken into account.
37	Flora and Fauna Division, 15 June 2021	4.4.4. Construction and operational details Amended bullet point 5 to include the nature of fencing - this can have implications for entanglement by fauna. In particular, whether barbed wire is intended to be used.	**Amended.** Section 4.4.4 bullet point 5 of the Guideline amended to: • installation **(and type)** of fencing, signage, exclusion zones and security measures
38	Flora and Fauna Division, 15 June 2021	4.6. Assessment of environmental impacts and risks The Guideline states: *"A summary of the risk assessment may be included in the EMP itself."* This seems somewhat contradictory, since the first sentence recommends that the assessment be appended to the EMP, rather than included in the body of it.	**Noted. No change.** All EMPs should contain sufficient information in the main document to support the description of the regulated activity. In this context, EMPs summarise the outcomes of the risk assessment, which is provided in full either as an appendix or within the body of the EMP.
39	Flora and Fauna Division, 15 June 2021	4.6.2. Assessment method *"Risks should be classified using risk matrices based on the consequence (impact) and likelihood classifications, with each risk given a ~~unique~~ risk number."* It can't be 'unique' as some risks may end up being equal and thus have the same number.	**Noted. No change.** Each risk identified during a risk assessment should be a stand-alone line item on the risk register/spreadsheet and therefore be given a unique ID #. This approach enables cross-referencing to other EMP content requirements, such as the environmental performance outcomes and standards, and integration with residual risks.

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			This not reference to the risk rating or score.
40	Flora and Fauna Division, 15 June 2021	Appendix A: An example of key components of a regulated activity The Guideline states: *"Total area of surface disturbance/rehabilitation (ha)"* This is confusing because of the use of a hyphen (indicating 'or'). It would be more useful to ask for both of these to be specified i.e. both the area to be disturbed, and the area to be rehabilitated. *"Seismic lines (km & ha)"* Also need to include a request for km of tracks/roads that are to be installed and/or re-opened. This has bearing on fragmentation of habitat for flora & fauna.	**Amended.** Appendix A of the Guideline has been amended to include the following separate line items: 1. Total area of surface disturbance (ha) 2. Total area of rehabilitation (ha) 3. Access tracks (km & ha)
41	Flora and Fauna Division, 15 June 2021	Appendix B: Example of legislative requirements table The Guideline states: *"Interest holder has undertaken a self-assessment to determine whether the EMP requires referral and has concluded the activity does not have the potential to have a significant impact on the environment with the proposed risk mitigations in place."* should be "does" or "does not".	**Amended.** Appendix B of the Guideline has been amended to: Interest holder has undertaken a self-assessment to determine whether the EMP requires referral and has concluded the activity does or does not have the potential to have a significant impact on the environment with the proposed risk mitigations in place.
42	Flora and Fauna Division, 15 June 2021	Appendix B: Example of legislative requirements table The Guideline states:	**Amended.** Appendix B of the Guideline has been amended to: The EPBC Act provides for protection of 'matters of national environmental significance' including not only listed **threatened** species

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		"The EPBC Act provides for protection of 'matters of national environmental significance' including not only listed species but also heritage properties and Ramsar wetlands." Should say "not only listed species, but also listed ecological communities, heritage and Ramsar wetlands."	but also listed **ecological communities**, heritage **properties** and Ramsar wetlands.
43	Flora and Fauna Division, 15 June 2021	Appendix D: Environmental factors and indicative environmental values potentially relevant to onshore petroleum activities (adapted from NT EPA, 2021) The Guideline states under Terrestrial environmental quality: *"Protect the quality and integrity of land and soils environmental so that environmental quality values are supported and maintained."* Unsure where it 'fits', but currently-missing components are those relating to light and noise pollution (in the context of impact on flora and fauna, rather than on humans).	**Noted. No change.** The environmental factors and objectives are verbatim from the NT EPA Environmental factors and objectives at: https://ntepa.nt.gov.au/__data/assets/pdf_file/0020/804602/guide-ntepa-environmental-factors-objectives.pdf. Suggested changes to terminology under "Environmental objectives" is outside the scope of this Guideline.
44	Flora and Fauna Division, 15 June 2021	Appendix D: Environmental factors and indicative environmental values potentially relevant to onshore petroleum activities (adapted from NT EPA, 2021) The Guideline states: *"2. Using appropriate and justified methods (e.g. targeted surveys), verify the presence or absence of flora and fauna values where available data is inadequate or indicates a high likelihood of significant values."* Should add 'where possible' somewhere here, as it's not always so simple as this. Determining presence/absence is often challenging.	**Amended.** Appendix D of the Guideline amended to: 2. Using appropriate and justified methods (e.g. targeted surveys), verify the presence or absence of flora and fauna values **where possible**, where available data is inadequate or indicates a high likelihood of significant values.

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45	APPEA, 25 June 2021	**General Comments** It is suggested that DEPWS considers an approval process outline with decision gates and statutory approval timelines be included in the guideline. like that of the Environmental Impact Assessment and approval timelines flowchart as published on the NT EPA website. There is an opportunity to reference the change modification guideline as issued in Draft March 2021 within the EMP guideline document.	**Noted. No change.** The purpose of this document is to identify the EMP content required, so that: a) the Regulator can adequately assess the regulated activity b) the Minister for Environment can be satisfied that all impacts and risks are managed to a level that is ALARP and acceptable and that the EMP meets the content requirements of the approval criteria c) the Minister for Environment receives the right level of detail in an EMP to make a decision. DEPWS will continue to develop other supporting guidance material, such as outlining the assessment process, which has been communicated to interest holders through weekly teleconferences, workshops and industry engagement.
46	APPEA, 25 June 2021	**4.4.1 Site Selection** A demonstration that criteria have been considered should be sufficient. To undergo what is considered a multi-criteria analysis in a GIS platform is onerous, unnecessary for the range or criteria under consideration. It is not always the case that maximising the avoidance of impact in a number of criteria will give the lowest net environmental impact across all criteria. It is also not a Code of Practice (COP) or a land clearing guideline requirement.	**Noted. No change**. Most interest holders have access to drone technology and/or satellite imagery, which could be used to meet this requirement. It is the responsibility of the interest holder to demonstrate that the post land clearing footprint has not exceeded the predicted clearing footprint described in an EMP. It is not the responsibility of the regulator to chase this data from interest holders OR manage its acquisition on behalf of the interest holder. Clause A.3.5 of the Code states: *"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."*

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47	APPEA, 25 June 2021	**4.4.2 Location Mapping** Requiring aerial imagery is too specific and should refer to satellite or other imagery. This could be extrapolated to be a very expensive process and is not a requirement of the COP or the Regulations.	**Noted. Minor amendment.** All imagery required to support assessment of an EMP must be to a suitable standard and currency, such that the location of the intended regulated activity can be clearly delineated against topographical features and sensitive receptors. EMPs are statutory documents. The content and studies undertaken by an interest holder to support the regulated activity should be of sufficient quality for the Minister for Environment to make an informed assessment decision. Site selection without detailed imagery can lead to poor choices in location(s) – i.e. placing pads within flood prone areas – and subsequent delays to the assessment of the EMP. Further, regulation 5(2)(a) and cl A.3.5 of the Code are clear on the purpose of verifying land clearing compliance through mandating that geospatial data be provided to the Minister depicting areas cleared (refer section 4.4.2.1 of the Guideline). **Amendment:** Bullet point 1, under section 4.4.2 of the Guideline has been amended to: • most current remotely sensed imagery
48	APPEA, 25 June 2021	**4.4.2.1 Spatial data requirements** Currently the spatial data requirements are based upon the requirement of broad scale land clearing and are not suitable to small point disturbances or linear infrastructure. Spatial requirements should be limited to the as built spatial datasets, which can be collected through numerous methods such as satellite imagery, aerial/drone imagery or survey. The impact of	**Noted. No change.** There are two parts to the spatial data requirements: 1) to support full assessment of predicted clearing, as described in an EMP; and 2) to verify that "as built" clearing complies with the predicted clearing footprint described in an EMP.

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		exploration infrastructure on land features is assessed as a part of the EMP application and is therefore a duplication.	The provision of spatial data at the time of EMP assessment and immediately post clearing, minimises capacity for 'exploration creep'. The spatial data files that accompany an EMP enable the regulator to fully assess site selection, cumulative impacts, potential habitat fragmentation and potential progressive rehabilitation commitments. Post clearing spatial files are the verification that clearing has been undertaken in accordance with the EMP. Regulation 5(2)(a) and cl A.3.5 of the Code are clear on the purpose of verifying land clearing compliance through mandating that geospatial data be provided to the Minister depicting areas cleared (refer section 4.4.2.1 of the Guideline).
49	APPEA, 25 June 2021	**4.4.3 Site layout** This section should acknowledge that infrastructure layouts be considered as indicative. For example, in some cases the exact size and number of wastewater tanks may not be known until testing commences, with more tanks brought online to accommodate encountered water volumes. Site layouts may also change due to site specific issues encountered during construction or operations (such as additional equipment storage etc. due to unplanned wet season operations).	**Amended.** Section 4.4.3 of the Guideline has been amended to: The EMP should include a scaled site layout diagram and elevation plans, indicating the **indicative** location of infrastructure, including as applicable (but not limited to) … As more well pads are constructed and information on infrastructure is refined or becomes available, interest holders should provide that detail in subsequent EMPs. Infrastructure placement and site layout must always be constrained to the surface disturbance footprint described in the EMP.
50	APPEA, 25 June 2021	**4.4.4 Construction and operation details** Information on expected workforce composition is particularly difficult, as approvals are often sought well in advance of contractor selection. This information will have a low degree of	**Amended.** Section 4.4.4, bullet point 7 has been amended to: • predicted workforce (#) However this does not preclude interest holders demonstrating support for local NT businesses in the EMP.

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		accuracy and it is recommended it should not be mandated to provide. This is not a requirement of the COP or the Regulations.	
51	APPEA, 25 June 2021	**4.5 Description of the Exiting Environment** Greater clarity is required to determine what is required or mandatory. The industry understands what is required as per the regulations.	**Noted. Amended.** A minor amendment has been made to the first sentence in section 4.5 of the Guideline: An EMP must describe the existing environment that may be affected by the regulated activity **(see Figure 1 for examples of studies/surveys that may be required)**.
52	APPEA, 25 June 2021	**4.6 Assessment of environmental impacts and risks** The guideline suggests appending the full risk assessment and provide a summary of the risk assessment in the body of the EMP only, this is an area of duplication. "The EMP must identify all environmental impacts and risks arising from the regulated activity on the receiving environment, with particular attention on the identified environmental values of the receiving environment". This statement is one which goes against the round table meeting that a number of proponents held with DEPWS in March 2021. It was prompted that industry should be looking to reduce the amount of unnecessary/unimportant risks, such as dust impacts and focus more on the bigger risks such as waste management and control.	**Noted. No change**. If the full risk assessment is appended, then the assessment methodology and outcomes of the risk assessment should be described in the body of the EMP. There should be sufficient information in the body of the EMP to obtain a sound understanding of the project. The Regulations require all environmental impacts and risks arising directly or indirectly from all aspects of the regulated activity (Sch 1, item 3(1)(a)). However, as discussed with interest holders, the focus should be on developing environmental outcomes and performance standards for high consequence potential impacts.
53	APPEA, 25 June 2021	**4.6.2 Assessment method** APPEA seeks clarity as to whether DEPWS is suggesting that the risk methodology used in the example replace the proponents existing risk methodology. In most cases, Industry use their own risk assessment methodology, which has been developed over	During the 2019 workshop with interest holders, it was indicated that a uniform risk assessment may be a useful tool. As such, examples were given in the Guideline. The Department wants to see a full risk assessment and all elements associated with the methodology clearly outlined in the EMP in accordance

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		many years of operations. Our members are well versed in risk management practices, it is a tool used in the project delivery phases both in risk workshops and in the field. There is some confusion as to the role of the COP in the risk assessment process: "Interest holders must demonstrate in the EMP how the Code has been applied to the mitigation of impacts and risks, and identify any areas where the Code has not been applied." Industry understands that the COP is to be complied with. In terms of the order of risk management, the assessment of consequence should come after the identification of safeguards as they can impact both likelihood and consequence. Residual risk. Requiring a summary of the "area of expertise" of the personnel in the risk assessment is onerous and undefined. It is not a COP or PER requirement but adds further time and cost to the process. Risk assessments should be used by the proponent to generate good quality mitigations, the more formalised the scrutiny, the longer and less useful the risk assessment becomes.	with ISO 31000. This includes identifying the full suite of competent persons (by title only and expertise) engaged in the risk assessment workshops. **Amended.** Tables 3 and 4 have been deleted from section 4.6 of the Guideline. However the Department expects to see all the elements described in the Guideline in future EMP risk assessments, as per ISO 31000.
54	APPEA, 25 June 2021	**4.6.2.2 Identification of measures for minimising environmental impact** The statement that "risk mitigation should not rely on the lower-level controls of 'administration' and protective measures' alone." does not adequately consider that for many risks it is not possible to use any higher-level control. For example, we cannot operate a frac fleet without running the engines, and hearing protection (PPE) and administration are the relevant controls to protect the hearing of the crew.	**Noted. No change.** The statement is not excluding the use of lower-level or administrative controls where demonstrated to be the critical preventative control(s) for a particular risk mitigation. There has, in the past, been a tendency for EMPs to list "management plans" as mitigation controls. Management plans are not controls, they are documents that may contain controls, which should be adequately described/included in the risk assessment.

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		It is not possible to source silent frac spreads in Australia. The statement that "risk mitigation should not rely on the lower-level controls of 'administration' and protective measures' alone." does not adequately consider that for many risks it is not possible to use any higher-level control. For example, proponents cannot operate a hydraulic fracture fleet without running the engines, hearing protection (PPE) and administrative procedures are the relevant controls to protect the hearing of site personnel.	
55	APPEA, 25 June 2021	**4.6.2.4 ALARP** The statement: "If all of the control measures applied are 'administrative' (refer to section 4.6.2.2), it is unlikely that it would be considered that the risk has been managed to ALARP." Demonstrates a lack of understanding of many of the risks managed in the field. The controls for safe driving of a hire car (one of the most significant risks in many remote projects) are exclusively administrative. Similarly, the controls for ensuring a bulldozer does not clear an area that is not approved for clearing, is exclusively administrative.	**Noted. No change.** The Department would expect non-administrative controls to be in place for land clearing, such as GPS or pegging the intended area, to ensure the dozer driver knows exactly where clearing will occur. Similarly, non-administrative controls (such as functioning brakes and vehicle maintenance/inspections) and constructing access tracks to engineering specifications are mitigation controls designed to improve road and vehicle safety. The hierarchy of controls is a useful tool to assess the effectiveness of controls; however, the Department recognises the division between engineering controls and administrative controls may be artificial in some engineered systems because their reliability depends on skilled maintenance that depends on human actions.
56	APPEA, 25 June 2021	**4.6.2.5 Residual Risk** With regards to additional considerations, it is difficult to see how the author of an EMP is to show how many of these items have been complied with, except with the broad statements that this section prohibits. For example, how is one to demonstrate that the	**Partial amendment.** This section has been included to avoid EMPs making broad statements such as "impacts have been reduced to ALARP, and therefore are acceptable". Instead, this section is making the distinction between ALARP and acceptable. Acceptability needs to be considered with due reference to

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		level of residual risk on the risk of a vehicle incident, satisfies the "environmental values and environmental objectives of particular importance to the NT." The risk assessment processes should already consider stakeholders, legal requirements, environmental values, consequence etc. Suggestion to re-word this to section including "where not already considered." More specifically: – What are the environmental values and environmental objectives of particular importance to the NT – Regulator guidance needs to be considered before this point – Nature and scale of the effect (Consequence) is incorporated in the fundamental process of the risk assessment and does not need another review The requirement that broad statements are not sufficient is not practical. "It is not sufficient to make broad statements of acceptability without demonstration of how the above factors have been considered." Acceptability is determined by the Minister, under the PER, Div2 s9. There are no clear-cut factors which determine acceptability that we know of.	the range of environmental factors listed, noting 'environment;' by definition includes social and cultural elements. As examples, while a particular impact may be mitigated to ALARP, it may still not be acceptable to a stakeholder, or it may not meet stated objectives of a NT or Commonwealth conservation plan, or it may not be consistent with a legislated requirement. It is clear that not all criteria listed would apply to all circumstances and the list is provided as an example of things that should be considered when determining acceptability. It may also depend on the specific circumstances - in the example given related to a vehicle incident, applicability of different criteria would depend on whether the vehicle is a light vehicle or a truck transporting wastewater. The Guideline is not asking for measurable standards for each – it is asking interest holders to consider a range of factors when determining whether a residual risk is acceptable. It can be addressed in an EMP using a statement that refers to the relevant factors. **Amended.** The list in section 4.6.2.5 of the Guideline has been simplified and clarified as follows: • stakeholder expectations, to ensure not acting inconsistently with commitments made to stakeholders (determined during stakeholder engagement undertaken during the preparation of the EMP – refer section 4.8) • legislative requirements, to ensure not acting inconsistently with legal requirements • regional and national strategies and plans (e.g. regional bushfire management strategies, conservation plans, the Commonwealth

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			Significant Impact Guidelines 1.1 and 1.2, bioregional assessments, recovery plans and threat abatement plans) • environmental values and environmental objectives of particular importance to the NT (see Appendix D) • that the assessment is consistent with the principles of ESD • the nature and scale of the effect (consequence) on the environment, e.g. a risk managed to ALARP that would still result in significant impact to a threatened species community should the impact arise, would not be acceptable • whether there was sufficient certainty in the data used to determine the environmental impact • consistency with interest holder corporate levels of risk acceptance.
57	APPEA, 25 June 2021	**4.6.3 Scientific uncertainty** The definition of risk is not correct, risk is not the effect of uncertainty. Uncertainty makes the selection of likelihood and consequence more difficult, but risk is not "the effect of uncertainty on achieving stated environmental outcomes." The inclusion of uncertainty should result in a more conservative risking, however this should not be codified with such definitions that invite further delays by encouraging another level of review.	**Amended.** Section 4.6.3 of the Guideline amended to: Under a risk assessment scenario uncertainty is high where confidence in the available information is low in identifying impacts and risks. Scientific uncertainty is fully integrated into EMP risk assessments. It demonstrates the level of confidence interest holders have in the mitigations put forward to minimise impacts and risks to ALARP and acceptable levels.
58	APPEA, 25 June 2021	**4.6.4 Bowties** Bowties are particularly useful for demonstrating how high consequence events are managed – consider removing the "low likelihood" in this section as it is irrelevant.	**Noted. Partially amended.** The regulator proposes to focus resources on the critical control approach that looks at those greater consequence impacts and risks that could result in a major incident. One method of demonstrating an adequate

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		The implication that Bowties are preferable is a very subjective view, in practice they are much more useful in an incident analysis. We suggest wording be added to the guideline making the use of bowties non-mandatory.	understanding of how an impact might occur, and controls to manage the impact, is through the use of bowties. Bowties may not be mandatory, however a critical control approach increases efficiency and compliance and provides a transparent monitoring regime by the regulator to ensure the ongoing effectiveness of controls. Separate guidance will be published on how interest holders can implement the critical control approach. **Amended.** Section 4.6.4 of the Guideline amended to: They are particularly useful for demonstrating how high consequence events are managed (i.e. events that occur when there is failure to implement preventative and mitigative (recovery) controls).
59	APPEA, 25 June 2021	**4.6.5 Cumulative impacts and risk** It is inconsistent that Cumulative impact of groundwater should require collation of data from very large regional areas, 50km or 100km away, whilst groundwater impact monitoring may not use data from bores that are as close as 2kms. Cumulative impacts should be considered on the same local basis that other impacts are considered on.	**Noted. No change.** Schedule 1, reg 3(2)(b) states: *"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."* Interest holders must demonstrate compliance with the Regulations. The spatial context to address this regulation is "in or near" the exploration permit area. Also refer to the Department's response to item 2.
60	APPEA, 25 June 2021	**4.6.6 Environmental outcomes, performance standards and measurement criteria** Table 6 appears to be repetitive; where COP references are recorded against critical controls, this is also often done in the risk	**Noted. No change.**

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		assessment table (as suggested is appended and summarised within the EMP). What value is there in referencing the COP against critical controls in multiple locations throughout the EMP, more consideration is required to reduce duplication in this area.	
60	APPEA, 25 June 2021	**Impact matrix Table 7 pg 36** A greater understanding of the purpose of Table 7 is required. It is not determined though the reading of the draft guideline if table 7 represents shared performance standards across the various environmental factors. Further explanation is requested to comment on this table.	**Noted. Minor amendment.** Table 7 is provided as an example of how an interest holder may determine which impacts and risks should be brought forward and presented as shown in Table 6. It is a tool only for guidance and not for inclusion in an EMP specifically. **Amended:** Table 7 is now referred to as Appendix E.
62	APPEA, 25 June 2021	**4.6.7 Hydraulic fracturing chemical disclosure and risk assessment** APPEA and its members seek clarification as to how DEPWS intends to reference a future approved hydraulic fracture stimulation (HFS) chemical register and refer to how it is to be used in conjunction with the EMP approval process.	**Noted. Outside the scope of the EMP content guideline.**
63	APPEA, 25 June 2021	**4.7 Sub plans** **4.7.7 Rehabilitation Management Plan** The rehabilitation plan must be developed by a suitably qualified person, and include: • *methods to be used for preservation of stockpiled topsoil, removal of compaction and spread of litter to assist natural regeneration, as well as any proposed seeding program,*	**Noted. No change.** Interest holders are expected to apply best practice approaches to environmental protection including stockpiling soils to act as windrows, thereby reducing erosion and sedimentation, or to support future natural regeneration and meet cl A.3.9(d) of the Code, which states: *"All significantly disturbed land must be reinstated to its pre-disturbed condition. For areas that previously contained native vegetation, native vegetation must be re-*

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		It is not understood that this is a mandatory requirement stipulated in the regulations or the COP.	*established such that the corridors become ecologically integrated into the surrounding landscape."* Stockpiling topsoil removed during clearing is not a new soil conservation practice to extractive industries and is often recognised as a critical component of rehabilitation planning.
64	APPEA, 25 June 2021	**4.8 Stakeholder engagement** **4.8.3 Information in the EMP** This section seems to have increased significantly, please review with what is necessary to append to the EMP. Areas of concern are disclosure of stakeholder contact details.	**Noted. No change.** Section 4.8 of the Guideline has been written to clarify what constitutes "stakeholder engagement". Schedule 1, item 9 of the Regulations states that an EMP must include: a list of stakeholders and contact details; a copy of the information provided to stakeholders; a summary and copy of each response from a stakeholder; an assessment of the merits/objection by the stakeholder; a statement of the interest holder's response or proposed response to each issue; a record or communications (e.g. by phone); details of changes made to the EMP emerging from the stakeholder engagement; and information on future stakeholder engagement. Currently, these elements must be included in an EMP in order for the Minister to approve an EMP (including everything in Schedule 1 is an approval criteria in reg 9).
65	APPEA, 25 June 2021	**4.9 Implementation Strategy** The suggestion that the implementation strategy should include the chain of command during emergencies risks confusion with the Emergency Contingency Plan. We suggest the implementation strategy refer to the Emergency Contingency Plan for emergencies.	**Noted. No change.** Refer Sch 1, item 7(a) which states: *"An implementation strategy must … establish a clear chain of command, including during emergencies or potential emergencies …"*

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66	APPEA, 25 June 2021	**4.9.1 Management systems, practices and procedures** The management system requirements add a significant volume of pages to the document, but generally do not enhance environmental outcomes. We ask that this section refer to proponents' online systems and not regurgitate material published elsewhere.	**Noted. No change.** Refer Sch 1, item 6(2)(a) which states: *"The implementation strategy must give details of …the specific systems, practices and procedures to be used to ensure that the environmental outcomes and environmental performance standards in the plan are met …"*
67	APPEA, 25 June 2021	**4.9.3 Personnel** The focus on emergencies should be referred to the Emergency Contingency plan.	**Noted. No change.** Refer Department response item 65.
68a	Central Land Council (CLC), 28 June 2021	**1. Acknowledge Land Councils' ability to provide expertise on culture and ecological** The Central Land Council has been assisting Aboriginal people to protect their sacred sites, in accordance with its functions under section 23(1)(ba) ALRA for several decades, and has significant expertise in this field. It is also a function of Land Councils under section 23(1)(a) & (b) to assist Aboriginal people with the management of their land. The Central Land Council ranger groups access traditional owners with unsurpassed traditional ecological knowledge in this region. It would be appropriate for the Guideline to point to the Land Councils as a source of expertise on cultural and ecological knowledge and acknowledge the assistance Land Councils can offer operators in these fields.	**Amended.** Section 3 of the Guideline has been amended to include the following text and a new figure (Figure 2): Interest holders should liaise early with all Government agencies that may have an interest in the assessment of the EMP; and organisations such as Aboriginal land councils, which are a source of expertise on cultural and ecological knowledge. Figure 2 shows the engagement complexities underpinning the development and assessment of an EMP. Information regarding stakeholder engagement in accordance with reg 7 and Schedule 1, item 9 is provided in section 4.8.
68b		Operators in the CLC's region agree as part of land access conditions to obtain a Sacred Site Clearance Certificate in order to protect sacred sites and other areas of cultural significance. The	**Noted. Partially amended.** 1. Amendments to the Regulations are outside the scope of the Guideline.

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		CLC is advocating for changes to the Regulations to include Land Council Sacred Site Clearance Certificates as an alternative to an Authority Certificate. Given the ongoing relationship of Land Councils with operators in managing land access agreements, it would be sensible for the Regulations to reflect the existing practice rather than requiring a duplication of processes as is the case when an Authority Certificate is required in the CLC's region. This would lead to greater efficiencies. The Flow chart on page 11 should include reference to Land Councils' sacred site clearance processes given the critical role of the Land Councils in sacred site protection.	2. **Amended**. Figure 1 has been amended to also include reference to Land Council clearance processes for sacred site protection.
69	CLC, 28 June 2021	**2. To include sacred sites as part of the site selection process (Section 4.4.1 page 14)** The term cultural heritage is included as a point of consideration for Site Selection, however CLC considers that sacred sites should also be included. Sacred sites require consideration in their own right, as is required by the ALRA and the NT Aboriginal Sacred Sites Act (NTASSA). It is appropriate to refer to the specific requirements to protect sacred sites under these Acts.	**Amended.** Refer to the Department's response to item 11 with an amendment to section 4.4.1 of the Guideline.
70	CLC, 28 June 2021	**3. To include the terms outstation and homelands in the definition of habitable dwelling (Section 4.4.1, page 15)** The Guidelines refer to petroleum infrastructure to "not be placed within 2km of an existing or proposed habitable dwelling including all building or premises where people reside or work, schools, associated playgrounds, permanent sporting facilities and hospitals or other community medical facilities". The terms outstation and homelands should be included in the statement, as	**Amended.** Section 4.4.1 of the Guideline has been amended to include a footnote: The EMP should also demonstrate that infrastructure will not be placed within 2 km of an existing or proposed habitable dwelling including all buildings or premises where people reside[a] or work, schools and associated playgrounds, permanent sporting facilities and hospitals or other community medical facilities (Code cl A.3.1(f)).

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		they are dwellings resided in intermittently on traditional and remote land.	**Footnote:** [a] Including outstations and homelands.
71a	CLC, 28 June 2021	**4. Cultural Heritage (pages 24 & 25, table D)** The use of Aboriginal and cultural heritage in the example table at page 24 is unacceptable. The table appears to include sacred sites in its reference to cultural heritage sites. It is not appropriate to grade sacred sites as being of "low significance", "moderate significance", "high local or national significance" with respective consequences of "very low", "minor", "moderate", "high" and "extreme". Protection of sacred sites is a uniform requirement and cannot be assessed by degrees of significance or varying levels of impact.	**Amended.** Tables 3 and 4 have been deleted from the section 4.6 of the Guideline.
71b	CLC, 28 June 2021	It should be noted that under the ALRA and the NTASSA any unauthorised entry onto sacred site would have a low risk consequence. It is to be assumed that companies will do their utmost to comply with the law, and would regard any breach of the law as unacceptable, as would traditional owners. Any damage to a sacred site or unauthorised entry onto a restricted area is not only a potential breach of law, it also has the distinct possibility of damaging the operator's relationship with traditional owners and impacting on the operator's social licence to operate.	**Amended.** Tables 3 and 4 have been deleted from the section 4.6 of the Guideline.
71c	CLC, 28 June 2021	The confusing application of definitions in the NT Heritage Act 2011 to Aboriginal heritage should be removed. The guideline should refer to sacred sites legislation, namely the ALRA and the NTASSA in order to emphasise the need for operators to ensure compliance with those laws. If there is to be an example of	**Amended.** Tables 3 and 4 have been deleted from the section 4.6 of the Guideline.

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		heritage included in the table, it should refer to non-Aboriginal heritage only.	
71d	CLC, 28 June 2021	The guidelines should refer operators to the Land Councils for appropriate guidance on sacred site matters, given the role played by Land Councils in representing traditional owners and native title holders with respect to land access. These negotiations also encompass appropriate sacred site protection. The CLC sacred site clearance processes are a key component of land access agreements.	**Amended.** Refer to the Department's response to item 68a.
71e	CLC, 28 June 2021	Similarly the culture and heritage section in table D does not set out an appropriate and robust methodology for sacred site and traditional cultural protection. It is never suitable to only do a desktop analysis for sacred sites and other areas of cultural significance to Aboriginal people. Operators should be referred to the Land Councils for guidance on sacred site protection and appropriate identification of other places of significance as set out in the table, as well as traditional ecological knowledge. Land Councils are able to utilise the appropriate expertise of traditional owners, in concert with other relevantly qualified people.	**Amended.** Tables 3 and 4 have been deleted from the section 4.6 of the Guideline. Figure 1 of the Guideline has been amended to include reference to Land Council clearance processes for sacred site protection (see response to item 68b).
72	CLC, 28 June 2021	**5. Environmental performance standards should clearly define a timeframe (pages 33- 35, Table 6)** The example table for presenting environmental performance outcomes and standards is very detailed and useful. The guidelines state that all performance standards should use the S.M.A.R.T criteria when being measured, this includes being time based. The timeframes of control measures are not easily identifiable, while the administrative section brushes over such	**Noted. No change.** It is the measurement criteria where SMART is applied, whereas the standard should be applied at all times.

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		detail (i.e. daily inspections of sump liner for integrity). A dedicated column clearly identifying the timeframe of control methods should be included.	
73a	CLC, 28 June 2021	**6. Water quality and Groundwater Dependent Ecosystems should have separate management plans** The guideline lacks emphasis on water quality and terrestrial and aquatic Groundwater Dependent Ecosystems (GDEs). The ecosystems, especially in a desert context are often areas of high biodiversity significance, refugia and/or cultural significance. While there is mention of GDEs in appendix D under the heading aquatic ecosystems, a stronger emphasis should be made to the assessment and monitoring of onshore petroleum activities near aquatic ecosystems. This should include groundwater flow models and on-ground monitoring programs.	**No change.** Seasonal or permanent surface water bodies within the vicinity of a regulated activity would be identified as sensitive receptors during ecological baseline studies. As stated in section 4.5 of the Guideline: "Code (cl A.3.1(b)) requires baseline ecological studies …" The identification of such features is integral to avoiding impacts to these features and supporting informed decisions regarding, for example, site selection, erosion and sediment control, etc. Potential impacts of groundwater extraction on GDEs is assessed when seeking a groundwater extraction licence and bore permit. Clause A.3.2.2(d) of the Code, requires *"… a minimum distance of at least 1 km between an existing water supply bore used for domestic or stock consumption and a well pad unless the owner of the water supply bore consents in writing to the location of the well pad; or hydrogeological investigations and ground water modelling indicate that a different distance is appropriate."* Further, section 1 of the Guideline has been updated to include incorporation of scientific research into EMPs (see item 10).
73b	CLC, 28 June 2021	The impacts on water quality from onshore petroleum activities are not sufficiently addressed in the guideline. Activities will require significant volumes of water and the risks need to be covered accordingly. Both water quality and terrestrial and aquatic GDEs should be clearly addressed by providing separate management plans and headings added under Section 4.7 Sub-Plans.	**Noted. No change.** Refer above, item 73a. Also groundwater use and potential impacts is assessed during the application for a water extraction licence and described in the EMP. The use of surface water is prohibited under the Water Act.

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74	CLC, 28 June 2021	**7. Suitably qualified persons** Section 4.7.4 (page 39) states that a [suitably] qualified person should perform the Erosion and Sediment Control Plan works. While the emphasis is made in this section, the importance of utilising experienced professionals is not emphasised throughout the document. The importance of utilising experts for the environmental risk assessment is made once in section 4.6.2.1 (page 21). Using expertise for the risk assessment and management plans should be stated more clearly.	**Noted. No change.** In accordance with ISO 31000 all risk assessments should be conducted systematically, iteratively and collaboratively, drawing on the knowledge and views of internal and external participants/expertise. Further, detailed studies undertaken to inform EMPs are usually conducted by third party consultants.
75	NLC, 16 July 2021 (DRAFT)	**Recommendation 1: Sufficient regulatory reform timelines.** The NLC recommends that the EMP Content Guidelines need to clearly state that the following: That the EMP Content Guidelines will be developed over two stages. Stage 1 (the current guidelines) will provide regulatory advice on onshore petroleum related exploration license approval process. Stage 2, will require the 135 Pepper Inquiry recommendations to be implemented before Stage 2 EMP Content Guidelines, covering both exploration licenses and developmental licenses, will be made available to interest holders, stakeholders and applied by regulators.	**Outside the scope of the EMP content guideline.** It is not within the scope of the Guideline to address or resolve the implementation of HFI recommendations, which undergo review and approval through two independent oversight mechanisms. The Guideline will be amended at least annually to incorporate any changes associated with HFI outcomes, departmental guidance material or policies.
76	NLC, 16 July 2021 (DRAFT)	**Recommendation 2: Document structure.** The NLC recommends that a figure that summarises the process and regulatory context for the EMP Content Guidelines, including the relationship between the NT EPA Environmental Impact Assessment (EIA) process and EMP assessment process; public opportunities to review and comment on assessment related submissions and decisions; and the Ministerial signoff process	**Outside the scope of the EMP content guideline.** The purpose of this guideline is to outline the information that is required in an EMP. The EIA assessment process is separate to the EMP assessment process. Currently, the Minister is seeking the advice of the NT EPA under section 29B of the *Northern Territory Environment Protection Authority Act 2012* on all EMPs received under the Regulations. The NT EPA has the opportunity to

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		would improve the EMP Content Guidelines. It also see how the precautionary principle is applied within the EMP Content Guidelines process.	'call-in' an EMP in accordance with s53 of the Environment Protection Act during the assessment process. Separate guidance will be published on the EMP assessment process and timeframes. Guidance on timeframes for public comments on drilling and hydraulic fracturing EMPs is available at: https://depws.nt.gov.au/__data/assets/pdf_file/0006/796785/public-submission-guidance-petroleum-emps.pdf).
77	NLC, 16 July 2021 (DRAFT)	**Recommendation 3: Document structure.** The NLC recommends the following additional items at the front-end of the document to the EMP Content Guidelines to make it an easier read, understand and apply to development applications: a) an Executive summary b) a Table and/or supporting downloadable spreadsheet that summarises regulatory requirements versus environmental factors.	**Noted. No change.** a) **Executive summary**: There is no requirement for the guideline to include an executive summary. b) **Table regulation v environmental factors**: The environmental factors and objectives are a guide and are already available on the NT EPA website at: https://ntepa.nt.gov.au/__data/assets/pdf_file/0020/804602/guide-ntepa-environmental-factors-objectives.pdf. It is recommended that interest holders consider the environmental factors and objectives when undertaking risk assessment and site selection to align future development that may require NT EPA assessment.
78	NLC, 16 July 2021 (DRAFT)	**Recommendation 4: Guiding documents.** a) The NLC recommends that the following references are cited and a brief overview of the following two documents, which play key roles in driving the environmental regulatory reform process related to	**Noted. No change.** The purpose of this guideline is to outline the information content that is required in an EMP. The purpose of the guideline is not to provide an update on the extent to which the Hydraulic Fracturing Inquiry recommendations have been implemented.

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		onshore petroleum, are included in the EMP Content Guidelines: (i) Pepper Inquiry final report (2018); (ii) NTG Scientific inquiry into hydraulic fracturing: Implementation Plan https://hydraulicfracturing.nt.gov.au/implementation-plan b) Given the level of detail contained in the Pepper Inquiry Report it is also recommended that wherever possible links to relevant Inquiry recommendations is also included in the EMP Content Guidelines.	The guideline supplements the requirements of the Code and the Regulations, which contain many of the HFI recommendations already implemented.
79	NLC, 16 July 2021 (DRAFT)	**Recommendation 5: Climate change and Greenhouse gas emissions.** The NLC recommends that a section related to Climate Change and greenhouse gas emissions be added to the EMP Content Guidelines with text to indicate that legislation and policy instruments are currently being developed. The content for this section should be consistent with the nine Pepper Recommendations contained in Chapter 9 of the final report.	**Noted**. Refer to the Department's responses items 2, 5 and 21c.
80	NLC, 16 July 2021 (DRAFT)	**Recommendation 6: Aboriginal peoples values and risks.** The NLC recommends that a stand-alone section in 4.6 Assessment of environmental impacts and risks and 4.7 Sub-plans with the EMP Content Guidelines be added. The contents of these sections should be consistent with the Pepper Inquiry recommendations and NTG Implementation Plan. Where relevant legislation or policy instruments do not exist or are still being	**Noted. No change.** Refer to the Department's response to items 17 and 27. The Guideline is directed towards interest holders to assist in the development of an EMP. It is expected that interest holders will seek guidance and advice from organisations such as the NLC (and relevant government departments) if it is

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		developed this should be noted in the EMP Content Guidelines sections. In addition, the NLC recommends that that the NTG work with Aboriginal peak bodies and Land Councils to develop and implement agreed guidelines on: • Aboriginal consultation and engagement in relation to environmental protection and ESD. • the development of risk criteria. • the review of risk criteria and registration conditions. • ensuring public consultation timeframes that are sensitive to the unique challenges and resources of Aboriginal communities and their representative bodies and climatic conditions.	unclear how to engage appropriately. The regulator's function is not to direct interest holders on "how to" engage.
81	NLC, 16 July 2021 (DRAFT)	**Recommendation 7: Aboriginal peoples values and risks.** The NLC recommends, that the Northern Territory legislative regime (including any voluntary codes) provides adequate opportunity for Aboriginal landowners and Aboriginal communities to be involved at every stage of the approvals process and mining life cycle, including a requirement that rehabilitation after mine closure should be to the satisfaction of Aboriginal landowners. The NLC believes, that reforms pursued through co-designed policy making and implementation are more likely to achieve good outcomes for all Territorians.	**Noted. No change.** In addition to the public comment process, interest holders are required to engage with all identified stakeholders, which may include Aboriginal landowners, communities and people. They are also encouraged to engage early and demonstrate engagement has been completed prior to submission of an EMP for assessment (reg 7 and 8). Further, interest holders are required to ensure stakeholder engagement is ongoing, which provides opportunity for continuous improvement.

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82	NLC, 16 July 2021 (DRAFT)	**Recommendation 8: SREBA framework** The NLC recommends that in reviewing the EMP Content Guidelines in relation to both baseline data and ways to better incorporate Aboriginal concerns and values into the planning and regulatory process that: (a) the 2020 NLC submission be revisited; and (b) that NTG works collaboratively with Land Councils and other Aboriginal peak bodies to collect baseline data and develop agreed best practice guidelines for assessing the risks posed to Aboriginal environmental, cultural and economic values.	**Noted. Outside the scope of the EMP content guideline.** The Guideline is directed towards interest holders to assist in the development of an EMP. The NT government is working collaboratively within the SREBA framework to deliver baseline studies within six domains including social, cultural and economic. The purpose of the studies into social, cultural and economic environments is to identify the characteristics of the region and the aspects that may be sensitive to development and to consider the potential cumulative impacts of multiple projects.
83	NLC, 16 July 2021 (DRAFT)	**Recommendation 9: Cumulative risk.** The NLC recommends that additional details and guidelines be provided in Section 4.6.5 in relation to how cumulative risk will be assessed; OR in the absence of current NTG legislation and supporting policy instruments that this is noted in this section and an interim source of information to guide the assessment of cumulative impacts and risk is provided e.g. policy instruments used in another jurisdiction or currently used by industry, and regulated by authorities.	**Amended.** Refer to the Department's response to item 2.
84	NLC, 16 July 2021 (DRAFT)	**Recommendation 10: Cumulative risk**. The NLC believes that to make it clear to interest holders, that meeting EMP Content Guidelines requirements has priority over operational processes, that two changes are made to the summary of the EMP content summary on p.7: • the dot-point in Box 5 be moved to the bottom of the list	**Noted. No change**. The list is not hierarchical. EMPs are intended to be a statutory, operational document, therefore they must align with all operational processes.

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		• the text be changed to: 'as long as all the above requirements are met, the EMP can be designed to align with operational requirements.	
85	NLC, 16 July 2021 (DRAFT)	**Recommendation 11: Site selection.** The NLC recommends, to be consistent with stated EP Act 2019 objects and principles plus the Pepper Inquiry recommendations, that the wording of the Code of Practice related to Site selection and planning (A.3.1), needs to made consistent with EP Act 2019 ESD principles and the NT EPA factors and objectives.	**Noted. Outside the scope of the EMP content guideline.** It is not within the scope of the Guideline to address or resolve wording in the Code, which will undergo separate review and approval within the next 6 months.
86	NLC, 16 July 2021 (DRAFT)	**Recommendation 12: Water allocations and water quality.** Hydraulic fracturing will require significant volumes of water; the risks related to this requirement is not covered by existing regulations and codes of practice. The Pepper Inquiry recommendations from Chapter 7- Water Quality need to be better incorporated into the Petroleum Regulations, the Code of Practice and ultimately the EMP Content Guidelines. This is a key part of the recommended regulatory reforms and needs to be actioned by the NTG to improve the EMP regulatory process.	**Noted. No change.** Refer to the Department's response to item 21c(a) and 35(2).
87	NLC, 16 July 2021 (DRAFT)	**Recommendation 13: Flowback wastewater.** The NLC recommends that the EMP Content Guidelines have a stand-alone section for management of wastewater, including its treatment and disposal. Any EMP guidelines related to flowback of wastewaters needs to include disposal options and the water quality indicators detailed above (page 14).	**Noted. No change.** Refer to the Department's response to item 14 and 25b.