Attachment A Additional information requirements – cross reference checklist

RFI reference	Information required	Cross-reference
1	**DESCRIPTION OF THE ACTION**	
1.1	Include updated information if any changes have been made to the project since the referral documentation was submitted	PD - section 2.0
2	**HABITAT ASSESSMENT**	
2.1	**Species general information**	
2.1.1	Include an assessment of the adequacy of any surveys undertaken (including survey effort and timing). In particular, the extent to which these surveys were appropriate for the listed species or community and undertaken in accordance with relevant departmental survey guidelines. The referral documentation states that 'there would be potential risk to a number of MNES and further assessment is required'. Provide clarification in the PD if further assessments and/or survey effort have been undertaken for MNES.	PD - section 3.3.1 Attachment C – Section 4.3.3
2.1.2	Habitat clearance is listed in the referral as the primary impact mechanism to listed threatened species and communities. The department considers the proposed action has the potential of further impacts to listed species and communities that may include habitat degradation, reduction in habitat connectivity, noise, dust and light, changes to hydrological regimes, impacts to water quality and chemical risk. Provide further discussion regarding mitigation and avoidance of other potential impacts to MNES, including but not limited to, the above.	PD - section 3.3.1 Attachment C – Sections 7.1.1, 7.1.2 & 8.3.1
2.1.3	Habitat, particularly Threatened Ecological Communities (TEC), have been characterised within the project site. Clarification is required regarding the extent of the habitat/TEC beyond the project boundaries. For example, if an area of TEC within the project boundary continues beyond the boundary (part of a larger patch), any impacts to that TEC may increase in significance.	PD - section 3.3.1 Attachment C – Section 6.6 & 8.3.2
2.2	**Species specific information**	
Greater Glider (Petauroides volans) – Vulnerable		
2.2.1	The Greater Glider habitat mapping rules only includes remnant woodland. Greater Glider habitat also occurs in non-remnant woodland with sufficient hollows. This may require a re-assessment of total Greater Glider within the project area.	PD - section 3.3.2 Attachment C – Appendix D
2.2.2	Pre-clearance survey efforts should include an analysis of tree hollow size and density suitable for use by the Greater Glider (e.g. denning) in the identified areas of Eucalypt forest and woodland containing hollow-bearing trees within and adjacent to the project site.	PD - section 3.3.2 Attachment B – section 4.1.3
Koala (Phascolarctos cinereus) (combined populations of Qld, NSW and the ACT) – Vulnerable		
2.2.3	Include 'shelter trees' in the habitat mapping rules for the Koala.	PD - section 3.3.2 Attachment C – Appendix D
Ooline (Cadellia pentastylis) – Vulnerable		
2.2.4	Referral documentation states that Ooline records pre-dating 1980 are determined 'historical'. Given the longevity of the Ooline, provide clarification regarding the investigation that has occurred into historical records.	PD - section 3.3.2 Attachment C – Section 6.7
Squatter Pigeon (southern) (Geophaps scripta scripta) – Vulnerable		
2.2.5	Habitat mapping rules for the Squatter Pigeon do not include 'highly modified or degraded habitats' as dispersal habitat.	PD - section 3.3.2 Attachment C – Appendix D
South-eastern long-eared Bat (Nyctophilus corbeni) – Vulnerable		
2.2.6	Referral documentation states 4 ha of roosting and foraging habitat critical for the South-eastern long-eared bat will be directly impacted via clearing, however uncertainty exists as to the density of the population due to minimal survey efforts undertaken.	PD - section 3.3.2 Attachment C – Appendix F
Ornamental Snake (Denisonia maculata) – Vulnerable		
2.2.7	Habitat mapping rules for the Ornamental Snake should be expanded to include; floodplains, undulating clay pans and along the margins of swamps, lakes and watercourses. It also occurs on adjoining areas of elevated ground and has been recorded in woodlands and open	PD - section 3.3.2 Attachment C – Appendix D

	woodlands of coolabah, poplar box, and brigalow, and in fringing vegetation along watercourses. Is known to prefer woodlands and open forests associated with moist areas, particularly Gilgais and depressions, but also lake margins and wetlands.	
Adorned Delma (Delma torquata) – Vulnerable		
2.2.8	Suitable habitat can also occur between grazed or cropped areas, along road reserves and travelling stock routes. Maintaining connectivity between habitat patches is important. Habitat description of 'Eucalypt dominated woodland and open forests and exposed rocky areas' are not confined by reference to Remnant or HVR qualifiers.	PD - section 3.3.2 Attachment C – Appendix D
2.3	**Constraints Protocol**	
2.3.1	Pre-disturbance surveys must be supervised by a suitably qualified person and undertaken in accordance with the department's survey guidelines in effect at the time of the survey or other equivalent survey methodology. Clarification is required regarding the role and pre-clearance survey procedures undertaken by the field scout.	PD – section 4.3 Attachment B - section 4.1.3 & 4.1.6
2.3.2	The southern portion of the project area currently contains both High and Moderate constraints areas and is mapped as suitable habitat for several listed threatened species (Figure 1 – Towrie MNES constraints). This area has been deemed uncertain by the proponent as constraints categories have not been field validated and may be subject to change. Constraints categories are required to be well defined for assessment.	PD – section 4.3 Attachment B - section 4.2
2.3.3	Inconsistencies in the mapping of vegetation communities occur within the project area between desktop RE mapping (figure 6) and assessed RE extent (figure 7) in the MNES – Ecology Assessment Report. Provide clarification of habitat descriptions and vegetation communities.	PD – section 4.3 Attachment C – section 5.2
2.3.4	Both of the High and Moderate Constraints areas allow for 'Linear Infrastructure', and the Moderate Constraints area additionally allows for 'all petroleum activities'. Both of these constraints areas contain high quality habitat for MNES, including potential fauna corridors for movement across the project site i.e. riparian vegetation along waterways. Clarification and discussion are required regarding avoidance and mitigation strategies of the potential impacts of habitat fragmentation under the constraints protocol.	PD – section 4.3 Attachment B – section 2 & 3 Attachment F and H
2.3.5	The Low Constraints category is described as areas of 'non-remnant vegetation without potential to contain MNES and its habitat'. This definition may exclude MNES habitat i.e. squatter pigeon dispersal habitat, Gilgai, isolated Koala food/shelter trees and small patches of habitat that may be used for movement of fauna across the landscape. The definition of the Low Constraints category needs to include the potential habitat for MNES and clarification is required of the pre-clearance survey effort to be undertaken before any activities occur within the Low Constraints area.	PD – section 4.3 Attachment B - section 3.3.4 & 4.1.3 Attachment C - Appendix D
2.3.6	Review the habitat mapping rules and specific survey requirements, informing the Constraints Protocol, to ensure that they contain complete habitat descriptions and survey requirements for each MNES, as outlined in relevant documents, including, but not limited to, SPRAT, conservation advice and recovery plans.	PD – section 4.3 Attachment C – section 4 & Appendix D
2.3.7	As vegetation communities/habitat are clarified and further defined within the project site, update all reports, including the Constraints Protocol, as appropriate.	PD – section 4.3 Attachment B – section 4.2
2.4	**A water resource in relation to coal seam gas development and large coal mining development**	
Groundwater		
2.4.1	The groundwater model uses median hydraulic parameter values for the hydrogeological units in this area. Results from drilling may indicate that different hydraulic parameters should be used which would likely change the predicted drawdown ranges and extents. The department notes further that OGIA also provides 95th percentile predictions, for which impacts will be greater. The calibrated hydraulic parameters used in the OGIA groundwater model should be validated prior to the commencement of the commercial extraction of gas.	PD – section 5.3.1 Attachment D – sections 8.2.1, 9.2.1
2.4.2	Should local-scale data indicate that hydraulic parameters are outside the calibrated values of the OGIA model, provide information outlining how the new local-scale data will affect model predictions	PD – section 5.3.1 Attachment D – sections 7.4, 8.2.1
Groundwater dependent ecosystems		
2.4.3	Given the presence of potential GDEs both within and adjacent to the proposed project area, although not required by the JIF, as a precautionary measure, it may be prudent to assess the groundwater dependency of riparian vegetation, including Gilgai and Brigalow on	PD – section 5.3.2

	alluvial sediments using direct techniques (e.g. stable isotopes, leaf and soil water potential). Based on the results of a GDE assessment, an ecohydrological conceptual model should be developed, which outlines the potential hydrogeological connectivity and impact pathways between drawdown within the Rewan Group, alluvium and potential GDEs. The ecohydrological model should also include spring complexes, including those identified 10 to 25km to the west of the project area, associated with the Clematis Group and Precipice Sandstone.	Attachment D – section 7.9 & 9.2.3
2.4.4	Should these potential GDEs be confirmed as groundwater dependent, the ecohydrological conceptual model could be used to inform the locations and screening depths of additional monitoring bores which should be located near these potential GDEs. The Ecohydrological conceptual model should inform a GDE management plan, which includes the mitigation and monitoring measures used to protect the ecological values of these GDEs.	PD – section 5.3.2 Attachment D – section 10.2.4
2.4.5	GDE assessment should consider relevant IESC guidance. The desktop and field assessments must consider the Australian GDE toolbox part 1 and part 2 (2011) and the IESC GDE explanatory note (2019).	PD – section 5.3.2 Attachment D – section 10.2.4
Modified wetlands		
2.4.6	Modified wetlands have been identified across the project site. A large wetland located adjacent to the public reserve in the northeast portion of the project site, is highlighted as an important habitat. This modified wetland is a confluence of several watercourses, including Station Creek. Proposed tracks, gas and water flow lines cross these water courses (Figure 6 – Towrie indicative development – first phase). Although these watercourses are ephemeral, they form part of the catchment for the wetland. Should these watercourses be modified or disturbed, the timing, duration, magnitude, and frequency of flows into the wetland may be materially changed. Narrow riparian vegetation associated with these watercourses may provide a corridor for movement of fauna to higher quality habitat. Clarification is required regarding the design of this infrastructure, including how impacts to flow and riparian vegetation is avoided or mitigated.	PD – section 5.3.3 Attachment D – section 10.3
Surface water		
2.4.7	Flood modelling maps for a flood extent for 1% Annual Exceedance Probability (AEP) indicates that for a 1 in 100 year flooding event. Flooding may occur within the Brown River, as well as Arcadia Creek, Moolayember Creek and Station Creek. According to Figure 6 (Towrie indicative development – first phase) at least one proposed well lease and several access roads fall within this flood prediction area. Clarification is required regarding how potential impacts to project infrastructure, including well pads and storage tanks, caused by a 1% AEP flood event, will be mitigated and managed.	PD – section 5.3.4 Attachment D – sections 10.1 & 10.3
Produced water management		
2.4.8	The referral documentation notes that site water balances have been undertaken to ensure water management facilities provide adequate storage and treatment capacity. Water balances need to be provided to the department to enable further assessment.	PD – sections 2.3, 5.3.5 Attachment D – section 3.3.1.2
Stygofauna		
2.4.9	It is stated within the referral guidelines that it is unlikely to be Stygofauna present within the targeted coal seams. However, Stygofauna may be present within the alluvium. Sampling of Stygofauna within the alluvium should be undertaken in accordance with the Department of Science, Information Technology and Innovation (DSITI) guidelines (2015). Stygofauna assessment guidance is available through the IESC guidelines explanatory note Assessing groundwater-dependent ecosystems (2019).	PD – section 5.3.6 Attachment D – section 9.2.4
Cumulative impacts		
2.4.10	The proposed action is part of the broader development of CSG resources by the proponent and other developers. The department notes additional individual tenures within the Surat basin from other developers are anticipated in future, including potential future developments by Santos, for example, ATP1191 (PLA1062) located immediately north of Towrie (Attachment A). The department notes cumulative impacts are not discussed in the referral documentation and therefore, the extent of the impacts on water resources are unknown. The department notes the uncertainty assessment derived from the OGIA modelling appears not to detail the cumulative impact contributions to the maximum predicted draw down from adjacent developments. The PD must identify and assess the scale and extent of all the potential and likely cumulative impacts on water resources from the proposed action and other nearby resource projects. Where cumulative impacts are predicted, avoidance, mitigation and management measures must be proposed.	PD – section 5.3.7 Attachment D – section 9.4
2.5	**Chemical risk**	

2.5.1	The department notes that accidental release scenarios have not been included in the chemical risk assessment and depend upon assessment outcomes to inform emergency response actions.	PD – section 6.2.1
3	**IMPACT ASSESSMENT**	
3.1.1	Any technical data and other information used or needed to make a detailed assessment of the relevant impacts.	PD – section 7.2 Attachment C – section 7.0 Attachment D – section 9.0
3.1.2	Include the direct and indirect loss and/or disturbance of MNES individuals and habitat as a result of the proposed action. This must include the quality of the habitat impacted and quantification of the individuals and habitat area (in hectares) to be impacted.	PD – section 7.2 Attachment C – section 7.0 Attachment D – section 9.0 Attachment B – section 4.0
3.1.3	An assessment of the impacts of habitat fragmentation in the proposed action area and surrounding areas, including consideration of species' movement patterns	PD – section 7.2 Attachment C – section 7.1
3.1.4	An assessment of the likely duration of impacts to MNES as a result of the proposed action; including a detailed assessment of the nature and extent of the likely short-term and long-term relevant impacts.	PD – section 7.2 Attachment C – section 7, 9 & Appendix F Attachment D – section 4.2, 9 &11
3.1.5	A discussion of whether the impacts are likely to be repeated, for example as part of maintenance.	PD – section 7.2 Attachment C – section 7 Attachment D – section 9 Attachment F
3.1.6	A discussion of whether any impacts are likely to be unknown, unpredictable or irreversible.	PD – section 7.2 Attachment B Attachment C – section 7 Attachment F Attachment G Attachment H
3.1.7	Justification, with supporting evidence, how the proposed action will not be inconsistent with: • Australia's obligations under the Biodiversity Convention, the Convention on Conservation of Nature in the South Pacific (Apia Convention), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); and • a recovery plan or threat abatement plan.	PD – section 7.2
4	**AVOIDANCE, MITIGATION AND MANAGEMENT MEASURES**	PD – section 8.0
4.1	A detailed summary of measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of the proposed action on relevant MNES.	PD – section 8.1 Attachment B Attachment C – section 8 Attachment D – section 10

		Attachment E Attachment F Attachment G Attachment H
4.2	The proposed measures must be based on best available practices, appropriate standards, evidence of success for other similar actions and supported by published scientific evidence.	PD – section 8.1 Attachment C – section 8 Attachment D – section 10
4.3	All proposed measures for MNES must be drafted to meet the 'S.M.A.R.T' principle: • 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)	PD – section 8.1 Attachment B Attachment C – section 8 Attachment D – section 10 Attachment E Attachment F Attachment G Attachment H
4.4	Any management plans as committed by the proponent, are to be provided (in approved or draft format) as appendices to the preliminary documentation.	PD – section 8.1 Attachment B Attachment F Attachment G Attachment H
4.5	Details of specific and measurable environmental outcomes to be achieved for relevant MNES. All commitments must be drafted using committal language (e.g. 'will' and 'must') when describing the proposed measures.	PD – section 8.1 Attachment C Attachment D Attachment E Attachment F Attachment G Attachment H
4.6	Details of the proposed measures to be undertaken to avoid, mitigate and manage the relevant impacts of the proposed action, including those required through other Commonwealth, State and local government approvals.	PD – section 8.1 Attachment C – section 8 Attachment D – section 10
4.7	Information on the timing, frequency and duration of the proposed avoidance, mitigation, management and monitoring measures, and corrective actions to be implemented.	PD – section 8.1 Attachment F Attachment H
4.8	An assessment of the expected or predicted effectiveness of the proposed measures.	PD – section 8.1
4.9	Any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advice, recovery plan or threat abatement plan, and a discussion on how the proposed measures are not inconsistent with relevant plans.	PD – section 8.1 Attachment B – Appendix A Attachment C – Appendix D Attachment F Attachment G Attachment H

4.10	Details of ongoing management, including monitoring programs to support an adaptive management approach, that validate the effectiveness of the proposed measures and overall demonstrate that environmental outcomes will be achieved.	PD – section 8.1 Attachment B Attachment F Attachment G Attachment H
4.11	Details of tangible, on-ground corrective actions that will be implemented in the event the monitoring programs indicate that the environmental outcomes have not or will not be achieved.	PD – section 8.1 Attachment B Attachment F Attachment G Attachment H
4.12	Details of any measures proposed to be undertaken by Queensland and local governments, including the name of the agency responsible for approving each measure	PD – section 8.1 Attachment I
5	**REHABILITATION REQUIREMENTS**	
5.1	Decommissioning and/or rehabilitation that includes, but is not limited to, drilling and well sites, gas and water pipelines, areas of associated infrastructure (including access roads) and water storage sites.	PD – section 9.2.1 Attachment H – sections 4 & 5
5.2	Rehabilitation acceptance criteria, including for the restoration of habitat for relevant listed threatened species and communities.	PD – section 9.2.2 Attachment H – section 6
5.3	A summary of the procedures, including contingency measures, that will be undertaken to achieve the rehabilitation acceptance criteria.	PD – section 9.2.3 Attachment H – sections 4, 6 and 7
5.4	A summary of a monitoring program to determine the success of rehabilitation activities implemented by the proponent.	PD – section 9.2.3 Attachment H – sections 4, 6 and 7
5.5	The details of any rehabilitation activities proposed to be undertaken as required by Commonwealth, State or Territory, and local government legislation. Attach relevant Commonwealth, State or Territory, and local government approvals and permits as supporting documents to the preliminary documentation.	PD – section 9.2.3 Attachment H Attachment I
6	**OFFSETS**	
6.1	An assessment of the likelihood of residual significant impacts occurring on relevant MNES, after avoidance, mitigation and management measures have been applied.	PD – section 10.0
6.2	A summary of the proposed environmental offset and key commitments to achieve a conservation gain for each protected matter.	PD – section 10.0
6.3	If an offset area has not been nominated, include a draft OMS as an appendix to the PD. The draft OMS must meet the information requirements set out in Appendix B.1.	PD – section 10.0
6.4	Where offset area/s have been nominated, include a draft OAMP as an appendix to the PD. The draft OAMP must meet the information requirements set out in Appendix B.2, and must be prepared by a suitably qualified ecologist and in accordance with the department's Environmental Management Plan Guidelines (2014), available at: www.environment.gov.au/epbc/publications/environmental-management-planguidelines.	PD – section 10.0
7	**ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)**	
7.1	A description of how the proposed action meets the principles of ESD, as defined in section 3A of the EPBC Act. More information on ESD is available at www.environment.gov.au/aboutus/esd/publications/national-esd-strategy.	PD – section 11.0
8	**ECONOMIC AND SOCIAL MATTERS**	
8.1	An analysis of the economic and social impacts of the action, both positive and negative.	PD – section 12.1
8.2	Details of any public consultation activities undertaken and their outcomes.	PD – section 12.2
8.3	Details of any consultation with Indigenous stakeholders. Indigenous engagement Identify existing or potential native title rights and interests, including any areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the proposed action and the potential for managing those impacts. Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. The department considers that best practice consultation, in	PD – section 12.3

	accordance with the Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act (2016) includes: • identifying and acknowledging all relevant affected Indigenous peoples and communities; • committing to early engagement; • building trust through early and ongoing communication for the duration of the project, including approvals, implementation and future management; • setting appropriate timeframes for consultation; and • demonstrating cultural awareness. Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities.	
8.4	Projected economic costs and benefits of the project, including the basis for their estimate through cost/benefit analysis or similar studies.	PD – section 12.4
8.5	Employment opportunities expected to be generated by the project (including construction and operational phases).	PD – section 12.5
9	**ENVIRONMENTAL RECORD OF THE PERSON PROPOSING TO TAKE THE ACTION**	
	Include details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:	PD – section 13.0
9.1	the person proposing to take the action;	
9.2	for an action for which a person has applied for a permit, the person making the application;	
9.3	if the person is a body corporate—the history of its executive officers in relation to environmental matters; and	
9.4	if the person is a body corporate that is a subsidiary of another body or company (the parent body)—the history in relation to environmental matters of the parent body and its executive officers.	