



Jellinbah Group



LAKE VERMONT MEADOWBROOK PROJECT
ENVIRONMENTAL IMPACT STATEMENT

MATTERS OF NATIONAL ENVIRONMENTAL
SIGNIFICANCE TERMS OF REFERENCE
RECONCILIATION TABLE

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ENVIRONMENTAL SOLUTIONS



Lake Vermont Meadow Brook Project Matters of National Environmental Significance Terms of Reference Reconciliation Table

Matters of National Environmental Significance Terms of Reference	Section
Content requirements of the EIS	
Foreword	
<p>The proposed action was referred on 23 July 2019 to the then Australian Government Department of the Environment and Energy (DoEE) 2019/8485). On 22 November 2019, DoEE determined the proposed action to be a controlled action under the Commonwealth EPBC Act.</p> <p>The controlling provisions are sections:</p> <ul style="list-style-type: none"> • 18 and 18A (listed threatened species and communities) • 20 and 20A (listed migratory species) • 24D and 24E (A water resource, in relation to coal seam gas development and large coal mining development). <p>The proposed action will be assessed under the bilateral agreement between the Commonwealth and the State of Queensland (section 45 of the EPBC Act) using the EIS prepared under the EP Act. The TOR must be addressed by the proponent in a stand-alone section that primarily focuses on the MNES listed above. This section (henceforth called the 'MNES section') must contain sufficient information to be read alone with reference to technical data or supplementary reports where appropriate. Any detailed technical information to support the text in the MNES section must be included as appendices to the draft EIS.</p>	Noted
General content	
<p>The MNES section must take into consideration the EPBC Act Significant Impact Guidelines that can be downloaded from the following web site: http://www.environment.gov.au/epbc/guidelines-policies.html.</p> <p>If it is necessary to make use of material that is considered to be of a confidential nature, the proponent must consult with DAWE on the preferred presentation of that material, before submitting it to the Minister for approval for publication.</p> <p>The proponent must ensure that the MNES section assesses compliance of the action with the principles of Ecological Sustainable Development as set out in the EPBC Act, and the objects of the EPBC Act at Attachment 1. A copy of Schedule 4 of the EPBC Regulations, 'Matters to be addressed by draft public environment report and environmental impact statement', is at Attachment 2.</p>	Noted
Format	
<p>The MNES section must be written so that any conclusions reached are supported by clear evidence and can be independently assessed. To this end all sources must be appropriately referenced using the Harvard standard. The reference list should include the address of any Internet "web" pages used as data sources.</p> <p>Maps, diagrams and other illustrative material must be included in the MNES section in a format so that they are legible and easily understood. The MNES section must be produced on A4 size paper capable of being photocopied, with maps and diagrams on A4 or A3 size and in colour where possible.</p>	Noted



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	The proponent must consider the format and style of the document appropriate for publication on the Internet. The capacity of the website to store data and display the material may have some bearing on how the document is constructed.	
1	General information	
	Provide the background and context of the action including:	Section 21.1.1
	(a) the title of the action;	Section 21.1.2
	(b) the full name and postal address of the designated proponent;	Section 21.1.3
	(c) a clear outline of the objective of the action;	Section 21.1.4
	(d) the location of the action;	Section 21.1.5
	(e) the background to the development of the action;	Section 21.1.5
	(f) how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action;	Section 21.1.5
	(g) the current status of the action; and	Section 21.1.5
	(h) the consequences of not proceeding with the action.	Section 21.8.7
2	Description of the action	
	All construction, operational, rehabilitation and decommissioning components of the action must be described in detail. This must include the precise location of all works to be undertaken, structures to be built or elements of the action that may have impacts on MNES.	Section 21.2 to 21.7
	The description of the action must also include details on how the works are to be undertaken (including stages of development and their timing) and design parameters for those aspects of the structures or elements of the action that may have relevant impacts.	Section 21.2.2 to 21.2.10
	Provide the total size (in hectares) of the project site and the total size (in hectares) of the disturbance footprint. If the disturbance footprint is the same as the project site, the MNES section must include a statement to this effect.	Section 21.2.2.10
	The MNES section must include a map (or maps) which clearly identify all components of the action and their location within the project site.	Maps in Sections 21.1.4 and 21.2.3
3	Feasible alternatives	
	Any feasible alternatives to the action to the extent reasonably practicable, including:	
	(a) if relevant, the alternative of taking no action	
	(b) a comparative description of the impacts of each alternative on the MNES above, and	
	(c) sufficient detail to make clear why any alternative is preferred to another.	
	Short, medium and long-term advantages and disadvantages of the options must be discussed.	Section 21.8
4	Description of the environment	



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<p>A description of the environment of the project site and the surrounding areas that may be affected by the action (this may also include downstream of the project site). This section must include information relevant to listed threatened species and ecological communities, and their habitat, listed migratory species and their habitat, and water resources, and third party users.</p>	<p>Sections 21.9.1, 21.11.1 to 21.11.2, 21.12.2, 21.13.2, 21.14.2, 21.15.2</p>
<p>5 Listed threatened species and communities (sections 18 and 18A)</p>	
<p>The MNES section must address, at a minimum, impacts on the following listed threatened species and ecological communities for the action:</p> <ul style="list-style-type: none"> • Curlew Sandpiper (<i>Calidris ferruginea</i>) – Critically Endangered • Red Goshawk (<i>Erythrotriorchis radiatus</i>) – Vulnerable • Squatter Pigeon (Southern) (<i>Geophaps scripta scripta</i>) – Vulnerable • Painted Honeyeater (<i>Grantiella picta</i>) – Vulnerable • Star Finch (Eastern) (<i>Neochmia ruficauda ruficauda</i>) – Endangered • Australian Painted Snipe (<i>Rostratula australis</i>) – Endangered • Northern Quoll (<i>Dasyurus hallucatus</i>) – Endangered • Ghost Bat (<i>Macroderma gigas</i>) – Vulnerable • Corben’s Long-eared Bat (<i>Nyctophilus corbeni</i>) – Vulnerable • Koala (combined populations of Qld, NSW and the ACT) (<i>Phascolarctos cinereus</i>) – Vulnerable • Greater Glider (<i>Petauroides volans</i>) – Vulnerable • Grey-headed Flying Fox (<i>Pteropus poliocephalus</i>) - Vulnerable • Cycas ophiolitica – Endangered • Quassia (<i>Samadera bidwillii</i>) – Vulnerable • Ornamental Snake (<i>Denisonia maculata</i>) – Vulnerable • Yakka Skink (<i>Egernia rugosa</i>) – Vulnerable • White-throated Snapping Turtle (<i>Elseya albagula</i>) – Critically endangered • Dunmall’s Snake (<i>Furina dunmalli</i>) – Vulnerable • Retro Slider (<i>Lerista allanae</i>) – Endangered • Fitzroy River Turtle (<i>Rheodytes leukops</i>) – Vulnerable • Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant) threatened ecological community – Endangered • Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin threatened ecological community – Endangered • Poplar Box Grassy Woodland on Alluvial Plains threatened ecological community – Endangered <p>Note: The list above may not be a complete list of listed threatened species and ecological communities that will or are likely be impacted by the action. It is the proponent’s responsibility to ensure that any listed threatened species and ecological communities at the time of the controlled action decision, which will or are likely to be impacted by the project, are assessed for the Minister’s consideration. Any listing events (e.g. the listing or up-listing of a species) that occur after the controlled action decision do not affect the assessment and approval process.</p>	<p>Section 21.12.4, 21.13.4</p>
<p>The structure of the assessment of listed threatened species and communities in the MNES section must be the following:</p> <ul style="list-style-type: none"> • Description: describe each listed threatened species and ecological communities listed above (including EPBC Act listing status, distribution, life history, etc.). • Desktop analysis: describe the desktop assessment methodology used to inform the field surveys within, adjacent to and/or downstream of the project site. The MNES section must identify and describe known historical records of listed threatened species and ecological communities in the broader region. All known records must be supported by an appropriate source (i.e. Commonwealth and State databases, 	<p>Section 21.12.4, 21.13.4</p>



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<p>published research, publicly available survey reports, etc.), the year of the record and a brief description of the habitat in which the record was identified.</p> <ul style="list-style-type: none"> • Survey effort: provide details of the scope, methodology, timing and effort of field surveys (which must be undertaken by qualified species experts with demonstrated experience in detecting the above species) within, adjacent to and/or downstream of the project site. Provide details of: <ol style="list-style-type: none"> 1. how surveys were undertaken in accordance with relevant Commonwealth, State guidelines or best practice survey guidelines at the time of the surveys; and 2. if relevant, the justification for divergence from relevant Commonwealth, State guidelines or best practice survey guidelines at the time of the surveys. • Survey outcomes: state the total number of records (individuals and evidence of presence) of listed threatened species and ecological communities within, adjacent to and/or downstream of the project site. All records must be supported by the year of the record and a brief description of the habitat in which the record was identified. • Habitat assessment: provide a robust assessment of the potential habitat available within, adjacent to and/or downstream of the project site for listed threatened species and ecological communities. This must include the assessment of specific habitat requirement/s relevant to each listed threatened species and ecological community (e.g. breeding, foraging, dispersal, known important habitat, suitable habitats, roosting, etc.). Habitat assessments must be derived from information obtained from: <ol style="list-style-type: none"> 1. field surveys and vegetation assessments 2. the Species Profile and Threats (SPRAT) Database 3. relevant DAWE documents (e.g. approved conservation advices, recovery plans, listing advices, draft referral guidelines, etc.), and 4. published research and other relevant sources (where relevant). <p>The MNES section must not just consider Queensland Regional Ecosystem (RE) mapping to determine habitat for listed threatened species – habitat assessments must consider and align with the information in the SPRAT Database and relevant DAWE documents. However, some Queensland REs align with the descriptions for some ecological communities and therefore the use of Queensland REs is acceptable in these cases.</p> <p>Provide the total amount of each type of habitat (in hectares) in the project site for each listed threatened species and ecological community.</p> <p>The MNES section must also include a detailed habitat assessment for any other listed threatened species and/or ecological communities identified during field surveys.</p> <p>DAWE considers it is not unreasonable that a species may still use a project site at some point in time because the vegetation and habitat feature/s to support its requirements are present. As such, the potential for occurrence of listed threatened species and communities must also be considered and assessed in the MNES section.</p> <ul style="list-style-type: none"> • Impact assessment: describe and assess all impacts (direct, indirect and cumulative) to listed threatened species and ecological communities identified above and any others that are found to be or may potentially be present in areas that may be impacted by the action. The impact assessment must include consideration of the requirements in the 'Relevant Impacts' section below. <p>Identify which component/s and stage/s of the action is of relevance to each listed threatened species and/or ecological community and/or if the threat of impact relates to consequential actions.</p> <p>For threatened ecological communities, the total direct impact (in hectares) to each identified patch within and adjacent to the project site must be provided in the MNES section compared to its current extent. Further, the impact assessment for ecological communities must include a discussion on the post-impact viability of each individual</p>	



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<p>patch within and adjacent to the project site to be directly impacted from fragmentation as a result of vegetation clearance.</p> <p>Provide the total amount of each type of habitat (in hectares) in the disturbance footprint for each listed threatened species and ecological community.</p> <p>Detailed mapping of habitat type/s for relevant listed threatened species and ecological communities that are found to be, or may potentially be, present within, adjacent to and/or downstream of the project site must be included in the MNES section, and must:</p> <ol style="list-style-type: none"> 1. be specific to the habitat assessment undertaken for each listed threatened species and ecological community (i.e. not illustrate relevant Queensland REs only); 2. include an overlay of the project disturbance footprint; and 3. include known records of individuals (or evidence of individuals) derived from desktop analysis and/or field surveys. <ul style="list-style-type: none"> • Avoidance, mitigation and management: describe all relevant species-specific measures proposed to avoid, mitigate and manage potential impacts on listed threatened species and ecological communities as required in the 'Avoidance, Mitigation and Management' section below. <p>The MNES section must not just state proposed management plans and/or broad objectives to describe avoidance, mitigation and management measures. The MNES section must include detailed measures that will be implemented to avoid, mitigate and manage impacts on listed threatened species and ecological communities.</p> <p>Committed language (i.e. 'will') rather than non-committal language (i.e. 'may', 'where possible', 'if required', etc.) must be used.</p> <p>Note: Appropriate measures may be detailed on the SPRAT Database for relevant listed threatened species and ecological communities. All proposed measures must consider the 'S.M.A.R.T' principle (see below).</p> <ul style="list-style-type: none"> • Statutory requirements: where relevant, briefly discuss how the proponent has had regard to relevant approved conservation advice/s. <p>The MNES section must demonstrate, with supporting evidence, that the action will not be inconsistent with Australia's obligations under:</p> <ol style="list-style-type: none"> 1. the Biodiversity Convention 2. the Convention on Conservation of Nature in the South Pacific (Apia Convention) 3. the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and 4. a recovery plan or threat abatement plan. <ul style="list-style-type: none"> • Significant impact assessment: after consideration of proposed avoidance, mitigation and management measures, provide an assessment of the likelihood of significant impacts on relevant listed threatened species and ecological communities. The significant impact assessment must consider the Significant impact guidelines 1.1. <p>The MNES section must provide a clear and definitive conclusion of significant impacts on relevant listed threatened species and ecological communities to align with the EPBC Act Environmental Offsets Policy (2012).</p>	
<p>6 Listed migratory species (sections 20 and 20A)</p>	
<p>The MNES section must address, at a minimum, impacts on the following listed migratory species for the action:</p> <ul style="list-style-type: none"> • Fork-tailed Swift (<i>Apus pacificus</i>) • Oriental Cuckoo, Horsfield's Cuckoo (<i>Cuculus optatus</i>) • Black-faced Monarch (<i>Monarcha melanopsis</i>) • Yellow Wagtail (<i>Motacilla flava</i>) • Satin Flycatcher (<i>Myiagra cyanoleuca</i>) 	<p>Section 21.12.4.10</p>



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<ul style="list-style-type: none"> • Common Sandpiper (<i>Actitis hypoleucos</i>) • Sharp-tailed Sandpiper (<i>Calidris acuminata</i>) • Curlew Sandpiper (<i>Calidris ferruginea</i>) • Pectoral Sandpiper (<i>Calidris melanotos</i>) • Latham’s Snipe (<i>Gallinago hardwickii</i>) • Osprey (<i>Pandion haliaetus</i>) • Common Greenshank (<i>Tringa nebularia</i>). <p>Note: The list above may not be a complete list of listed migratory species that will or are likely be impacted by the action. It is the proponent’s responsibility to ensure that any listed migratory species at the time of the controlled action decision, which will or are likely to be impacted by the action, are assessed for the Minister’s consideration. Any listing events that occur after the controlled action decision do not affect the assessment and approval process.</p> <p>Similarly to the ‘Listed threatened species and communities’ section above, the structure of the assessment of listed migratory species in the MNES section must be the following:</p> <ol style="list-style-type: none"> a) Description b) Desktop analysis c) Survey effort d) Survey outcomes e) Habitat assessment f) Impact assessment g) Avoidance, mitigation and management h) Statutory requirements <p>The MNES section must demonstrate, with supporting evidence, that the action will not be inconsistent with Australia’s obligations under:</p> <ol style="list-style-type: none"> 1. the Bonn Convention; 2. CAMBA 3. JAMBA, and 4. an international agreement approved under subsection 209(4) of the EPBC Act. <ol style="list-style-type: none"> i) Significant impact assessment. 	
7 A water resource, in relation to coal seam gas development and large coal mining development	
<p>General</p> <p>The National Partnership Agreement on Coal Seam Gas and Large Coal Mining Development, to which Queensland is a signatory, specifies that all coal seam gas and large coal mining proposals that are likely to have a significant impact on water resources are to be referred to the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) for advice.</p> <p>To assist the IESC’s consideration of the action’s potential impacts on water resources, the MNES section must include sufficient baseline (i.e. pre-action impact) monitoring to inform and support a robust assessment of potential impacts on water resources, including for:</p> <ul style="list-style-type: none"> • groundwater quality and levels, and • surface water quality and flow regimes. 	<p>Sections 21.9.2, 21.11.2</p>
<p>The complete monitoring data must be attached to the draft EIS with clear and concise summaries presented in the MNES section.</p>	<p>Section 21.9.2, 21.11.1, Appendix E,</p>



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	Appendix F, Appendix H
The MNES section must provide robust scientific information and supporting evidence for every assertion, assumption and/or conclusion made in the assessment of potential impacts, or lack of impacts, on water resources.	Section 21.9.6, 21.11.5
The assessment of water resources must consider and apply the guidance provided in the IESC Explanatory Notes available on the IESC website. Further, DAWE recommends the review of recent IESC advices to identify key target areas for the assessment, recommendations to implement appropriate assessment approaches, and/or useful research to inform survey methodologies (e.g. groundwater-dependent ecosystems).	Noted
DAWE recommends different experts liaise with each other in the preparation of the MNES section (e.g. aquatic ecologists and modellers) to ensure sharing of data and consistency in the assessment of potential impacts on water resources (e.g. groundwater drawdown on groundwater-dependent ecosystems).	Noted
The water resources assessment must consider climate change in modelling scenarios and in the water balance (e.g. through the use of the Climate Futures Tool), particularly if the action will require external water sources and/or has a long lifetime.	Section 21.9.6, 21.11.4, Appendix E, Appendix F, Appendix W, Appendix X, Appendix Y, Appendix Z
Broadly, the assessment of potential impacts on water resources must include the following:	-
Description: at a minimum, a description of both groundwater and surface water resources at the project site and in the region, as well as any third party users of these resources (e.g. groundwater-dependent ecosystems, landholders, other mining operations, etc.).	Section 21.9.1, 21.11.2, 21.11.3
Impact assessment: describe and assess all impacts (direct, indirect and cumulative) to water resources and third party users that may be impacted by the action. The impact assessment must include consideration of the requirements in the 'Relevant Impacts' section below.	Section 21.9.6, 21.11.4
<p>Avoidance, mitigation, management and monitoring: describe all relevant measures proposed to avoid, mitigate, manage and monitor potential impacts on water resources as required in the 'Avoidance, Mitigation and Management' section below.</p> <p>The MNES section must not just state proposed management plans and/or broad objectives to describe avoidance, mitigation and management measures. The MNES section must include detailed measures that will be implemented to avoid, mitigate and manage impacts on water resources. Committed language (i.e. 'will') rather than non-committal language (i.e. 'may', 'where possible', 'if required', etc.) must be used.</p> <p>All proposed measures must consider the 'S.M.A.R.T' principle and, where relevant, the conditions that may be imposed by the Queensland Government in a draft Environmental Authority.</p>	Section 21.9.7, 21.11.5
IESC checklist: the MNES section must address the information requirements contained in the Information Guidelines for the IESC and provide a cross-reference table, as an attachment to the draft EIS, to identify where each component of the guidelines has been addressed.	Attachment 3
Significant impact assessment: after consideration of avoidance, mitigation and management measures, provide an assessment of the likelihood of significant impacts on	Section 21.9.9



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<p>water resources. The significant impact assessment must consider the Significant impact guidelines 1.3.</p> <p>The MNES section must provide a clear and definitive conclusion of significant impacts on water resources to align with the EPBC Act Environmental Offsets Policy (2012).</p>	
<p>Groundwater</p> <p>DAWE recommends the following approach to the groundwater assessment:</p> <ol style="list-style-type: none"> 1. consider and apply the guidance in the IESC Explanatory Notes. 2. undertake an appropriate risk analysis. 3. construct the groundwater models, considering the type of uncertainty analysis that is appropriate given the action's risk profile. 4. run the groundwater models. 5. review the risk analysis and uncertainty analysis in light of the model predictions. 6. revise and re-run the groundwater models (if required). 	Noted
<p>The groundwater assessment must include conceptual and numerical models. Models must be constructed at a suitable scale to be able to assess both site-specific and regional cumulative impacts.</p>	Section 21.11.4
<p>DAWE recommends that models are peer-reviewed by an independent expert, considering the Australian Groundwater Modelling Guidelines and the IESC Explanatory Notes. Recommendations of the peer review should be incorporated into the models. DAWE recommends peer reviewers are engaged early and throughout the groundwater assessment (see above) to ensure it is an iterative process.</p>	Attachment 6
<p>If relevant, the proponent should consider the number and location of groundwater monitoring bores (both within and adjacent to the project site) to ensure there is adequate spatial coverage in all aquifers.</p> <ul style="list-style-type: none"> • nested or paired bores must be used to characterise inter-aquifer connectivity (where needed). <p>new bores must be located where they are unlikely to be removed for future mining activities.</p>	Section 21.11.4, 21.11.5
<p>Site-specific data for all relevant hydraulic properties for each groundwater unit must be available or able to be captured from the proposed monitoring network for input into the groundwater models.</p>	Section 21.11.2, Appendix E
<p>Groundwater-dependent ecosystems (GDEs)</p> <p>To determine the presence of GDEs in and adjacent to the project site, the GDE assessment must comprise both:</p> <ul style="list-style-type: none"> • desktop assessments (e.g. Landsat, Water Observations from Space, remote sensing, etc.) used to identify potential GDEs for field assessment; and • field assessments (e.g. soil moisture testing, leaf moisture testing, root depth drilling, etc.) to confirm the outcomes of the desktop assessments. <p>The desktop and field assessments must consider the Australian GDE Toolbox and the IESC GDE Explanatory Note, and should be informed by the review of recent IESC advices. If GDE field verification surveys are not undertaken, the Department is likely to apply a precautionary approach to the presence of GDEs and the assessment of potential impacts.</p>	Section 21.14.2, 21.15.1
<p>The GDE assessment must be informed by information derived from multiple stygofauna seasonal surveys, undertaken using techniques specified in relevant Queensland guidelines.</p>	Section 21.14.2, 21.15.1
<p>Surface water</p>	Section 21.7.1, 21.9.3



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<p>The MNES section must include a water balance in the assessment which clearly demonstrates how much water will be required for the action, and where water will be sourced (where there is a deficit) and/or how water will be disposed (where there is a surplus). The water balance must consider rainfall variability and may need to consider climate change (see above).</p>	
<p>The MNES section must quantify current surface water flow regimes in respective catchments (both within and adjacent to the project site) to ensure there is sufficient baseline information to assess how the location, volume, velocity and timing of flows may change as a result of the action. Changes to the duration of low-flow and no-flow periods must be assessed and subsequent potential ecological impacts must also be assessed.</p>	Section 21.8.2
<p>The MNES section must assess the potential impacts of any proposed creek diversions, including how existing flows and volumes will be maintained as a result of the diversion.</p>	N/A
<p>Note: Where ephemeral watercourses are present, DAWE recommends considering the use of remote sensing techniques would be appropriate as gauging stations may be impractical.</p>	Section 21.9.2, Appendix F
<p>The MNES section must consider using more recent water quality guidelines (i.e. ANZG [2018]) to inform water quality objectives for relevant parameters (e.g. metals/metalloids).</p>	Section 21.9.4
<p>The estimates of discharge quality must be discussed in the MNES section (e.g. as stated in a draft Environmental Authority) and an assessment of potential ecological impacts must be provided.</p>	Section 21.9.3, 21.9.6
<p>8 Relevant impacts</p>	
<p>All relevant impacts of the action must be assessed in accordance with relevant DAWE policies and guidelines, and information provided in the SPRAT Database.</p> <p>The MNES section must include a description of all of the relevant impacts of the action (direct, indirect, cumulative and facilitated). Relevant impacts are the impacts that the action will have, or is likely to have, on MNES. Impacts during the construction, operational and the decommissioning stages of the action must be addressed, and the following information provided:</p> <ul style="list-style-type: none"> • a detailed assessment of the nature and extent of the likely short-term and long-term relevant impacts • a statement, with supporting evidence, whether any relevant impacts are likely to be unknown, unpredictable or irreversible, and • any technical data and other information used or needed to make a detailed assessment of the relevant impacts. <p>The MNES section must identify and address cumulative impacts, where potential impacts of the action are in addition to existing impacts of other activities (including known potential future expansions or developments by the proponent and other proponents in the region and vicinity).</p> <p>The MNES section must also address the potential cumulative impact of the project on ecosystem resilience. The cumulative effects of climate change impacts on the environment must also be considered in the assessment of ecosystem resilience. Where relevant to the potential impact, a risk assessment must be conducted and documented.</p> <p>The MNES section must also provide a detailed assessment of any likely impact that the action may facilitate on (at the local, regional, state, national and international scale):</p> <ul style="list-style-type: none"> • listed threatened species and ecological communities • listed migratory species, and/or • a water resource, in relation to coal seam gas development and large coal mining development. 	<p>Section 21.9.6, 91.10.7, 21.11.4, 21.12.3, 21.13.3, 21.14.5, 21.15.3</p>



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9 Avoidance, mitigation and management measures	
<p>The MNES section must include detailed descriptions of measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of all stages of the action on MNES. The proposed measures must be based on best available practices, appropriate standards and supported by scientific evidence. The MNES section must include:</p> <ul style="list-style-type: none"> • proposed measures to be undertaken to avoid and mitigate the relevant impacts of the proposed action on MNES, including those required by other Commonwealth, State and local government approvals • an assessment of the predicted effectiveness of the proposed measures • any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advices, and a discussion on whether the proposed measures are not inconsistent with relevant recovery plans and threat abatement plans • details of ongoing management, including monitoring activities to support an adaptive management approach and determine the effectiveness of the proposed measures • details on measures, if any, proposed to be undertaken by State and local government, including the name of the agency responsible for approving each measure • information on the timing, frequency and duration of the measures to be implemented, and • the name of the agency responsible for endorsing or approving each mitigation measure or monitoring activities. <p>The MNES section must not just state proposed management plans and/or broad objectives to describe avoidance, mitigation and management measures. The MNES section must include detailed measures that will be implemented to avoid, mitigate and manage impacts on listed threatened species and ecological communities.</p> <p>Committed language (i.e. ‘will’) rather than non-committal language (i.e. ‘may’, ‘where possible’, ‘if required’, etc.) must be used.</p> <p>The SPRAT Database may provide some relevant mitigation measures for listed threatened species and ecological communities. All proposed measures for MNES must consider the ‘S.M.A.R.T’ principle:</p> <ul style="list-style-type: none"> • S – Specific (what and how) • M – Measurable (baseline information, number/value, auditable) • A – Achievable (timeframe, money, personnel) • R – Relevant (conservation advices, recovery plans, threat abatement plans) • T – Time-bound (specific timeframe to complete) 	<p>Section 21.9.7, 21.10.8, 21.11.5, 21.12.4, 21.13.4, 21.14.6, 21.15.4,</p>
10 Environmental offsets	
<p>The MNES section must include an assessment of the likelihood of residual significant impacts occurring on listed threatened species and communities, listed migratory species, and water resources after avoidance, mitigation and management measures have been applied. If it is determined that a residual significant impact is likely, include a draft Offset Management Strategy that provides, at a minimum:</p> <ul style="list-style-type: none"> • details of the environmental offset/s (in hectares) for residual significant impacts of the proposed action on relevant MNES, and/or their habitat • details of how the environmental offset/s meets the requirements of the EPBC Act Environmental Offsets Policy (2012) (EPBC Act Offset Policy), including the Offsets Assessments Guide, available at: www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy • details of a strategy for the staging of environmental offset/s for each project stage (if proposed) 	<p>Section 21.19</p>



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<ul style="list-style-type: none"> • details of appropriate offset area/s (including a map) to compensate for the residual significant impact on relevant MNES, and/or their habitat • the methodology, with justification and supporting evidence, used to inform the inputs of the Offsets Assessment Guide in relation to the project site for each relevant MNES, including: <ul style="list-style-type: none"> ○ quantum of impact – area (in hectares) ○ quantum of impact – quality (e.g. using the Queensland Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy [Version 1.2, April 2017], or subsequent revision) • the methodology, with justification and supporting evidence, used to inform the inputs of the Offsets Assessment Guide in relation to each potential offset area/s for each relevant MNES, including: <ul style="list-style-type: none"> ○ time over which loss is averted (max. 20 years) ○ time until ecological benefit ○ risk of loss (%) without offset ○ risk of loss (%) with offset ○ confidence in result (%) • evidence that the relevant MNES, and/or their habitat, can be present in the potential offset area/s • information about how the proposed offset/s area provides connectivity with other relevant habitats and biodiversity corridors, and • details of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide protection for the offset area/s against development incompatible with conservation. <p>Where offset area/s have been nominated, include a draft Offset Area Management Plan (OAMP) which includes information to demonstrate how the environmental offset/s compensate for residual significant impacts of the project on relevant MNES, and/or their habitat, in accordance with the principles of the Offsets Policy and all requirements of the Offsets Assessment Guide. The draft OAMP must include:</p> <ul style="list-style-type: none"> • a description of the offset area/s, including location, size, condition, environmental values present and surrounding land uses • baseline data and other supporting evidence, including the ecological field data, that documents the presence of the relevant MNES, and the quality of their habitat within the offset area/s • an assessment of the site habitat quality for the offset area/s using an appropriate methodology, with justification and supporting evidence, (e.g. using the Queensland Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy [Version 1.2, April 2017], or subsequent revision) • details of how the offset area/s will provide connectivity with other habitats and biodiversity corridors and/or will contribute to a larger strategic offset for the relevant listed threatened species and communities • maps and shapefiles to clearly define the location and boundaries of the offset area/s, accompanied by the offset attributes (e.g. physical address of the offset area/s, coordinates of the boundary points in decimal degrees, the listed threatened species and communities that the environmental offset/s compensates for, and the size of the environmental offset/s in hectares) • specific offset completion criteria derived from the site habitat quality to demonstrate the improvement in the quality of habitat in the offset area/s over a 20-year period • details of the management actions, and timeframes for implementation, to be carried out to meet the offset completion criteria • interim milestones that set targets at 5-yearly intervals for progress towards achieving the offset completion criteria • details of the nature, timing and frequency of monitoring to inform progress against achieving the 5-yearly interim milestones (the frequency of monitoring must be 	



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<p>sufficient to track progress towards each set of milestones, and sufficient to determine whether the offset area/s are likely to achieve those milestones in adequate time to implement all necessary corrective actions)</p> <ul style="list-style-type: none"> • proposed timing for the submission of monitoring reports which provide evidence demonstrating whether the interim milestones have been achieved • timing for the implementation of corrective actions if monitoring activities indicate the interim milestones have not been achieved • risk analysis and a risk management and mitigation strategy for all risks to the successful implementation of the OAMP and timely achievement of the offset completion criteria, including a rating of all initial and post- mitigation residual risks in accordance with a risk assessment matrix • if proposed for listed threatened species and communities, evidence of how the management actions and corrective actions take into account relevant approved conservation advices and are consistent with relevant recovery plans and threat abatement plans; and • details of the legal mechanism for legally securing the proposed offset area/s, such that legal security remains in force over the offset area/s for at least 20 years to provide enduring protection for the offset area/s against development incompatible with conservation. <p>The draft OAMP must be prepared by a suitably qualified person and in accordance with DAWE’s Environmental Management Plan Guidelines (2014), available at: www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines.</p> <p>The draft OAMP must provide evidence, derived from field surveys and vegetation assessments, to demonstrate that an EPBC Act protected matter (e.g. listed threatened species or ecological community) is or can be present in the proposed offset area/s. Field surveys must be undertaken in accordance with Commonwealth guidelines, State guidelines and/or best practice survey methodologies.</p> <p>Note: The Department expects that an EPBC Act protected matter is present in the proposed offset site/s if it is present in the project site to align with the EPBC Act Offsets Policy.</p> <p>Supporting evidence must be included in the draft OAMP to justify how proposed management action/s are additional to the existing requirements of the landholder in managing their land (e.g. weed and pest management requirements under the Queensland Biosecurity Act 1994, existing grazing regimes, etc.) as required by the EPBC Act Offsets Policy.</p> <p>The draft OAMP must include robust scientific evidence (e.g. published research, pilot studies, previously successful projects/programs, etc.) to demonstrate the success of proposed measures to create, revegetate, regenerate and/or improve habitat (e.g. tree planting, nest boxes, artificial hollows, etc.) in the proposed offset area/s for a listed threatened species or ecological community, or listed migratory species.</p> <p>Where the proposed offset area/s supports an environmental offset for multiple MNES, proposed management action/s for one protected matter must not be detrimental (i.e. have an impact) to other protected matters.</p> <p>Where an offset is proposed, with a completed Offsets Assessment Guide calculation, all inputs must be supported by robust scientific evidence and/or supporting evidence (e.g. historical grazing regimes, satellite imagery, statements from landholders, etc.).</p> <p>Note: It is DAWE’s expectation that the agreed inputs into the Offsets Assessment Guide are specified in the conditions of approval (if the action is approved, subject to conditions, under the EPBC Act).</p>	
<p>11 Other approvals and conditions</p>	



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-	<p>The MNES section must include information on any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action. This must include:</p> <ol style="list-style-type: none"> a) details of any local or State Government planning scheme, or plan or policy under any local or State Government planning system that deals with the proposed action, including: <ul style="list-style-type: none"> • what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy; and • how the scheme provides for the prevention, minimisation and management of any relevant impacts; b) a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action c) a statement identifying any additional approval that is required, and d) a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action. 	Section 21.1.6
12 Environmental Record of Person(s) Proposing to take the Action		
-	<p>The information provided must include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:</p> <ol style="list-style-type: none"> a) the person proposing to take the action; and b) for an action for which a person has applied for a permit, the person making the application. <p>If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework must also be included.</p>	Section 21.1.2
13 Economic and Social Matters		
-	<p>The economic and social impacts of the action, both positive and negative, must be analysed in the MNES section. Matters of interest may include:</p> <ul style="list-style-type: none"> • details of any public consultation activities undertaken, including any consultation with Indigenous stakeholders, and their outcomes 	Section 21.16.1
-	<ul style="list-style-type: none"> • projected economic costs and benefits of the action, including the basis for their estimation through cost/benefit analysis or similar studies, and • employment opportunities expected to be generated by the action (including construction and operational phases). <p>Economic and social impacts must be considered at the local, regional and national levels. Details of the relevant cost and benefits of alternative options to the action, as identified above, must also be included.</p>	Section 21.16.2
14 Information Sources Provided in the MNES Section		
-	<p>For information given in the MNES section, the MNES section must state:</p> <ol style="list-style-type: none"> a) the source of the information b) how recent the information is c) how the reliability of the information was tested, and d) what uncertainties (if any) are in the information. 	Noted



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Attachment 1 The objects and principles of the EPBC Act sections 3 and 3a Objects of the Act		
-	<p>(a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance</p> <p>(b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources</p> <p>(c) to promote the conservation of biodiversity</p> <p>(d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples</p> <p>(e) to assist in the co-operative implementation of Australia's international environmental responsibilities</p> <p>(f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity, and</p> <p>(g) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.</p>	Section 21.8.1
3A Principles of Ecologically Sustainable Development		
-	<p>The following principles are principles of ecologically sustainable development:</p> <p>(a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations</p> <p>(b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation</p> <p>(c) the principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations</p> <p>(d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making</p> <p>(e) improved valuation, pricing and incentive mechanisms should be promoted.</p>	Section 21.17
Attachment 2 Matters that must be addressed in a public environment report (PER) or EIS (Schedule 4 of the EPBC Regulations 2000)		
1.01	<p>General information</p> <p>The background of the action including:</p>	-
(a)	the title of the action	Section 21.1.1
(b)	the full name and postal address of the designated Proponent	Section 21.1.2
(c)	a clear outline of the objective of the action	Section 21.1.3
(d)	the location of the action	Section 21.1.4
(e)	the background to the development of the action	Section 21.1.5
(f)	how the action relates to any other actions (of which the Proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action	Section 21.1.5



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(g)	the current status of the action, and	Section 21.1.6
(h)	the consequences of not proceeding with the action.	Section 21.8.7
2.01	Description A description of the action, including:	-
(a)	all the components of the action	Section 21.2
(b)	the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts	Section 21.2.1, 21.2.2, 21.2.3
(c)	how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts	Section 21.2
(d)	relevant impacts of the action	Section 21.9.6, 21.10.7, 21.11.4, 21.12.3, 21.13.3, 21.14.5, 21.15.3
(e)	proposed safeguards and mitigation measures to deal with relevant impacts of the action	Section 21.9.7, 21.10.8, 21.11.5, 21.12.4, 21.13.4, 21.14.6, 21.15.4
(f)	any other requirements for approval or conditions that apply, or that the Proponent reasonably believes are likely to apply, to the proposed action	Section 21.1.6.4
(g)	to the extent reasonably practicable, any feasible alternatives to the action, including: (i) if relevant, the alternative of taking no action; (ii) a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action; and (iii) sufficient detail to make clear why any alternative is preferred to another;	Section 21.8
(h)	any consultation about the action, including: (i) any consultation that has already taken place; (ii) proposed consultation about relevant impacts of the action; and (iii) if there has been consultation about the proposed action — any documented response to, or result of, the consultation; and (i) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.	Section 21.16.1
3.01	Relevant impacts Information given under paragraph 2.01(d) must include:	-
(a)	a description of the relevant impacts of the action	Section 21.9.6, 21.10.7, 21.11.4, 21.12.3, 21.13.3, 21.14.5, 21.15.3
(b)	a detailed assessment of the nature and extent of the likely short term and long term relevant impacts	Section 21.9.6, 21.10.7, 21.11.4, 21.12.3, 21.13.3, 21.14.5, 21.15.3



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(c)	a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible	Section 21.9.6, 21.10.7, 21.11.4, 21.12.3, 21.13.3, 21.14.5, 21.15.3
(d)	analysis of the significance of the relevant impacts, and	Section 21.9.9, 21.11.17, 21.12.4, 21.13.4
(e)	any technical data and other information used or needed to make a detailed assessment of the relevant impacts.	Appendices A to Z
4.01	Proposed safeguards and mitigation measures Information given under paragraph 2.01(e) must include:	-
(a)	a description, and an assessment of the expected or predicted effectiveness of, the mitigation measures	Section 21.9.7, 21.10.8, 21.11.5, 21.12.4, 21.13.4, 21.14.6, 21.15.4
(b)	any statutory or policy basis for the mitigation measures	Section 21.12.4,
(c)	the cost of the mitigation measures	Appendix R (Section 8)
(d)	an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring activities for the relevant impacts of the action, including any provisions for independent environmental auditing	Section 21.9.9, 21.11.5, 21.12.4, 21.13.4, 21.14.6, 21.15.4
(e)	the name of the agency responsible for endorsing or approving each mitigation measure or monitoring activities, and	Section 21.1.6.4
(f)	a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action, including mitigation measures proposed to be taken by State governments, local governments or the Proponent.	Section 21.9.9, 21.11.5, 21.12.4, 21.13.4, 21.14.6, 21.15.4, 22
5.01	Other Approvals and Conditions Information given under paragraph 2.01(f) must include:	-
(a)	details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including: (i) what environmental assessment of the proposed action has been, or is being carried out under the scheme, plan or policy, and (ii) how the scheme provides for the prevention, minimisation and management of any relevant impacts.	Section 21.1.6
(b)	a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action	Section 21.1.6.4
(c)	a statement identifying any additional approval that is required, and	Section 21.1.6.4
(d)	a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.	Section 21.9.9, 21.11.5, 21.12.4, 21.13.4, 21.14.6, 21.15.4



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6.01	<p>Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:</p> <p>(a) the person proposing to take the action, and</p> <p>(b) for an action for which a person has applied for a permit, the person making the application.</p>	Section 21.1.2
6.02	<p>If the person proposing to take the action is a corporation — details of the corporation’s environmental policy and planning framework.</p>	Section 21.1.2
7.01	<p>Information sources</p> <p>For information given the PER/EIS must state:</p> <p>(a) the source of the information, and</p> <p>(b) how recent the information is, and</p> <p>(c) how the reliability of the information was tested, and</p> <p>(d) what uncertainties (if any) are in the information.</p>	Section 24, Attachments 5 – 8