APPENDIX 1-1-V2.4

TERMS OF REFERENCE CHECKLIST

Wandoan Coal Project

TERMS OF REFERENCE
FOR AN
ENVIRONMENTAL IMPACT STATEMENT
VOLUME 2
UNDER PART (4) OF THE QUEENSLAND
STATE DEVELOPMENT AND PUBLIC WORKS ORGANISATION ACT 1971

The Coordinator-General

Dec-08

Wandoan Project - Terms of Reference	**Covered Y/N/ NA**	**Section number of Chapter or Executive Summary**
PART B—Specific requirements: content of the EIS		
The EIS should include the following sections but need not be limited to these sections or inferred structure.		
Executive summary		
The function of the executive summary is to convey the most important aspects and options relating to the project to the reader in a concise and readable form. It should use plain English and avoid the use of jargon. The executive summary should be written as a standalone document, able to be reproduced on request and distributed to interested parties who may not wish to read or purchase the EIS as a whole.		
The structure of the executive summary should follow that of the EIS, and focus strongly on the key issues to enable the reader to obtain a clear understanding of the project and its potential adverse and beneficial environmental, social and economic impacts and the management measures to be implemented by the proponent to mitigate all residual impacts.		
The executive summary should include:		
• the title of the project	Y	Page 1, refer also Volume 1
• name and contact details of the proponent, and a discussion of previous projects undertaken by the proponent and their commitment to effective environmental management		Refer to Volume 1
• a concise statement of the aims and objectives of the project		Refer to Volume 1
• the legal framework, decision-making authorities and Advisory Agencies		Refer to Volume 1
• an outline of the background and need for the project, including the consequences of not proceeding with the project		Refer to Volume 1
• a description of the alternative options considered and reasons for the selection of the proposed development option	Y	Page 1; also refer Chapter 2, Volume 1
• a brief description of the project (pre-construction, construction and operational activities) and the existing environment, utilising visual aids where appropriate		Refer to Volume 1
• an outline of the principal environmental impacts predicted (including economic and social impacts) and the proposed environmental management strategies (including waste minimisation and management) and commitments to minimise the significance of these impacts	Y	Page 1-7; also refer Volume 1
• Community attitudes to the project and community consultation undertaken	Y	Page 7, Volume 1, Chapter 4
• detailed maps of the proposed project location.		Refer to Volume 1
Glossary of terms		
A glossary of technical terms, acronyms and abbreviations should be provided.		
1 Introduction		
The introduction should clearly explain the function of the EIS, why it has been prepared and what it sets out to achieve. It should also define the audience to whom it is directed, and contain an overview of the structure of the document.	Y	1.6
1.1 Project proponent		
This section should describe the experience of the project proponent (and its joint venture partners), including the nature and extent of business activities, experience and qualifications, and environmental record, including the proponent's environmental policy.	Y	1.2
1.2 Project description		
This section should provide a brief description of the key elements of the project including associated infrastructure requirements. The location of the project and its infrastructure requirements should be described and mapped. Detailed descriptions of the project should follow in section 2.	Y	1.3
1.3 Project rationale		
This section should provide a statement of the objectives of the project and a brief outline of the events leading up to the project's formulation, including alternatives, envisaged time scale for implementation and project life, anticipated establishment costs and actions already undertaken within the project area.	Y	2.2
1.3.1 Project need, costs and benefits		
The justification for the project should be described, including its strategic, economic, environmental and social implications and its technical feasibility and commercial viability. The status of the project should be discussed in a regional, state and national context. The project's compatibility with relevant policy and regulatory frameworks should also be described.	Y	2.2
This section should also summarise the economic and social costs and benefits for businesses and the wider community arising from the project; regional socio-economic issues including cultural impacts, community disruption, related land use changes, employment, skills development and any workforce accommodation issues; and increased demands on natural resources.		
1.3.2 Relationships to other projects		
This section should also describe how the project 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 area affected by the project.	Y	Refer Vol 1: 1.1.1, 1.5.3, 1.5.4
1.4 Alternatives to the project		
This section should describe feasible alternatives, including conceptual, technological and locality alternatives to the project, and discussion of the consequences of not proceeding with the project. Alternatives should be discussed in sufficient detail to enable an understanding of the reasons for preferring certain options and courses of action and rejecting others. Comparative environmental impacts of each alternative should be summarised.	Y	2.3
Should water supply, power, transport and/or storage infrastructure be included as an element of the project or as a separate but inter-related component of the project, this section should include a description of and rationale for such infrastructure.	Y	2.1, 2.2
Reasons for selecting the preferred options should include technical, commercial, social and natural environment aspects. In particular, the principles of environmentally sustainable development and sustainable development should be included. The relationship of options chosen for waste management and any emissions produced should be detailed.	Y	2.3
This information is required to assess why the scope of the project is as it is and to ensure that the environmentally sustainable development principles and sustainable development aspects have been considered and incorporated during the scoping and planning of the proposal.	Y	2.6

1.5 Co-location opportunities		
Where linear infrastructure is proposed (i.e. water pipeline, electricity transmission and distribution lines, gas pipelines etc) opportunities may exist for efficiency gains and the mitigation of environmental and property impacts through the location of other proposed linear infrastructure in, near or parallel to the proposed infrastructure.	Y	2.3.11
The project proponent should identify any proposals to develop infrastructure within the vicinity of the proposed linear infrastructure investigation corridor. Such proposals would be limited to those projects which are in the public arena during the period of preparation of this EIS and for which a proponent entity can be readily identified.	NA	
It would be inappropriate for this EIS to evaluate the environmental impacts of other infrastructure not directly required for this project. However, the EIS should describe the implications of locating other forms of linear infrastructure within or near the infrastructure. Where co-location may be likely, the EIS should consider opportunities to coordinate or enhance any of the impact mitigation strategies proposed for the infrastructure through cooperation with other proponents in the locality.	NA	
1.6 The environmental impact statement process		
1.6.1 Methodology of the EIS		
This section should make clear the objectives of the EIS process under the SDPWO Act, the environmental authority approval process under the EP Act and mining lease approval under the MRA. This section should include a description of the impact assessment process steps, timing and decisions to be made for relevant stages of the project, in the context of the EP Act and MRA process. In particular, this section should outline mechanisms in the process for public input and the public release of an EIS which will specify all responses to stakeholder submissions.	Y	1.1
The information in this section is required to ensure:		
• relevant legislation is addressed	Y	1.6.2
• readers are informed of the process to be followed	Y	1.6.2
• the stakeholders are aware of any opportunities for input and participation.	Y	1.6.6
1.6.2 Objectives of the EIS		
This section should provide a statement of the objectives of the environmental impact assessment. The structure of the EIS can then be outlined as an explanation of how the EIS will meet its objectives. The purpose of the EIS is to:	Y	1.6.1
• provide public information on the need for, and likely effects of, the project on the natural, social and economic environment	Y	refer all chapters, chapter 4, chapter 21 in relation to community engagement
• set out acceptable standards and levels of impacts (both beneficial and adverse) on environmental values	Y	1.6.5
• demonstrate how environmental impacts can be managed through the protection and enhancement of the environmental values.	Y	refer all mitigation measures in chapters
The role of the EIS in providing information for the formulation of the environmental management plan (EMP) for the project should be discussed. Discussion of options and alternatives is a key aspect of the EIS.	Y	1.6.1
1.6.3 Submissions		
The reader should be informed as to how and when public submissions on the EIS will be addressed and taken into account in the decision-making process. The EIS should inform the reader as to how to make submissions and what form the submissions should take.	Y	1.6.6
1.7 Public consultation process		
An appropriate public consultation program is an important component of the EIS process.		
This section should outline the methodology that will be adopted to:		
• identify the stakeholders and how their involvement will be facilitated	Y	4.2
• identify the process conducted to date and future consultation strategies and programs, including during the operational phase of the project	Y	All Chapter 4
• indicate how consultation involvement and outcomes will be integrated into the EIS process and future site activities, including opportunities for engagement and provision for feedback and action if necessary.	Y	4.4
A list of the stakeholders consulted during the program should be provided, as well as any meetings held, presentations made and any other consultation undertaken for the EIS process.	Y	4.2.1
The public consultation process should identify broad issues of concern to local and regional community and interest groups and address issues from project planning through commissioning and project operations. A consultation plan should be prepared during the initial phase of the EIS process. This should identify:	Y	4.3
• the types of activities to be undertaken		
• timing	Y	All Chapter 4
• target stakeholder/community representatives	Y	All Chapter 4
• integration with other EIS activities and the project development process	Y	All Chapter 4
• consultation responsibilities	Y	All Chapter 4
• communication protocols	Y	All Chapter 4
• reporting and feedback arrangements.	Y	All Chapter 4
Information about the consultation process that has taken place and the results should be provided.	Y	4.2, 4.3, 4.4
The public consultation program should provide opportunities for community involvement and education. It may include interviews with individuals, public communication activities, interest group meetings, production of regular summary information and updates, and other consultation mechanisms to encourage and facilitate active public consultation.	Y	4.2, 4.3, 4.4
1.8 Project approvals		
1.8.1 Relevant legislation and policy requirements		
The aim of this section is to provide the reader with an explanation of the legislation and policies controlling the approvals process for the project. Reference should be made to the SDPWO Act, EP Act, MRA, *Integrated Planning Act 1997* (IPA), *Transport Infrastructure Act 1994*, *Land Act 1994*, *Water Act 2000, Vegetation Management Act 1999, Cultural Heritage Act 2003, Land Protection (Pest and Stock Route Management) Act 2002, Fisheries Act 1994, Electricity Act 1994, Nature Conservation Act 1992*, *Soil Conservation Act 1986*, *Forestry Act 1959* and other relevant Queensland laws. All requirements of the EPBC Act and *Native Title Act 1993* should also be included.	Y	3.2, 3.3, 3.4
The EIS should describe the approval process resulting from the gazettal of this project as a significant project pursuant to the SDPWO Act and outline the linkage to other relevant state and federal legislation. This outline should describe the public notification processes and appeal rights that will be available in the anticipated approval processes.	Y	1.6.2, 3.3.1, 3.5, Appendix 3-1-V2.4
The EIS should indicate the level of approvals anticipated by the proponent for each project element in order that approval agencies are able to determine the completeness of the information presented and the scope to generate the anticipated approvals.	Y	3.5, Appendix 3-1-V2.4
Local government planning controls, local laws and policies applying to the development should be described, and a list provided of the approvals required for the project and the expected program for approval of applications.	Y	3.4, Appendix 3-1-V2.4
This information is required to assess how the legislation applies to the proposal, which agencies have jurisdiction, and whether the proposed impact assessment process is appropriate.	Y	3.2, 3.3, 3.4
1.8.2 Planning processes and standards		
This section should discuss the project's consistency with existing land uses or long-term policy framework for the area (e.g. as reflected in local and regional plans), and with legislation, standards, codes or guidelines available to monitor and control operations on site. This section should refer to all relevant state and regional planning policies. This information is required to demonstrate how the proposal conforms to state, regional and local plans for the area.	Y	3.3.15, 3.4
1.9 Accredited process for controlled actions under Commonwealth legislation		

Projects that are declared 'significant projects' pursuant to s.26(1)(a) of the SDPWO Act requiring the preparation of an EIS may also be controlled actions under the federal EPBC Act. In which case, the federal government may accredit the state's assessment process under Part 8 of the EPBC Act.	Y	3.2.1, 3.5
Under an accredited state EIS process, it will be necessary for TOR to address potential impacts on the matters of national environmental significance (NES) that were identified in the 'controlling provisions' when the proposed project actions were declared controlled actions on 21 July 2008.	Y	3.2.1
It is preferable that a stand-alone report be provided as an appendix to the EIS that exclusively and fully addresses the issues relevant to the controlling provisions, for each component of the Wandoan Coal Project. In which case, it should structured as per the following outline for each component of the Wandoan Coal Project.	Y	3.2.1, TR 17A-1-V2.5, Attachment J of technical report for Terrestial Ecology-Chapter 17
1 Introduction	Y	as above
2 Description of proposed action (as it would impact on NES matters)	Y	as above
3 Description of the affected environment relevant to the controlling provisions (i.e. describe the features of the environment that are NES matters protected under the EPBC)	Y	as above
4 Assessment of impacts on NES matters and mitigation measures	Y	as above
5 Conclusions	Y	as above
6 References.	Y	as above
Alternatively, as a minimum requirement, the EIS should provide separate discussions under sub-headings in the relevant sections that describe the values and address the potential impacts on NES matters. The locations of those sub-headings should be readily identifiable from the table of contents. For example, if one of the controlling provisions was 'Listed threatened species and communities', then subsections, headed 'Matters of national environmental significance', should be placed in section 3.3 (Nature conservation) under both the 'Description of environmental values' and 'Potential impacts and mitigation measures' headings. Those subsections should address exclusively and fully the issues relevant to the controlling provisions.	Y	TR 17A-1-V2.5, Attachment J of technical report for Terrestial Ecology-Chapter 17
# 2 Description of the project		
The objective of this section is to describe the project, and its various components (as outlined in the preamble), through its lifetime of construction, operation and decommissioning (including rehabilitation). This information is required to allow assessment of all aspects of the project, including which approvals may be required and how they may be managed through the life of the project.		
## 2.1 Overview of project		
The EIS should provide an overview of the project to put it into context. This section should include:		
• a description of the key components of the project through the use of text and design plans where applicable	Y	1.1, 1.4, 6.2
• the expected cost and overall duration and timing of the project	Y	5.2, and Volume 1 Chap 22.4
• the employment benefits from the construction and operational phases of the project	Y	Refer Vol 1 Chapter 22
• a summary of any environmental design features of the project should be presented.	Y	Throughout the document as mitigation measures, Chapter 27,
### 2.1.1 Mine		
This section should provide details on aspects of the mine components of the project, including:	NA	
• the location of the proposed mine, illustrated on maps	NA	
• probable pit boundaries and mine path	NA	
• mine development sequence or timeframes	NA	
• proposed stream diversions and water storages	NA	
• any road and other infrastructure diversions (water pipelines, electricity transmission lines etc.)	NA	
• any final void to be left at the cessation of mining.	NA	
The rationale for the preferred operational program should be explained. The identification of all site access points to, from and within the project should also be identified on maps, to assist in the assessment of emergency planning.	Y	5.2, 6.4
### 2.1.2 Associated mine infrastructure		
This section should provide details on the following aspects of the mine's associated infrastructure (e.g. coal handling facilities and tailings storage facilities), including any infrastructure associated with delivery of coal and secondary coal distribution infrastructure such as:		
• a description of plant and equipment to be employed	Y	6.2
• the capacity of plant and equipment	Y	6.2
• water requirements	Y	6.2
• chemicals to be used.	NA	
Concept and layout plans should be provided highlighting proposed buildings, structures, plant and equipment associated with the processing operation. The nature, sources, location and quantities of all materials to be handled, including the storage and stockpiling of raw materials, should be described.	Y	5.4, Figure 5.1, 5.6
### 2.1.3 Ecologically sustainable development		
The EIS should provide a comparative analysis of how the project conforms to the objectives for ecologically sustainable development (see the *National Strategy for Ecologically Sustainable Development 1992* available from the Australian Government Publishing Service).	Y	Vol 1 6.10
This analysis should consider the cumulative impacts (both beneficial and adverse) of the project from a life-of-project perspective, taking into consideration the scale, intensity, duration or frequency of the impacts to demonstrate a balance between environmental integrity, social development and economic development.	Y	Chapter 26
This information is required to demonstrate that sustainable development aspects have been considered and incorporated during the scoping and planning of the project.	Y	Vol 1 6.10
## 2.2 Location		
The regional and local context of the project should be described and illustrated on maps at suitable scales and reference points. Real property descriptions of the project site should be provided. Maps should show the precise location of the project area, and in particular:		
• the location of the resource to be explored, developed or mined	Y	1.1
• the location and boundaries of land tenures, in place or proposed, to which the project area is or will be subject	Y	1.3
• the location and boundaries of mining tenures, granted or proposed, to which the project area is or will be subject	Y	1.3
• the location and boundaries of the project footprint showing all key aspects, including mine excavation(s), stockpiles, areas of fill, watercourses, plant locations, water storages, buildings, bridges, culverts, hardstands, car parks and any final void to be left at the cessation of mining etc	NA	
• any part of the resource not intended to be mined and any part of the resource that may be sterilised by the proposed mining operations	NA	
• the location of all proposed project transport and coal loading infrastructure for both new works and upgrades of existing infrastructure, including the various coal transport options considered with an explanation for the rationale for the preferred transport option(s) for the project	Y	Chapter 9
• the location of any proposed buffers surrounding the working areas	NA	
• the identification of all site access points to, from and within the project on maps, to assist in the assessment of emergency planning.	Y	6.4

Consideration should be given to providing a rectified air photo enlargement to illustrate components of the project in relation to the land and mining tenures and natural and built features of the area.	Y	6.2.1
2.3 Construction		
The extent and nature of the project's construction phase should be described (as well as any works required off site enabling construction to commence, e.g. road upgrades), including a map at reasonable scale that shows the footprint of the mine and construction works. The description should include the type and methods of construction, the construction equipment to be used and the items to be transported onto the construction site including the quarry sites from which any gravel/rock is extracted.	Y	5.3, 5.4, 5.6
Any staging of the project should be described and illustrated showing site boundaries, development sequencing and timeframes.	NA	
2.3.1 Mine		
This section should provide a description of construction activities relating to the project including:		
• site access:	NA	
– upgrading of roads, railways and other infrastructure	NA	
– clearing	NA	
– establishment requirements for construction facilities.	NA	
• construction requirements, including source and extraction of construction inputs and materials, including construction water:	NA	
– details of the method of construction of the mine and volumes of material required	NA	
– any staging of construction activities.	NA	
• type, source, quantity and method of transport of construction materials	NA	
• general construction standards and site management, including environmental and safety management	NA	
• an assessment of expected physical and chemical properties and quantities of soil/rock to be excavated	NA	
• details of any potential disruption to flows of waterways during construction and any diversion works required	NA	
• relocation of existing infrastructure	NA	
• timetable for construction, particularly noting seasonal rainfall or flows	NA	
• the hours of operation	NA	
• emergency aid/medical facilities to be provided on site	NA	
• the construction methods and containment/disposal of construction spoil	NA	
• solid and liquid waste handling.	NA	
2.3.2 Associated infrastructure		
This section should provide a description of construction activities relating to the project's associated infrastructure, including for transport of coal and water:		Chapter 5
• a map showing location of any works	Y	6.2.1
• on-site plans, layouts, boundaries and elevations	Y	6.2.1
• detailed concept and staging (if any proposed) for additional transport facilities and locations	Y	5.2
• plant and machinery likely to be involved	Y	5.4
• supply and storage of materials—volume, composition, handling and storage during construction	Y	5.6
• extent that service corridors will be used during construction and maintenance	Y	5.3.3, 5.3.4
• width of vegetation clearing required. This information must indicate where vegetation to be cleared has significant conservation value (such as sensitive environmental areas and creek crossings), and must also reference where in the EIS the impacts on such vegetation have been addressed	Y	5.4.1
• the location(s) of any road/rail crossings along proposed conveyor/water pipeline routes for the project	Y	Figure 1-1-V2.3.
• typical crossing techniques including restoration works that would be used at creek crossings, and road, rail, and other service corridor crossings	Y	5.4.2
• disposal of plant-matter left after clearing vegetation	Y	5.10.12, Chapter 18
• details of any hydrostatic testing procedures (discussion of water usage for this activity must be addressed in section 3)	Y	5.4.3
• cleanup and restoration (rehabilitation) of areas used during construction including any accommodation facilities and storage areas	Y	5.4.4 / 5.10.10 / 5.10.11
• disposal/reuse of surplus excavated material and if this material can be coordinated with concurrent construction activities in the vicinity.	Y	5.10.12
2.4 Operations		
2.4.1 Mine and associated infrastructure		
The EIS should include a description of the following:		
• mine life and coal resource base:	NA	
– the proposed mine life and an outline of the coal resource base	NA	
– the quantity of coal to be mined annually including any proposed ramping-up of production or staging of development.	NA	
• mining methods and equipment:	NA	
– the mining type and methods to be used, including the major equipment to be used in the various components of the operation	NA	
– the use of different techniques in areas of different topographic or geo-technical character.	NA	
• mine sequencing:	NA	
– the proposed sequence and timing of mining of each seam within the mining lease	NA	
– the physical extent of excavations, including proximity of mining to any state-controlled or local roads to ensure management of any potential for subsidence of road infrastructure from mining	NA	
– the location of stockpiles of overburden or coal reject/tailings to be handled during the project's operation or left after mining ceases, including the rate of throughput of stockpiles of product, reject and overburden	NA	
– the proposed progressive backfilling of excavations	NA	
– the area disturbed at each major stage of the project.	NA	
• processing and products:	NA	
– concept and layout plans highlighting proposed buildings, structures, plant and equipment	NA	
– the nature, sources, location and quantities of all materials to be handled, including the storage and stockpiling of raw materials	NA	
– the quantities and characteristics of the products produced on an annual basis	NA	
– the source, quantities and uses of water	NA	
– indicative process flow-sheets showing material balances for the processing plant, and the anticipated rates of inputs, along with similar data on products (e.g. product or washed coal), wastes (e.g. tailings and coarse rejects) and recycle streams (e.g. water).	NA	
• ongoing evaluation and exploration activities:	NA	
– the extent and nature of any proposed ongoing exploration or geological and geotechnical evaluation within the project area that may be required over the life of the project.	NA	
• coal handling:	NA	
– the proposed methods and facilities to be used for coal storage and for transferring coal from the mining lease to the proposed delivery options, including on plans at an appropriate scale	NA	
– any environmental design features of coal stockpiling and blending at any off-site facilities	NA	
– the capacity of the rail option to handle the proposed coal volumes generated by the project over all phases of development.	NA	
• associated infrastructure	NA	
– the proposed sources and facilities to supply water for potable and non-potable uses	NA	

– the proposed methods and facilities for wastewater treatment and disposal	NA	
– size, location and configuration of accommodation facilities outside of the mining lease area	NA	
– location, size and facilities required for the supply of coal seam methane gas for on-site power supply.	NA	
2.5 Rehabilitation and decommissioning		
This section should describe the options, strategies and methods for progressive and final rehabilitation of the environment disturbed by the project. The strategic approach to progressive and final rehabilitation should be described. A preferred rehabilitation strategy should be developed with a view to minimising the amount of land disturbed at any one time. The final topography of any excavations, waste areas and dam sites should be shown on maps at a suitable scale.	Y	25.2.1
The strategies and methods presented for progressive and final rehabilitation of disturbed areas should demonstrate compliance with the objectives of the *Environmental management policy for mining in Queensland* (1991) or with updated versions of that policy available at the time of drafting the EIS. Land suitability assessment should follow the *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland* (1995). In particular, the strategies and methods should have the following objectives:	Y	9.2.4, 9.3.7
• mining and rehabilitation should aim to create a landform with land use capability and/or suitability similar to that prior to disturbance unless other beneficial land uses are pre-determined and agreed	Y	9.6.4
• mine wastes and disturbed land should be rehabilitated to a condition that is self-sustaining, or to a condition where the maintenance requirements are consistent with an agreed post-mining land use	NA	
• surface and ground waters that leave the lease should not be degraded to a significant extent. Current and future water quality should be maintained at levels that are acceptable for users downstream of the site.	Y	11.6.1, 11.6.2
The means of decommissioning the project, in terms of the removal of plant, equipment, structures and buildings should be described, and the methods proposed for the stabilisation of the affected areas should be given. Information should be provided regarding decommissioning and rehabilitation of the plant site, removal of processing plant, rehabilitation of concrete footings and foundations, hardstand areas, storage tanks and wharfage (including any potential for reuse of these facilities). Options and methods for the disposal of wastes from the demolition of plant and buildings should be discussed in sufficient detail for their feasibility and suitability to be established.	Y	25.2.2
Proposals to divert creeks during operations, and, if applicable, for the reinstatement of the creeks after operations have ceased, should be provided. Where dams are to be constructed, proposals for the management of these structures after the completion of the project should be given. Also, the final drainage and seepage control systems and long-term monitoring plans should be described.	NA	
A description of topsoil management should consider transport, storage and replacement of topsoil to disturbed areas. The minimisation of topsoil storage times (to reduce fertility degradation) should also be addressed.	Y	9.6.3
Detail of the impacts of the preferred rehabilitation strategy should be discussed in the appropriate subsections of section 3 'Environmental values and management of impacts' particularly with regard to such issues as final landform stability, rehabilitation of flora and the long-term quality of water in any final voids. Implications for the long-term use and fate of the site should also be addressed, particularly with regard to the on-site disposal of waste and the site's inclusion on the environmental management register or contaminated land register.	NA	
2.6 Associated infrastructure requirements		
This section should provide descriptions, with concept and layout plans, of requirements for constructing, upgrading or relocating all infrastructure in the vicinity of the project area. The matters to be considered include such infrastructure as roads, bridges, dams, power lines and other cables, wireless technology (e.g. microwave telecommunications), and pipelines for any services (whether underground or above).	Y	Chapter 5
2.6.1 Workforce and accommodation		
This section should provide details on the employment requirements and skills base the required workforce for both the construction and operations phases of the project and any other facilities.	Y	5.5
The section should also discuss an accommodation strategy for the construction workforce that addresses the estimated housing needs of both single and accompanied construction workers. This section should include details of the size, location and management of any temporary worker accommodation that will be required either on-site or off-site. Maps should be included as necessary to illustrate the site and should include the location of any proposed workers' accommodation on-site or in the vicinity of the project.	Y	5.3.5
This section should outline the need for, and location of, a site office during the construction phase that will act as a logistics base, materials/vehicle storage depot and workshop area, and highlight the need for power, water and sewerage at the site office. Information in relation to the site office and any construction facility should include:	Y	5.3.4; 5.8
• food preparation and storage	Y	5.3.4
• ablution facilities	Y	5.3.4; 5.3.6
• vector and vermin control	NA	
• fire safety	Y	5.8
• indoor air quality	Y	5.7; Chapter 24
· waste management (storage, handling, transport, disposal/treatment)	Y	5.10.12
• dust and noise control in relation to proximity of accommodation facilities to the construction area.	Y	5.10.7
Outline local government approvals required for establishment and operation of such accommodation facilities.	NA	
2.6.2 Transport—road/rail/ship/air		
Describe arrangements for the transport of plant, equipment, products, wastes and personnel during both the construction phase and operational phases of the project. The description should address the use of existing local and regional facilities and all requirements for the construction, upgrading or relocation of any transport related infrastructure (e.g. main and local roads, local airstrips, etc.).	Y	5.6; 5.10.6; Chapter 12 (Vol. 1)
Full details of transport volumes, modes and routes along with the assessment of transport impacts on existing infrastructure and impact mitigation strategies should be provided in accordance with section 3.8.	Y	5.6; 5.10.6; Chapter 12 (Vol. 1)
2.6.3 Water supply and storage		
The EIS should provide information on water usage by the project, including the quality and quantity of all water supplied to the site. In particular, the proposed and optional sources of water supply should be described (e.g. bores, any surface storages such as the Glebe Weir, municipal water supply pipelines, coal seam gas water). If infrastructure is required for the purpose of supplying water to the project, for example, pipelines from water supplies to the project or the raising of Glebe Weir, then the impacts of such infrastructure are to be assessed as part of the project and discussed for each of the relevant 'Environmental values and management of impacts' subsections outlined in section 3 of these TOR.	Y	5.3.6
If saline water is to be stored on site (e.g. coal seam gas water), details should be provided as to how these storages will be constructed, monitored and managed. This information should be referenced to section 3.4 of these TOR.	NA	
Estimated rates of supply from each source (average and maximum rates) should be given. Any proposed water conservation and management measures should be described.	Y	5.3.6; 5.4.3
Determination of potable water demand should be made for the project, including the temporary demands during the construction period. Details should be provided of any existing town water supply to meet such requirements. If water storage and treatment is proposed on site, for use by the site workforce, then this should be described.	Y	see Volume 1, Chapter 11.4.1
2.6.4 Waste management		
The EIS should outline the waste management requirements during the construction, operational and decommissioning stages of the project. This outline should include waste stream descriptions (including physical and chemical characteristics), expected generation rates, proposed handling, storage, treatment and disposal methods. This outline should also identify the waste avoidance, reuse, recycling, treatment and disposal efforts proposed.	Y	all Chapter 18
2.6.5 Stormwater drainage		

A description should be provided of the proposed stormwater drainage system and the proposed disposal and/or re-use arrangements, including any off-site services and downstream impacts, both for construction and operational purposes.	Y	5.10.3; 5.10.5; 11.6.1
2.6.6 Sewerage		
This section should describe, in general terms, the sewerage infrastructure required by the project. If it is intended that industrial effluent or relatively large amounts of domestic effluent are to be discharged into an existing sewerage system, an assessment of the capacity of the existing system to accept the effluent should be provided. For industrial effluent, this should include detail of the physical and chemical characteristics of the effluent(s).	Y	5.3.6
2.6.7 Energy		
The EIS should describe all energy requirements, including electricity, natural gas, and/or solid and liquid fuel requirements for the construction and operation of the proposal. The locations of any easements should be shown on the infrastructure plan. Energy conservation should be briefly described in the context of any federal, state and local government policies.	Y	5.3.6
2.6.8 Telecommunications		
The EIS should describe the telecommunications proposed for the project and any impacts on existing telecommunications infrastructure (such as optical cables, microwave towers, etc.) and identify the owners of that infrastructure.	Y	5.3.6
3 Environmental values and management of impacts		
The purpose of this section is to:		
• describe the existing environmental values of the area which may be affected by the proposal. Environmental values are defined in section 9 of the EP Act, environmental protection policies and other documents such as the Australian and New Zealand Environment and Conservation Council (ANZECC) 2000 guidelines. Environmental values may also be derived following recognised procedures, such as described in the ANZECC 2000 guidelines . Environmental values should be described by reference to background information and studies, which should be included as appendices to the EIS		
• describe the potential adverse and beneficial impacts of the proposal on the identified environmental values. Any likely environmental harm on the environmental values should be described		
• describe any cumulative impacts on environmental values caused by the proposal, either in isolation or by combination with other known existing or planned sources of contamination		
• present environmental protection objectives and the standards and measurable indicators to be achieved		
• examine viable alternative strategies for managing impacts. These alternatives should be presented and compared in view of the stated objectives and standards to be achieved. Available techniques, including best practice, to control and manage impacts to the nominated objectives should be discussed		
This section should detail the environmental protection measures incorporated in the planning, construction, operations, decommissioning, rehabilitation and associated works for the project. Measures should prevent, or where prevention is not possible, minimise environmental harm and maximise socio-economic and environmental benefits of the proposal. Preferred measures should be identified and described in more detail than other alternatives.		
Environmental protection objectives may be derived from legislative and planning requirements which apply to the proposal including Commonwealth strategies, state planning policies, local authority strategic plans, environmental protection policies under the EP Act, and any catchment management plans prepared by local water boards or land care groups. Special attention should be given to those mitigation strategies designed to protect the values of any sensitive areas and any identified ecosystems of high conservation value within the area of possible proposal impact.		
This section should address all elements of the environment, such as land, water, air, noise, nature conservation, cultural heritage, social and community, economy, waste, health and safety, hazards and risk, in a way that is comprehensive and clear. To achieve this, the following issues should be considered for each environmental value relevant to the project.	Y	Chapter 20B
• **Environmental values affected**—describe the existing environmental values of the area to be affected including values and areas that may be affected by any cumulative impacts (refer to any background studies in appendices—note such studies may be required over several seasons). It should be explained how the environmental values were derived (e.g. by citing published documents or by following a recognised procedure to derive the values).	Y	20B.3, 20B.4
• **Impact on environmental values**—describe quantitatively and/or qualitatively the likely impact of the proposal on the identified environmental values of the area. The cumulative impacts of the proposal must be considered over time or in combination with other (all) impacts in the dimensions of scale, intensity, duration or frequency of the impacts. In particular, any requirements and recommendations of the relevant state planning policies, environmental protection policies, national environmental protection measures and integrated catchment management plans should be addressed.	Y	20B.5
Cumulative impacts on the environmental values of land, air and water and cumulative impacts on public health and the health of terrestrial, aquatic and marine ecosystems must be discussed in the relevant sections. This assessment may include air and water sheds affected by the proposal and other proposals competing for use of the local air and water sheds.		
Where impacts from the proposal will not be felt in isolation to other sources of impact, it is recommended that the proponent develop consultative arrangements with other industries in the proposal's area to undertake cooperative monitoring and/or management of environmental parameters. Such arrangements should be described in the EIS.		
• **Environmental protection objectives**—describe qualitatively and quantitatively the proposed objectives for enhancing or protecting each environmental value. Include proposed indicators to be monitored to demonstrate the extent of achievement of the objective as well as the numerical standard that defines the achievement of the objective (this standard must be auditable). The measurable indicators and standards can be determined from legislation, support policies and government policies as well as the expected performance of control strategies. Objectives for progressive and final rehabilitation and management of contaminated land should be included.		
• **Control strategies to achieve the objectives**—describe the control principals, proposed actions and technologies to be implemented that are likely to achieve the environmental protection objectives; include designs and relevant performance specifications of plant. Details are required to show that the expected performance is achievable and realistic.		
• **Monitoring programs**—describe the monitoring parameters, monitoring points, frequency, data interpretation and reporting proposals.		
• **Auditing programs**—describe how progress towards achievement of the objectives will be measured, reported and whether external auditors will be employed. Include scope, methods and frequency of auditing proposed.		
• **Management strategies**—describe the strategies to be used to ensure the environmental protection objectives are achieved and control strategies implemented e.g. continuous improvement framework including details of corrective action options, reporting (including any public reporting), monitoring, staff training, management responsibility pathway, and any environmental management systems and how they are relevant to each element of the environment.		
• **Information quality**—information given under each element should also state the sources of the information, how recent the information is, how any background studies were undertaken (e.g. intensity of field work sampling), how the reliability of the information was tested, and what uncertainties (if any) are in the information.		
It is recommended that the final TOR and the EIS reasonably reflect the heading structure shown below. The mitigation measures, monitoring programs, etc., identified in this section of the EIS should be used to develop the EMP for the project (see section 4).		
3.1 Climate and natural disasters		
This section should describe the rainfall patterns (including magnitude and seasonal variability of rainfall), air temperatures, humidity, wind (direction and speed) and any other special factors (e.g. temperature inversions) that may affect management of the project.	Y	7.3 - 7.6
Historic weather patterns in the project area and seasonal conditions (e.g. cyclones, thunderstorms, floods and storms) that may influence timing and/or construction methods should be discussed, including how this would be managed. Extremes of climate (e.g. droughts, floods, etc) should be discussed with particular reference to water management at the project site.	Y	7.7

The potential impacts due to climatic factors should be addressed in the relevant sections of the EIS. The impacts of rainfall on soil erosion should be addressed in section 3.2. The impacts of storm events on the capacity of waste containment systems (e.g. site bunding / stormwater management and tailings dams) should be addressed in section 3.7 with regard to contamination of waterways and in section 3.4 with regard to the design of the waste containment systems. The impacts of winds, rain, humidity and temperature inversions on air quality should be addressed in section 3.5.		
The implications of climate change on the project's environmental and commercial feasibility should be assessed in detail.		
Impacts of climate change risks and adaptation measures should include the following:		
• analyse risks to the project from climate change impacts (i.e. increased risk and severity of flood; increased vulnerability to more intense bushfires		
• identify adaptation measures to minimise risk to the project from climate change impacts, particularly where there may be a significant impact to human safety or property.		
The vulnerability of the area to natural or induced hazards, such as bushfires and earthquakes should be addressed. The relative frequency and magnitude of these events should be considered together with the risk they pose to the construction and operation of the project. Hazard and risk assessment and management should be provided in section 3.14.		
3.2 Land		
This section describes the existing environment values of the land area that may be affected by the project. It should also define and describe the objectives and practical measures for protecting or enhancing land-based environmental values, describe how nominated quantitative standards and indicators may be achieved, and how the achievement of the objectives will be monitored, audited and managed.		
3.2.1 Topography and geomorphology		
3.2.1.1 Description of environmental values		
Maps should be provided locating the project in both regional and local contexts. The topography of the project site should be detailed with contours at suitable increments, shown with respect to Australian Height Datum. Commentary on the maps should be provided highlighting the significant topographical features.	Y	9.3.1, 9.3.3 and Figure 9-3-V2.3
The environmental values of the cultural landscapes of the affected area, in terms of the physical and cultural integrity of the area, should be described.	Y	20B.1.2
3.2.1.2 Potential impacts and mitigation measures		
The potential impacts of the landscape character of the project site and the surrounding area should be described. Particular mention should be made of any changes to the broad-scale topography and vegetation character of the area, such as due to spoil dumps, excavated voids and broad-scale clearing.	Y	9.5.1
Details should be provided of measures to be undertaken to mitigate or avoid the identified impacts.	Y	9.6.1
3.2.2 Geology		
3.2.2.1 Description of environmental values		
The EIS should provide a description, map and a series of cross-sections of the geology of the mine site, with particular reference to the physical and chemical properties of surface and sub-surface materials and geological structures within the proposed areas of disturbance. The general suitability of the mine site overburden material for road building (or other productive use) should be discussed briefly.	NA	
Geological properties of all project sites which may influence stability, occupational health and safety, rehabilitation programs, or the quality of waste water leaving any area disturbed by the project should be described.	Y	9.3.2, 9.3.5
Investigations into the physical, geo-mechanical and chemical properties of waste rock in both fresh and weathered forms needs to be determined for slope stability, rehabilitation and possible acid generation for waste rock dump design.	NA	
This section should also consider the geology underlying the proposed infrastructure corridors for coal transport, electricity easements, pipeline easements and other off-mine infrastructure. Of particular interest are any other possible coal, petroleum, gas or other mineral resources that may be impacted or sterilised by the infrastructure.	Y	9.3.2, 9.3.5, Figure 9-4-V1.3
The EIS should provide a summary of the results of studies and surveys undertaken to identify and delineate the coal and mineral resources within the project area (including any areas underlying related infrastructure).	Y	9.3.4
The location, tonnage and quality of the coal resources within the project area should be described in detail and, where possible, should be presented on a 'seam by seam' basis and include the modifying factors and assumptions made in arriving at the estimates. The resources should be estimated and reported in accordance with the Australasian code for reporting of mineral resources and ore reserves (the JORC Code available at www.jorc.org/main.php) and the principles outlined in the *Australian guidelines for the estimating and reporting of inventory coal, coal resources and coal reserves* (available at www.jorc.org/pdf/coalguidelines.pdf) as appropriate.	NA	
3.2.2.2 Potential impacts and mitigation measures		
The EIS should analyse the effectiveness of the mining proposal in achieving the optimum utilisation of the coal resources within the project area and consider its impacts on other resources. It should demonstrate that the mining proposal will 'best develop' the coal resources, minimise resource wastage and avoid any unnecessary sterilisation or loss of these or any other of the state's coal, mineral, and petroleum (including gas and coal seam methane) resources that may be impacted upon or sterilised by the mining activities or related infrastructure.	NA	
If geological conditions are conducive, the proponent should consider the possibility that significant fossil specimens (such as of dinosaurs or their tracks) may be uncovered during construction/operations and propose strategies for protecting the specimens and alerting the Queensland Museum to the find.	Y	9.5.4
3.2.3 Soils		
3.2.3.1 Description of environmental values		
A soil survey of the sites affected by the project should be conducted at a suitable scale, with particular reference to the physical and chemical properties of the materials that will influence erosion potential, storm water run-off quality, rehabilitation and agricultural productivity of the land. Information should also be provided on soil stability, suitability for construction of proposed facilities and any approved soil conservation plans.	Y	9.3.6, 9.6.3
Soil profiles should be mapped at a suitable scale and described according to the *Australian soil and land survey field handbook* (McDonald et al, 1990) and *Australian soil classification* (Isbell, 1996). An appraisal of the depth and quality of useable soil should be undertaken. Information should be presented according to the standards required in the *Planning guidelines: the identification of Good Quality Agricultural Land* (DPI & DHLGP, 1993), and the State Planning Policy 1/92: Development and the Conservation of Agricultural Land (DME, 1995).	Y	9.2.3, 9.2.4, 9.3.6, 9.6.3
The requirement for soils mapping in terms of area and mapping scale should follow the *Queensland Department of Mines and Energy: Technical Guidelines for Environmental Management of Exploration and Mining in Queensland* (1995). These guidelines recommend that disturbed areas be mapped more intensively than non-disturbed areas and provide guidance on acceptable mapping scale and site intensity.	Y	9.2.4
3.2.3.2 Potential impacts and mitigation measures		
Possible erosion rates and management techniques should be described for all permanent and temporary landforms. The erosion potential (wind and water) and erosion management techniques should be outlined for each soil type identified. An erosion-monitoring program, including rehabilitation measures for erosion problems identified during monitoring, should also be outlined. Mitigation strategies should be developed to achieve acceptable soil loss rates, levels of sediment in rainfall runoff and wind-generated dust concentrations.	Y	9.5.3, 9.6.3
The EIS should include an assessment of likely erosion effects for all disturbed areas such as:		
• areas cleared of vegetation	Y	9.6.3
• waste dumps	NA	
• stockpiles	NA	
• dams, banks and creek crossings	NA	
• the plant site, including buildings	NA	
• access roads or other transport corridors	Y	9.6.3
• areas under rehabilitation.	Y	9.6.3

Methods proposed to prevent or control erosion should be specified and should be developed with regard to preventing soil loss in order to maintain land capability / suitability, and preventing significant degradation of local waterways by suspended solids.	Y	9.6.3
Consideration should be given to the amendment or revocation of any approved soil conservation plans as a result of project activities.	Y	9.6.3
3.2.4 Land use		
3.2.4.1 Description of environmental values		
The EIS should provide a description of current land tenures, current land uses and identify the areas covered by Native Title claims in all project areas, with particular mention of land with special purposes.	Y	8.3.1, 8.3.2, 8.3.3
The location and owner/custodians of all tenures, reserves, roads and road reserves, railways and rail reserves, stock routes and the like, covering the affected land should be shown on maps of a suitable scale. Indicate locations of gas and water pipelines, power lines and any other easements. The environmental values affected by this infrastructure should be described.	Y	8.3.3, Figures 8-2-V2.3, 8-3-V2.3, 8-4-V2.3
A map at a suitable scale showing existing land uses and tenures, and the proposed mine and coal handling locations, should be provided for the entire project area and surrounding land that could be affected by the development. This map should identify areas of conservation value in this zone. The location of existing dwellings and the zoning of all affected lands according to any existing town or strategic plan should be included.	Y	8.3, Figures 8-2-V2.3, 8-3-V2.3, 8-4-V2.3
The land use suitability of the affected area in terms of the physical and economic attributes should be described. The assessment should set out soil and landform subclasses assigned to soil mapping units in order to derive land suitability classes. The limitations and land suitability classification system to use is that in Attachment 2 of *Land Suitability Assessment Techniques in the Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland* (1995).	Y	8.3.5, 9.3.7
A land suitability map of the proposed and adjacent area should be provided, setting out land suitability and current land uses, e.g. for grazing of native and improved pastures and horticulture. Land classified as good quality agricultural land in the Department of Natural Resources' land classification system should be shown in accordance with the planning guideline, The Identification of Good Quality Agricultural Land, which supports State Planning Policy 1/92.	Y	8.3.3, 8.3.5
3.2.4.2 Potential impacts and mitigation measures		
The potential for the construction and operation of the project to change existing and potential land uses of the project site and adjacent areas should be detailed. Consideration should be given to impacts arising from property disruption and severance, construction and maintenance. Post operations land use options should be detailed including suitability of the area to be used for agriculture, industry, or nature conservation. The factors favouring or limiting the establishment of those options should be given in the context of land use suitability prior to the project and minimising potential liabilities for long-term management.	Y	Chapter 8, Chapter 9, Chapter 17A
The potential environmental harm caused by the project on the adjacent areas currently used for agriculture, urban development, recreation, tourism or other business and the implications of the project for future developments in the impact area including constraints on surrounding land uses should be described. If the development adjoins or potentially impacts on good quality agricultural land, then an assessment of the potential for land use conflict is required. Investigations should follow the procedures set out in the planning guideline, The Identification of Good Quality Agricultural Land, which supports State Planning Policy 1/92.	Y	8.5.3, 9.3.7
Incompatible land uses, whether existing or potential, adjacent to all aspects of the project, including essential and proposed ancillary developments or activities and areas directly or indirectly affected by the construction and operation of these activities should be identified and measures to avoid unacceptable impacts defined.	Y	8.6, also Volume 1 Chapter 28
3.2.5 Landscape character and visual amenity		
3.2.5.1 Description of environmental values		
This section should describe in general terms the existing character of the landscape that will be affected by the project. It should comment on any changes that have already been made to the natural landscape since European settlement. It should describe the general impression of the landscape that would be obtained while travelling through and around it.	Y	19.3
This section should also describe existing landscape features, panoramas and views that have, or could be expected to have, value to the community whether of local, regional, state-wide, national or international significance. Information in the form of maps, sections, elevations and photographs should be used, particularly where addressing the following issues:	Y	19.3.2
• identification of elements within the proposal and surrounding area that contribute to their image of the town/city as discussed in the any local government strategic plan—city image and townscape objectives and associated maps	N/A	
• major views, view sheds, existing viewing outlooks, ridgelines and other features contributing to the amenity of the area	Y	19.3.2
• focal points, landmarks (built form or topography), gateways associated with project site and immediate surrounding areas, waterways, and other features contributing to the visual quality of the area and the project site	Y	19.3.2
• character of the local and surrounding areas including character of built form (scale, form, materials and colours) and vegetation (natural and cultural vegetation) directional signage and land use	Y	19.3.2
• identification of the areas of the proposal that have the capacity to absorb land use changes without detriment to the existing visual quality and landscape character	Y	19.4, 19.4.1
• the value of existing vegetation as a visual screen.	NA	
3.2.5.2 Potential impacts and mitigation measures		
The potential impacts of the project landscape character of the site and the surrounding area should be described. Particular mention should be made of any changes to the broad-scale topography and vegetation character of the area, such as due to spoil dumps, excavated voids and broad-scale clearing. Details should be provided of measures to be undertaken to mitigate or avoid the identified impacts.	Y	19.5.1, impacts; all 19.6
This section should analyse and discuss the visual impact of the project on particular panoramas and outlooks. It should be written in terms of the extent and significance of the changed skyline as viewed from places of residence, work, and recreation, from road, cycle and walkways and other known vantage points day and night, during all stages of the project as it relates to the surrounding landscape. The assessment is to address the visual impacts of the project structures and associated infrastructure, using appropriate simulation. Sketches, diagrams, computer imaging and photos are to be used where possible to portray the near views and far views of the completed structures and their surroundings from visually sensitive locations.	Y	19.5.2, photo montages; 19.5.4
Special consideration is to be given to public roads, public thoroughfares, and places of residence or work, which are within the line-of-sight of the project.	Y	19.6.10
Details of the design and colour of any major structures, buildings or fixed plant and all proposed screenings either vegetative or material should be described and discussed where relevant to the minimisation of the visual impacts of the project. Consideration should be given to a landscaped screen / buffer between the mine site and the town of Wandoan to mitigate any negative visual impacts. Where plantings for screening or landscaping are proposed, details should be provided of the species that will be used, and their likely provenance. Preference should be given to species native to the area.	NA	
The obstruction of sunlight due to the construction of buildings or alteration of landforms should be considered, as well as major illumination or reflection impacts on adjacent properties or roads.	NA	
Detail should be provided of all management options to be implemented and how these will mitigate or avoid the identified impacts.	Y	All 19.6
Management of the lighting of the project, during all stages, is to be provided, with particular reference to objectives to be achieved and management methods to be implemented to mitigate or avoid:	NA	
• the visual impact at night	NA	
• night operations/maintenance and effects of lighting on fauna and residents	NA	
• the potential impact of increased vehicular traffic	NA	
• changed habitat conditions for nocturnal fauna and associated impacts.	NA	
3.2.6 Land contamination		

3.2.6.1 Description of environmental values		
This section should discuss the potential for land contamination within the project area from existing and past uses, based on known land use history and the nature and concentrations of any contaminants. The review should identify land within the proposed mine, associated infrastructure corridors and any other areas affected by the proposed works, which has been used, or is being used, for a Notifiable Activity as listed in Schedule 2 of the EP Act, or is potentially contaminated, or is on the environmental management register or contaminated land register.	Y	8.3.4
The EIS should include a preliminary site investigation for all properties that have been impacted by existing and past land uses that could have resulted in land contamination.	Y	8.3.4
3.2.6.2 Potential impacts and mitigation measures		
The EIS should discuss the management of any contaminated land and potential for contamination from construction, commissioning and operation, in accordance with EPA's Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland (1998) and the *National Environment Protection (Assessment of Site Contamination) Measure 1999*.	Y	8.5.4, 8.6.4
The EIS should also describe the possible contamination of land from aspects of the project, including waste, saline water from coal seam gas extraction used for dust suppression, reject coal, overburden, coal washing plant and spills at chemical and fuel storage and handling areas.	NA	
This section should describe strategies and methods to be used to prevent and manage any land contamination resulting from the project, including the management of any acid generation or saline impacts from the mining activities and the management of chemicals and fuels to prevent spills or leaks.	Y	8.6.4
3.2.7 Land disturbance		
3.2.7.1 Potential impacts and mitigation measures		
The EIS should contain strategies aimed at minimising the amount of land disturbed at any one time. The strategic approach to progressive rehabilitation and final decommissioning should be described. The consistency of the approach with relevant guidelines and the results of recent research should be described.	Y	25.2.1
Management of all dams, roads, rail, electricity and other infrastructure during construction operation and decommissioning phases should be described in detail.	Y	Chapter 6
The methods to be used for the project, including backfilling, covering, re-contouring, topsoil handling and revegetation, should be described. Consideration should be given to the use of threatened plant species during any landscaping and revegetation.	Y	25.2.1, 9.6.3
Proposals should be provided to divert creeks during construction or operations, and, if applicable, for the reinstatement of the creeks. Where dams and roads and other infrastructure are to be constructed, proposals for the management of these structures after the completion of the project should be given. A contour map of the area should be provided (if relevant). Also, the final drainage and seepage control systems and any long-term monitoring plans should be described.	NA	
Proposed decommissioning of project operations should be described in detail, including consolidation, revegetation, fencing, and monitoring. Discussion of any decommissioning works should address rehabilitation of concrete footings and foundations, hard stand areas and storage tanks (including any potential for reuse of these facilities).	Y	25.2.2
A description of topsoil management should consider transport, storage and replacement of topsoil to disturbed areas. The topsoil management should also outline how soil from good quality agricultural land will be best utilised. The minimisation of topsoil storage times (to reduce fertility degradation) should also be addressed. Erosion and sediment control measures should be described, particularly in relation to the management of sodic and saline overburden material.	Y	9.6.3
3.3 Nature conservation		
This section describes the existing environment values for nature conservation that may be affected by the project. Describe the environmental values of nature conservation for the affected area in terms of:		
• integrity of ecological processes, including habitats of rare and threatened species and ecological communities	Y	17A.3; 17B.3
• conservation of resources	Y	17A.3; 17B.3
• biological diversity, including habitats of rare and threatened species	Y	17A.3; 17B.3
• integrity of landscapes and places including wilderness and similar natural places	Y	17A.3; 17B.3
• aquatic and terrestrial ecosystems.	Y	17A.3; 17B.3
A discussion should be presented on the nature conservation values occurring in the areas likely to be affected by the project, both directly and indirectly.	Y	17A.3; 17B.3
The flora and fauna communities which are rare or threatened, environmentally sensitive localities including waterways (permanent, semi-permanent and ephemeral), riparian zone, wilderness and habitat corridors should be described.	Y	17A.3; 17B.3
The description should include a plant species list, a vegetation map at appropriate scale and an assessment of the significance of native vegetation, from local, regional, state and national perspectives.	Y	17A.3; 17B.3
The description should indicate any areas of state or regional significance identified in an approved biodiversity planning assessment produced by the EPA including matters of NES identified within the EPBC Act.	Y	17A.3; 17B.3
3.3.1 Sensitive environmental areas		
3.3.1.1 Description of environmental values		
The EIS should identify areas that are environmentally sensitive in proximity to the project. Environmentally sensitive areas should also include areas classified as having national, state, regional or local biodiversity significance, or flagged as important for their integrated biodiversity values. Consideration should be given to nature refuges, national parks, conservation parks, declared fish habitat areas, wilderness areas, aquatic reserves, heritage/historic areas or items relating to biodiversity, national estates, world heritage listings and sites covered by international treaties or agreements (e.g. Ramsar, Japan-Australia Migratory Bird Agreement, China-Australia Migratory Bird Agreement, Republic of Korean-Australia Migratory Bird Agreement), areas of cultural significance relating to biodiversity and scientific reserves.	Y	20B.5.1, 17A.2, 17B.2.1
The proximity of the project to any environmentally sensitive areas should be shown on a map of suitable scale. Areas that would be regarded as sensitive with regard to flora and fauna have one or more of the following features:		
• important habitats of species listed under the Nature Conservation Act 1992 and/or the EPBC Act as presumed extinct, critically endangered, endangered, vulnerable or rare	Y	17A.3.3, 17B.2.1
• regional ecosystems recognised by the EPA as 'endangered' or 'of concern' or 'not of concern' but where permits are no longer granted due to being at threshold levels, and/or ecosystems listed as 'presumed extinct', 'critically endangered' 'endangered' or 'vulnerable' under the EPBC Act	Y	17A.3.3
• ecosystems that provide important ecological functions, such as riparian vegetation, important buffer to a protected area, refugia or important habitat corridor between areas	Y	17A.3.3
• protected areas which have been proclaimed under the *Nature Conservation Act 1992* or are under consideration for proclamation.	Y	17A.3
3.3.1.2 Potential impacts and mitigation measures		
This section should discuss the following:		
• the impact of the project on species, communities and habitats of local, regional or national significance	Y	17A.4, 17B.5.7
• proposals to mitigate impacts (e.g. timing of works, minimise width of disturbance, proposed rehabilitation of in-stream and floodplain disturbances)	Y	17A.5.2; 17B.6
• planned rehabilitation of vegetation communities and any relevant previous experience/experiments rehabilitating these communities	Y	17A.5.2; 17B.6.2; 17B.6.3
• appropriate mitigation measures for remnant ecosystems that may be affected by the project should refer to the Regional Vegetation Management Code: Brigalow Belt and New England Tablelands (20 November 2006), and address the Policy for Vegetation Management Offsets (DNRW 2007)	Y	17A.6.1
• offsets relating to residual impacts with regard to the Queensland Government Environmental Offsets Policy, the Policy for Vegetation Management Offsets as well as the draft policy statement on the use of environmental offsets under the EPBC Act.	Y	17A.6.1

Potential impacts and associated mitigation measures should be discussed further under section 3.3.4 Aquatic biology, and section 3.4 Water resources.		
3.3.2 Terrestrial flora		
3.3.2.1 Description of environmental values		
The terrestrial vegetation communities within the affected areas should be described at an appropriate scale with mapping produced from aerial photographs and ground truthing, showing the following:		
• location and extent of vegetation types including recognised regional ecosystem type descriptions and any areas of national, state or regional significance	Y	17A.3.3
• location of vegetation types of conservation significance	Y	17A.3.3
• vegetation map unit descriptions, including their relationship to regional ecosystems. Sensitive or important vegetation types should be highlighted and their value as habitat for fauna and conservation of specific rare floral and faunal assemblages or community types discussed	Y	17A.3.3, 17A.3.4, 17A.3.5, 17A.3.6, 17A.3.7, 17A.4.9
• the current extent (bioregional and catchment) of protected vegetation types of conservation significance within the protected areas (e.g. national parks, conservation parks, resource reserves, nature refuges)	Y	17A.4.9
• any plant communities of cultural, commercial or recreational significance	Y	17A.4.8.
• the distribution and abundance of significant exotic and weed species.	Y	17A.3.4, 17A.4.3, 17A.4.5
The description should contain a review of published information regarding the assessment of the significance of the vegetation to conservation, recreation, scientific, educational and historical interests. The assessment should also include a description of vegetation (including re-growth and restored areas in addition to remnant vegetation) to indicate any areas of state, regional or local significance identified in the Brigalow Belt Biodiversity Planning Assessment version 1.3 produced by the EPA.	Y	17A.4.9
For each significant natural vegetation community likely to be impacted by the project, vegetation surveys should be undertaken at an appropriate number of sites, allowing for seasonal factors, as follows:	Y	17A.2, 17A.5.3
• all data requirements of the Queensland Herbarium CORVEG database should be collected	Y	17A3.3
• appropriate minimum site sizes should be selected, observing recognised sampling approaches and to provide an adequate sample of surveyed communities	Y	17A.2
• a list of species present at each site should be recorded	Y	17A3.3, Table 17A-1
• the relative abundance and community structure of plant species present should be recorded	Y	17A.3
• any plant species of conservation, cultural, commercial or recreational significance should be identified	Y	17A.3
• vegetation mapping and data should be submitted to the Queensland Herbarium to assist the updating of the CORVEG database	N/A	TBA
• specimens of species listed as protected plants under the *Nature Conservation (Wildlife) Regulation 1994,* other than common species, are to be submitted to the Queensland Herbarium for identification and entry into the HERBRECS database.	N/A	TBA
The existence of rare or threatened species should be specifically addressed under sensitive areas. Any special landscape values of natural vegetation communities should be described.	Y	17A.3.4
Existing information on plant species may be used instead of new survey work provided that the data are derived from surveys consistent with the above methodology and describe existing conditions. Methodology used for flora surveys should be specified in the appendices to the report. Any existing information should be revised and comments provided on whether the areas are degraded, cleared or affected in ways that would affect their environmental value.	Y	17A.2
The occurrence of pest plants (weeds), particularly declared plants under the *Land Protection (Pest and Stock Route Management) Act 2002* should be shown on a map at an appropriate scale. A weed management strategy will be required.	Y	17A.3.4
The location of any horticultural crops in the vicinity of the project area should be shown.	NA	
3.3.2.2 Potential impacts and mitigation measures		
This section should discuss all foreseen direct and indirect effects on terrestrial flora and the potential level of environmental impact identified. Action plans for protecting rare or threatened species and vegetation types identified as having high conservation value should be described, and any obligations imposed by state or federal government biodiversity protection legislation or policy should be discussed.	Y	17A.4, 17A.5
Construction and operation of the project involving clearing, salvaging or removal of vegetation should be described, and indirect impacts on vegetation not cleared should be discussed.	Y	17A.4.1, 17A.4.2, 17A.4.3, 17A.4.4, 17A.4.5, 17A.4.6, 17A.4.7, 17A.4.8
Impacts during construction and operation of the project should be assessed.	Y	17A.4
The number of hectares of remnant vegetation proposed to be cleared (by conservation status and regional ecosystem type) for the mine and each proposed infrastructure component should be identified.	Y	17A.4.1
These figures should be discussed in terms of the long-term sustainability of these ecosystems to remain in the landscape at a regional level.	Y	17A.4.1
Short- and long-term durations should be considered.	Y	17A.5.2
Measures to mitigate the impacts of the project on vegetation types identified as having high conservation values, listed species and sensitive habitat or the inhibition of propagation should be described. This should also include the identification of potential offset areas, in an 'offset strategy' to compensate for any loss of vegetation.	Y	17A.5.2, 17A.6.1
With regard to the project area, this section should include:		
• the significance of impacts at a local, catchment, bioregional, state or national levels	Y	17A.6, 17A.7
• impact on any plants of potential or recognised environmental or economic significance	Y	17A.4, 17A.6, 17A.7
• a discussion of the ability of identified stands of vegetation to withstand any increased pressure resulting from the project and identify measures proposed to mitigate impacts	Y	17A.4.1, 17A.4.2, 17A.4.3, 17A.4.4, 17A.4.5, 17A.4.7
• a description of the methods to ensure rapid rehabilitation of disturbed areas following construction, including the species chosen for revegetation which should be consistent with the surrounding associations. Details of any post construction monitoring programs and what benchmarks would be used for review of monitoring should be included. Consideration should be given to the establishment of reference sites (at least two for each ecosystem type being rehabilitated) that could be established and monitored to provide benchmarking for rehabilitation activities	Y	17A.5.2
• a draft weed management plan should be included in an EMP, to be developed and finalised in consultation with land protection officers (DPI&F) and local government environmental officers, to cover construction, rehabilitation and operation periods	Y	17A.4.5, 17A.5
• a description of the potential for the introduction and/or spread of weeds (such as Parthenium, African Box Thorn and Mother of Millions) or plant disease, including:	Y	17A.4.5, 17A.5.2
– identification of the origin of construction materials, machinery and equipment	Y	17A.4.5, 17A.5.3
– vehicle inspection regime, which addresses the need for vehicle and machinery wash-down and any other hygiene protocols, including the requirement that all vehicles and equipment must be cleaned before starting the job and that these wash down areas contain water/ soil away from creeks and gullies	Y	17A.4.5, 17A.5.4
– staff/operator education programs	Y	17A.4.5, 17A.5.5
– determination of the potential for the introduction of or facilitation of exotic, non-indigenous and noxious plants.	Y	17A.4.5, 17A.5.6
3.3.3 Terrestrial fauna		
3.3.3.1 Description of environmental values		
The terrestrial, and riparian fauna occurring in the areas affected by the project should be described, noting the broad distribution patterns in relation to vegetation, topography and substrate. Wildlife corridors and refugia should be identified and mapped.	Y	17A.3.5
The description of the fauna present or likely to be present in the area should include:		
• species diversity (i.e. a species list) and indicative abundance of animals, including amphibians, birds, reptiles, mammals (including bats)	Y	17A.3.6
• any species that are poorly known but suspected of being rare or potentially threatened	NA	
• habitat requirements and sensitivity to changes; including movement corridors and barriers to movement	Y	17A.3.5, 17A.4.2

• the existence of feral or exotic animals, including maps of major pest infestations	Y	17A.4.5
• existence of any rare, threatened or otherwise noteworthy species/communities in the study area, including discussion of range, habitat, breeding, recruitment, feeding and movement requirements, and current level of protection (e.g. any requirements of protected area management plans)	Y	17A.3.6, 17A.3.7
• use of the area by migratory and nomadic birds in particular areas for breeding or significant congregations.	N/A	
The EIS should contain results from surveys for species listed as threatened or migratory under the EPBC Act. Surveys are to be conducted at the appropriate time of the year when the species is known to be present on the site, so that identification and location of these species is optimal.	Y	Table 17A-6
Methodology used for fauna surveys should be specified in the appendices to the report. The EIS should indicate how well any affected significant communities and species are represented and protected elsewhere in the region where the site of the project occurs. Relevant site data should be provided to the EPA in a format compatible with EPA WildNet database for listed threatened species.	Y	17A.2, 17A.6, 17A.5.3
3.3.3.2 Potential impacts and mitigation measures		
This section should discuss all foreseen direct and indirect effects on terrestrial fauna. Strategies for protecting rare or threatened species should be described, and any obligations imposed by state or federal government threatened species legislation or policy should be discussed.	Y	17A.4.1, 17A.4.2
Any recovery plans for potentially affected threatened species should be outlined, and strategies for complying with the objectives and management practices of relevant recovery plans should be described.	NA	
In particular, specific reference should be made to the recovery plan for the EPBC Act listed critically endangered Boggomoss Snail (Adclarkia dawsonensis).	NA	
Impacts during construction and operation of the project should be assessed.	Y	17A.4
Given the critically endangered status of the Boggomoss Snail, the risk of elimination of any local population must be carefully evaluated.	NA	
If the evaluation indicates that translocation of such a population would be the only means of avoiding the loss, a translocation trial, under the supervision of the recovery team for the species, should be undertaken to determine the feasibility of translocation.	Y	17A.5.2
In order to demonstrate that translocation had been successful, at least 70 per cent survival rate would need to be achieved. Short- and long-term durations should be considered.	Y	17.A.5.2
Measures to mitigate the impact on habitat or the inhibition of normal movement, breeding or feeding patterns, and change to food chains should be described.	Y	17A.5.2
Any provision for buffer zones and movement corridors, or special provisions for migratory or nomadic animals should be discussed.	Y	17A.5.1, 17A.5.2
With regard to terrestrial and riparian fauna, the assessment of potential impact should consider:	Y	17A.5.1, 17A.5.2
• impacts the project may have on terrestrial fauna, relevant wildlife habitat and other fauna conservation values, including:		
– direct (short-term) and indirect (long-term) impacts due to loss of range/habitat, food supply, nest sites, breeding/recruiting potential or movement corridors	Y	17.A.4
– cumulative effects of direct and indirect impacts	Y	17A.4.1, 17A.4.2, 17A.4.3, 17A.4.4, 17A.4.5, 17A.4.6, 17A.4.7, 17A.4.8
– impacts on rare and threatened or otherwise noteworthy animal species	Y	17A.4.1, 17A.4.2, 17A.4.3, 17A.4.4, 17A.4.5, 17A.4.6, 17A.4.7, 17A.4.9
– threatening processes leading to progressive loss	Y	17A.4.1, 17A.4.2, 17A.4.3, 17A.4.4, 17A.4.5, 17A.4.6, 17A.4.7, 17A.4.10
– identification of the conservation importance of identified populations at the regional, state and national levels.	Y	17A.4.1, 17A.4.2, 17A.4.3, 17A.4.4, 17A.4.5, 17A.4.6, 17A.4.7, 17A.4.11
• measures to minimise wildlife capture and mortality during construction and operation	Y	17A.5.2
• details of the methodologies that would be used to avoid injuries to livestock and native fauna as a result of the project's construction and operational works, and if accidental injuries should occur the methodologies to assess and handle injuries	Y	17A.5.2
• methods for minimising the introduction of feral animals, and other exotic fauna such as declared pest ant species (fire ants and yellow crazy ants)	Y	17A.4.5, 17A.5.2
• review of control measures to prevent increases in local populations and spread of biting insect species of pest and health significance associated with construction activities and disposal of construction wastes.	NA	
These would also include, where relevant, matters of NES identified within the EPBC Act .	Y	17A.6.1
3.3.4 Aquatic biology		
3.3.4.1 Description of environmental values		
The aquatic flora and fauna occurring in the areas affected by the project should be described, noting the patterns and distribution in the waterways. A description of the habitat requirements and the sensitivity of aquatic flora and fauna species to changes in flow regime, water levels and water quality in the project areas should be provided. The discussion of the aquatic fauna and flora present or likely to be present in the project area at any time during the year should include:	Y	17B.3
The discussion of the fauna and flora present or likely to be present in the area should include:		
• fish species, mammals, reptiles, amphibians and aquatic invertebrates occurring in the waterways within the project area, including any feral and exotic fauna species	Y	17B.3.4, 17B.3.5, 17B.3.6
• an assessment of the biological values of the waterways affected the project in general and in the context of the Dawson River Catchment, and how these waterways contribute to the fisheries productivity of the catchment as a whole		
• aquatic (waterway) macrophytes including native and exotic/weed species	Y	17B.3.3
• wetlands listed by the EPA as areas of national, state or regional significance, and their values and importance	NA	
• a description of terrestrial species that are ecologically associated with wetlands or waterways and are likely to be affected by the project	N/A	
• aquatic substrate and stream type.	Y	17B.3.1
These would also include, where relevant, matters of NES identified within the EPBC Act.	Y	17B.2.1
3.3.4.2 Potential impacts and mitigation measures		
This section should discuss all foreseen direct and indirect effects on aquatic flora and fauna, including strategies for protecting rare or threatened species and any obligations, legislation or policies imposed by the state and federal governments. The discussion should include:	Y	17B.5.7, 17B.6
• measures to minimise wildlife injury and mortality during construction and operation	Y	17B.6.3
• details of the methodologies that would be used to avoid injuries to livestock and native fauna as a result of the project's construction and operational works, and if accidental injuries should occur the methodologies to assess and handle injuries	Y	17B.6.3
• details of measures to be used to maintain fish passage in creeks that will be affected	Y	17B.6.3, Appendix 17B.1.4
• methods for minimising the introduction of feral animals, and other exotic fauna	Y	17B.6.4
• review of control measures to prevent increases in local populations and spread of biting insect species of pest and health significance associated with construction activities and disposal of construction wastes	Y	17B.6.5
• identification of necessary permits/authorities required by the project	Y	17B.2.1
• description of mitigation measures to prevent the creation of new mosquito and biting midge breeding sites during construction (e.g. in quarries and borrow pits)	Y	17B.6.5
• description of the potential for and mitigation measures to prevent the introduction, transfer or facilitation of exotic, non-indigenous and noxious plants and water borne insect pests.	Y	17B.6.4

3.4 Water resources		
3.4.1 Description of environmental values		
This section describes the existing environment for water resources that may be affected by the project in the context of environmental values as defined in the Queensland water quality guidelines for region-specific parameter values, and such documents as the EP Act, Environmental Protection (Water) Policy 1997 (EPP (Water)) and ANZECC 2000. The definition of waters in the EPP(Water) includes the bed and banks of waters, so this section should address impacts on benthic sediments as well as the water column.	Y	11.2
Where a licence or permit will be required under the *Water Act 2000* to take or interfere with the flow of water, this section of the EIS should provide, where specific design information is available, sufficient information for a decision to be made on the application. Similarly, waterway barrier works may need approval under the *Fisheries Act 1994* , and if so should be addressed in the EIS.	NA	
3.4.1.1 Surface water and watercourses		
A description should be given of the permanent, semi-permanent and significant ephemeral surface watercourses in the area affected by the project, including their quality and quantity and an outline of the significance of these waters to the river catchment system in which they occur.	Y	11.3.1
Details provided should include a description of existing surface drainage patterns, and flows in major streams and wetlands.	Y	11.3.1, 11.3.2
Also provide details of the likelihood of flooding, history of flooding including extent, levels and frequency, and a description of present and potential water uses downstream of the areas affected by the proposal. Flood studies should include a range of annual exceedance probabilities for affected waterways, where data permits.	Y	11.3.4
The EIS should provide a description, with photographic evidence where appropriate, of the geomorphic condition of any watercourses likely to be affected by disturbance or stream diversion.	Y	11.3.3
The results of this description should form the basis for the planning and subsequent monitoring of rehabilitation of the watercourses during or after the operation of the proposal.	Y	11.6.1, 11.6.2
An assessment is required of existing water quality in surface waters and wetlands likely to be affected by the proposal. The basis for this assessment should be a monitoring program, with sampling stations located upstream and downstream of the proposal. Complementary stream-flow data should also be obtained from historical records (if available) to aid in interpretation.	Y	11.2.3
The water quality should be described, including seasonal variations or variations with flow where applicable. A relevant range of physical, chemical and biological parameters should be measured to gauge the environmental harm on any affected creek or wetland system.	Y	11.2.3
The EIS should describe the environmental values of the surface waterways of the affected area in terms of:		
• values identified in the EPP(Water)	Y	11.2.1
• sustainability, including both quality and quantity	Y	11.3.2
• physical integrity, fluvial processes and morphology of watercourses, including riparian zone vegetation and form	Y	11.3.3
• any water resource plans, land and water management plans relevant to the affected catchment.	NA	
3.4.1.2 Groundwater		
The EIS should review the quality, quantity and significance of groundwater in the project area, together with groundwater use in neighbouring areas. Specific reference should be made to the Great Artesian Basin Water Resource Plan (2006) and Great Artesian Basin Resource Operation Plans (2006).	Y	10.2
The review should also provide an assessment of the potential take of water from the GAB and how current users and the aquifer itself and any connected aquifers will be affected by the take of water from the GAB.	NA	
The review should include a survey of existing groundwater supply facilities (bores, wells, or excavations) to the extent of any environmental harm. The information to be gathered for analysis is to include:	Y	10.3.2
• location	Y	10.3.2
• pumping parameters	Y	10.3.2
• draw down and recharge at normal pumping rates	Y	10.3.2
• seasonal variations (if records exist) of groundwater levels.	Y	10.3.2
A network of observation points which would satisfactorily monitor groundwater resources both before and after commencement of operations should be developed.	NA	
This section should include reference to:		
• Nature of the aquifer(s):	Y	10.3.2
– geology/stratigraphy—such as alluvium, volcanic, metamorphic	Y	10.3.2
– aquifer type—such as confined, unconfined	Y	10.3.2
– depth to and thickness of the aquifers.	Y	10.3.2
• Hydrology of the aquifer(s):		
– depth to water level and seasonal changes in levels	Y	10.3.2
– groundwater flow directions (defined from water level contours)	Y	10.3.2
– interaction with surface water	Y	10.3.2
– interaction with sea/salt water	Y	10.3.2
– possible sources of recharge	Y	10.3.2
– vulnerability to pollution.	Y	10.3.2
The data obtained from the groundwater survey should be sufficient to enable specification of the major ionic species present in the groundwater, pH, electrical conductivity and total dissolved solids.	Y	10.3.3
Describe the environmental values of the underground waters of the affected area in terms of:		
• values identified in the EPP(Water)	Y	10.3
• sustainability, including both quality and quantity	Y	10.3
• physical integrity, fluvial processes and morphology of groundwater resources.	Y	10.3
3.4.2 Potential impacts and mitigation measures		
This section is to assess potential impacts on water resource environmental values identified in the previous section. It will also define and describe the objectives and practical measures for protecting or enhancing water resource environmental values, to describe how nominated quantitative standards and indicators may be achieved, and how the achievement of the objectives will be monitored, audited and managed.	Y	10.5, 10.6, 11.5, 11.6
The EIS should describe the possible environmental harm caused by the proposal to environmental values for water as expressed in the EPP(Water).	Y	11.5
Water management controls should be described, addressing surface and groundwater quality, quantity, drainage patterns and sediment movements. The beneficial (environmental, production and recreational) use of nearby surface and groundwater should be discussed, along with the proposal for the diversion of affected creeks during mining, and the stabilisation of those works. Monitoring programs should be described which will assess the effectiveness of management strategies for protecting water quality during the construction, operation and decommissioning of the project.	Y	10.6, 11.3.7, 11.6.1, 11.6.2
Key water management strategy objectives include:		
• protection of important local aquifers and protection of their waters	Y	10.6
• maintenance of sufficient quantity and quality of surface waters to protect existing beneficial downstream uses of those waters (including maintenance of in-stream biota and the littoral zone)	NA	
• management of impacts on flooding levels and frequencies both upstream and downstream of the project.	NA	
Conduct a risk assessment for uncontrolled emissions to water due to system or catastrophic failure, implications of such emissions for human health and natural ecosystems, and list strategies to prevent, minimise and contain impacts.	Y	11.5.2, 11.6.2
3.4.2.1 Surface water and water courses		

The potential environmental harm to the flow and the quality of surface waters from all phases of the project should be discussed, with particular reference to their suitability for the current and potential downstream uses, including the requirements of any affected riparian area, wetland, estuary, littoral zone, and any marine and in-stream biological uses. The impacts of surface water flow on existing infrastructure should be considered. Refer to the EPP(Water) and *Water Act 2000* .	Y	11.5
The hydrological impacts of the proposal should be assessed, particularly with regard to stream diversions, scouring and erosion, and changes to flooding levels and frequencies both upstream and downstream of the project. When flooding levels will be affected, modelling of afflux should be provided and illustrated with maps.	Y	11.5
Quality characteristics discussed should be those appropriate to the downstream and upstream water uses that may be affected. Chemical and physical properties of any waste water (including concentrations of constituents) at the point of entering natural surface waters should be discussed along with toxicity of effluent constituents to flora and fauna.	Y	11.2.3
Reference should be made to the properties of the land disturbed and processing liquid wastes, the technology for settling suspended clays from contaminated water, and the techniques to be employed to ensure that contaminated water is contained and successfully treated on the site.	Y	11.6
In relation to water supply and usage, and wastewater disposal, the EIS should discuss anticipated flows of water to and from the proposal area.	Y	11.5
Where dams, weirs or ponds are proposed, the EIS should investigate the effects of predictable climatic extremes (storm events, floods and droughts) on: the capacity of the water storages (dams, weirs, ponds), the ability of these storages to retain contaminants; the structural integrity of the containing walls; relevant operating regime and the quality of water contained, and flows and quality of water discharged.	NA	
The design of all water storage facilities should follow the technical guidelines on site water management.	NA	
The need or otherwise for licensing of any dams (including referable dams) or creek diversions, under the Water Act 2000 should be discussed. Water allocation and water sources, including impacts on existing water entitlements, including water harvesting, should be established in consultation with DNRW.	Y	11.3.7
Having regard for the requirements of the EPP(Water), the EIS should present the methods to avoid stormwater contamination by raw materials, wastes or products and present the means of containing, recycling, reusing, treating and disposing of stormwater. Where no-release water systems are to be used, the fate of salts and particulates derived from intake water should be discussed.	Y	11.5
The Australian and New Zealand Environment and Conservation Council (ANZECC, 2000) *National Water Quality Management Strategy, Australian Water Quality Guidelines for Fresh and Marine Waters* and the EPP(Water) should be used as a reference for evaluating the effects of various levels of contamination.	Y	11.2.3
Options for mitigation and the effectiveness of mitigation measures should be discussed with particular reference to sediment, acidity, salinity and other emissions of a hazardous or toxic nature to human health, flora or fauna.	Y	11.6
Where it is proposed that creeks will be diverted, the EIS should detail how rehabilitation will affect both the physical and ecological condition of the creek's bed and banks and the quality of water in it. Furthermore, the EIS should describe the monitoring that will be undertaken after decommissioning, and who will have responsibility for management measures and corrective action, to ensure that rehabilitated creeks do not degrade.	Y	11.6.2
3.4.2.2 Groundwater		
The EIS should include an assessment of the potential environmental impact caused by the project (and its associated project components) to local groundwater resources, including the potential for groundwater induced salinity.	Y	10.5
The impact assessment should define the extent of the area within which groundwater resources are likely to be affected by the proposed operations and the significance of the project to groundwater depletion or recharge, and propose management options available to monitor and mitigate these effects. The response of the groundwater resource to the progression and finally cessation of the proposal should be described.	Y	10.5
An assessment should be undertaken of the impact of the project on the local ground water regime caused by the altered porosity and permeability of any land disturbance.	NA	
Any potential for the project to impact on groundwater dependent vegetation should be assessed and described. Avoidance and mitigation measures should be described.	Y	10.5.2
An assessment of the potential to contaminate groundwater resources and measures to prevent, mitigate and remediate such contamination should be discussed.	Y	10.6
3.5 Air		
3.5.1 Description of environmental values		
This section describes the existing air environment that may be affected by the project.		
A description of the existing air shed environment should be provided having regard for particulates, gaseous and odorous compounds. The background levels and sources of suspended particulates, SO_x, NO_x, and any other major constituent of the air environment that may be affected by the project should be discussed.	Y	Section 13.3.1
Sufficient data on local meteorology and ambient levels of pollutants should be gathered to provide a baseline for later studies or for the modelling of air quality environmental harms within the air shed. Parameters should include air temperature, wind speed and direction, atmospheric stability, mixing depth and other parameters necessary for input to the models.	Y	Section 13.3.1
3.5.1.1 Greenhouse gas emissions	Y	Section 13.3.1
This section of the EIS should:		
• provide an inventory of projected annual emissions for each relevant greenhouse gas, with total emissions expressed in CO_2 equivalent terms		Refer Volume 1
• estimate emissions from upstream activities associated with the proposed project, including fossil fuel based electricity consumed		
• briefly describe method(s) by which estimates were made.		
Coal mining projects should include estimates of coal seam methane to be released as well as emissions resulting from such activities as transport of products to rail, and energy use by the project.		
3.5.2 Potential impacts and mitigation measures		
This section defines and describes the objectives and practical measures for protecting or enhancing environmental values for air, to describe how nominated quantitative standards and indicators may be achieved, and how the achievement of the objectives will be monitored, audited and managed.	NA	Refer Vol 1
Information should be submitted on the use of new technologies to reduce air emissions from the point source(s) or other emission sources.	NA	
The objectives for air emissions should be stated in respect of relevant standards (ambient and ground level concentrations), relevant emission guidelines, and any relevant legislation, and the emissions modelled using a recognised atmospheric dispersion model.	Y	13.3.1
The potential for interaction between the emissions from the plant and equipment, and emissions in the air shed, and the likely environmental harm from any such interaction, should also be detailed.	Y	13.5.1
The proposed levels of emissions should be compared with the national environmental protection measures for ambient air quality (1998), the National Health Medical Research Council national guidelines (1985) for control of emissions from stationary sources, and the *Environmental Protection (Air) Policy (1997)*.	Y	13.6.1
Where appropriate, the predicted average ground level concentrations in nearby areas should be provided.	NA	
These predictions should be made for both normal and expected maximum emission conditions and the worst case meteorological conditions should be identified and modelled where necessary. Ground level predictions should be made at any residential, industrial and agricultural developments believed to be sensitive to the effects of predicted emissions. The techniques used to obtain the predictions should be referenced, and key assumptions and data sets explained. The assessment of the project's impact on air quality should include at least the following matters:	Y	13.6.1

• evaluate the contribution of nitrogen oxides, sulfur oxides and volatile hydrocarbon emissions from the proposal to impacts within the local air shed. Address both acute and cumulative impacts by considering the project in conjunction with existing emission sources within the region	Y	13.5.1
• detail the features of the proposal designed to suppress or minimise emissions, including dusts and odours	Y	13.6.1
• the assessment of proposed levels of emissions of dust and odours should include emissions during both normal and upset conditions. Consideration should be given to the range of potential upset condition scenarios and the air emissions that may be generated as a result	NA	
• where there is no single atmospheric dispersion model that is able to handle the different atmospheric dispersion characteristics exhibited in the proposal area (e.g. strong convection, terrain features, temperature inversions and pollutant re-circulation), a combination of acceptable models will need to be applied	NA	
• the limitations and accuracy of the applied atmospheric dispersion models should be discussed. The air quality modelling results should be discussed in light of the limitations and accuracy of the applied models	NA	
• air quality predictions should be compared to the relevant goals in the National Environmental Protection Council (Ambient Air Quality) Measure and the *Environmental Protection (Air) Policy 199* 8 goals	NA	
• air shed management and the contribution of the project to air shed capacity in view of existing and future users of the air shed for assimilation and dispersion of emissions.	NA	
3.5.2.1 Greenhouse gas reduction		
This section of the EIS should propose and assess greenhouse gas reduction measures against the background of the carbon pollution reduction scheme proposed by the federal government. It should include:	NA	Refer Vol 1
• a description of how the proposed carbon pollution reduction scheme will or is anticipated to relate to the project	NA	Refer Vol 1
• a description of the proposed measures (alternatives and preferred) to avoid and/or minimise greenhouse gas emissions directly resulting from activities of the project, including such activities as transportation of products and consumables, and energy use by the project	NA	Refer Vol 1
• an assessment of how the preferred measures minimise emissions and achieve energy efficiency	NA	Refer Vol 1
• an indication of how the preferred measures for emission controls and energy consumption compare with practice in the relevant sector of industry with a view to achieving best practice environmental management.	NA	Refer Vol 1
Direct means of reducing greenhouse gas emissions could include such measures as:	NA	Refer Vol 1
• minimising clearing at the site (which also has imperatives besides reducing greenhouse gas emissions)	NA	Refer Vol 1
• integrating transport for the project with other local industries such that greenhouse gas emissions from the construction and running of transport infrastructure are minimised	NA	Refer Vol 1
• maximising the use of renewable energy sources	NA	Refer Vol 1
• co-locating coal seam methane use for energy production with coal extraction.	NA	Refer Vol 1
Consideration should also be given to indirect means of reducing greenhouse gas emissions that may be relevant in respect of the direct emissions of the project taking into account the proposed carbon pollution reduction scheme.	NA	Refer Vol 1
The environmental management plan in the EIS should include a specific module to address greenhouse reduction. That module should include:	NA	Refer Vol 1
• commitments to the reduction of greenhouse gas emissions from the project with details of the intended objectives, measures and performance standards to avoid, minimise and control emissions	NA	Refer Vol 1
• commitments to energy management, including undertaking periodic energy audits with a view to progressively improving energy efficiency	NA	Refer Vol 1
• a process for regular review of new technologies to identify opportunities to reduce emissions and use energy efficiently, consistent with best practice environmental management	NA	Refer Vol 1
• any voluntary initiatives such as projects undertaken as a component of the national Greenhouse Challenge Plus program, or research into reducing the energy carbon intensity of the project's processes or products	NA	Refer Vol 1
• commitments to monitor, audit and report on greenhouse emissions from all relevant activities and the success of reduction measures.	NA	Refer Vol 1
3.5.2.2 Climate change adaptation		
Climate change, through alterations to weather patterns and rising sea level, has the potential to impact in the future on developments designed now. Most developments involve the transfer to, or use by, a proponent of a community resource in one form or another, such as the granting of a non-renewable resource or the approval to discharge pollutants to air, water or land. Therefore, it is important that the project design be adaptive to climate change so that community resources are not depreciated by projects that would be abandoned or require costly modification before their potential to provide a full return to the community is realised. Consequently, the EIS should provide an assessment of the project's vulnerabilities to climate change and describe possible adaptation strategies for the activity including:	NA	Refer Vol 1
• a risk assessment of how changing patterns of rainfall and hydrology, temperature, extreme weather and sea level (where appropriate) may affect the viability and environmental management of the project	NA	Refer Vol 1
• the preferred and alternative adaptation strategies to be implemented	NA	Refer Vol 1
• commitments to undertaking, where practicable, a cooperative approach with government, other industry and other sectors to address adaptation to climate change.	NA	Refer Vol 1
The EPA recognises that predictions of climate change and its effects have inherent uncertainties, and that a balance must be found between the costs of preparing for climate change and the uncertainty of outcomes. However, proponents should use their best efforts to incorporate adaptation to climate change in their EIS and project design.	NA	Refer Vol 1
3.6 Noise and vibration		
3.6.1 Description of environmental values		
This section describes the existing environmental values that may be affected by noise and vibration from project activities.	Y	15.3, 16.3
If the proposed activity could adversely impact on the noise environment, baseline monitoring should be undertaken at a selection of sensitive sites affected by the proposal. Noise sensitive places are defined in the *Environmental Protection (Noise) Policy 1997* (EPP(Noise)). Long-term measured background noise levels that take into account seasonal variations are required. The locations of sensitive sites should be identified on a map at a suitable scale. The results of any baseline monitoring of noise and vibration in the proposed vicinity of the proposal should be described.	Y	15.3.2, Figure 15-1, 16.2.3, Figure 16-1
Sufficient data should be gathered to provide a baseline for later studies. The daily variation of background noise levels at nearby sensitive sites should be monitored and reported in the EIS, with particular regard given to detailing variations at different periods of the night. Monitoring methods should adhere to accepted best practice methodologies, relevant EPA guidelines and Australian Standards, and any relevant requirements of the EPP(Noise) .	NA	
Comment should be provided on any current activities near the proposal area that may cause a background level of ground vibration (for example: major roads, quarrying activities, etc.).	Y	16.3
3.6.2 Potential impacts and mitigation measures		
This section defines and describes the objectives and practical measures for protecting or enhancing environmental values from impacts by noise and vibration, describes how nominated quantitative standards and indicators may be achieved for noise and vibration management, and how the achievement of the objectives will be monitored, audited and managed. The assessment of noise impacts should include matters raised in the document *The health effects of environmental noise – other than hearing loss* published by the enHealth Council, 2004 (or later editions).	Y	15.6, 16.6
Information, including mapped noise contours from a suitable acoustic model, should be submitted based on the proposed generation of noise. The potential environmental harm of noise and vibration at all potentially sensitive places, in particular, any place of work or residence should be quantified in terms of objectives, standards and indicators to be achieved. Particular consideration should be given to emissions of low-frequency noise; that is, noise with components below 200Hz. The assessment should also include environmental impacts on terrestrial and aquatic animals and avifauna, particularly migratory species. Proposed measures for the minimisation or elimination of impacts should be provided, including details and illustrations of any screening, lining, enclosing or bunding. A discussion should be provided of timing schedules for construction and operations with respect to minimising environmental nuisance and harm from noise.	Y	15.6, 16.6

Information should be supplied on blasting which might cause ground vibration or fly rock on, or adjacent to, the site with particular attention given to places of work, residence, recreation, worship and general amenity. The magnitude, duration and frequency of any vibration should be discussed. A discussion should be provided of measures to prevent or minimise environmental nuisance and harm. Blasting noise and vibration limits are provided in section 6 of the *Environmental Protection Regulation 1998*. Reference should also be made to the *EPA Guideline: Noise and vibration from blasting.*	Y	16.5
The assessment should also address off-site noise and vibration impacts that could arise due to increased road transportation directly resulting from the project.	NA	
3.7 Waste		
3.7.1 Waste generation		
This section should provide technical details of waste generation, treatment, minimisation and management. All sources of waste to be generated during the construction, operational and decommissioning stages of the project should be identified and described in this section. Refer to each of the waste streams previously described and provide references to more detailed descriptions of the relevant environmental values in other sections of the EIS.	Y	18.2.2, 18.2.3
3.7.2 Waste management		
The EIS should provide details of waste management strategies (including reduction, reuse, recycling, storage, transport and disposal of waste) which demonstrate that waste minimisation and cleaner production techniques and designs have been implemented through the selection of processes, equipment and facilities to prevent or minimise environmental impacts.	Y	18.6.1
This section should assess the potential impact of all wastes to be generated during the construction, operational and decommissioning stages of the project, and provide details of each waste in terms of:	Y	18.5
• operational handling and fate of all wastes including storage	Y	18.5
• on-site treatment methods proposed for the wastes	Y	18.5
• methods of disposal (including the need to transport wastes off-site for disposal) proposed to be used for any trade wastes, liquid wastes and solid wastes	Y	18.6
• the potential level of impact on environmental values	Y	18.5
• proposed discharge/disposal criteria for liquid and solid wastes	NA	
• measures to ensure stability of the dumps and impoundments should be described	NA	
• methods to prevent, seepage and contamination of groundwater from stockpiles and/or dumps should be given	NA	
• market demand for recyclable waste (where appropriate) should be addressed	NA	
• waste minimisation techniques processes proposed	Y	18.6
• decommissioning of the site.	Y	18.6.4, 25.5
Having regard for best practice waste management strategies and the *Environmental Protection (Waste) Policy,* the proposals for waste avoidance, reuse, recycling, treatment and disposal should be described in the appropriate sub-section below. Information should also be provided on the variability, composition and generation rates of all waste produced at the site and processing plant.	Y	18.6.1 - 18.6.3
Cleaner production waste management planning should be detailed especially as to how these concepts have been applied to preventing or minimising environmental impacts at each stage of the proposal. Measures to improve natural resource use efficiency (e.g. energy and water), integrated processing design, any co-generation of power and by-product reuse as shown in a material/energy flow analysis should be presented.	Y	18.6.1.2
This information is required to enable the resource management agencies and other stakeholders to assess the efficiency of resource use, and allocation issues.		
• **Air emissions**—this section should provide information on air emissions, including particulates, fumes and odours, during the construction and operation stages of the project. Particulate emissions include those that would be produced by any industrial process, or disturbed by wind action on stockpiles and conveyors, or by transportation equipment (e.g. trucks, either by entrainment from the load or by passage on unsealed roads). The methods to be employed in the mitigation of impacts from air emissions should be described in the Section 3.5 Air.	Y	Chapter 13 & 14
• **Excavated waste**—this section should describe and show the location, design and methods for constructing dumps for waste rock and subsoil. The location of the dumps should be shown on a map relative to topography and other natural features of the area.	Y	18.6.2.1
• **Tailings**—this section should describe the tailings waste produced by preparation and/or processing plants and the proposed methods for its disposal. Describe alternative options for tailings disposal including the proposed location, site suitability and volume of any tailings storage and/or disposal site(s), including the method of construction.	Y	6.5.4
Describe the approximate quantity of tailings to be produced by the project and its processing plant annually for the life of the mine. Tailings characterisation information should also be presented in this section.	NA	
The construction of the tailings storage facility should be described with regards to construction material and design. The EIS should address how the tailings storage facility complies with relevant codes for the construction of such containment systems.	NA	
Describe the strategies to monitor and manage seepage into ground and surface waters. The location of the storage and/or disposal site with regard to adjacent creeks and rivers should be described.	Y	6.5.4
• **Solid waste disposal**—describe the quantity and quality of solid wastes (other than waste rock, subsoil and tailings addressed in other sections) and the proposed methods of their disposal. The proposed location, site suitability, dimensions and volume of any landfill, including its method of construction, should be shown.	Y	18.6.1
• **Liquid waste**—a description should be presented of the origin, quality and quantity of wastewater and any immiscible liquid waste originating from the project other than that addressed in other sections. Particular attention should be given to the capacity of wastes to generate acid, and saline or sodic wastewater. A water balance for the proposal and processing plant is required to account for the estimated usage of water.	Y	18.5.1
The EIS may need to consider the following effects:		
– groundwater from excavations	NA	
– rainfall directly onto disturbed surface areas	NA	
– run-off from roads, plant and industrial areas, chemical storage areas	NA	
– drainage (i.e. run-off plus any seepage or leakage)	NA	
– seepage from other waste storages	NA	
– water usage for (1) process use (2) dust suppression, and (3) domestic purposes	NA	
– evaporation	NA	
– domestic sewage treatment—disposal of liquid effluent and sludge	NA	
– water supply treatment plant—disposal of wastes.	NA	
3.8 Transport		
3.8.1 Transport methods and routes		
The EIS should describe transport modes and routes for all aspects of the transport task, including arrangements for the transport of plant, equipment, products, wastes and personnel during both the construction and operation of the project.	NA	Refer to Volume 1
The description must address the use of existing facilities and all requirements for the construction, upgrading or relocation of any transport related infrastructure. Information should include:	NA	Refer to Volume 1
• existing traffic volumes on the proposed transport routes	NA	Refer to Volume 1
• volumes, tonnage, and composition of construction inputs and production outputs	NA	Refer to Volume 1
• hazardous or dangerous material that may be transported	NA	Refer to Volume 1
• method of transport (e.g. sea, rail, road) and the type of vehicles most likely to be used for transport	NA	Refer to Volume 1
• number and type of workforce traffic and service vehicles	NA	Refer to Volume 1
• number of trips generated (both light and heavy vehicles)	NA	Refer to Volume 1
• origin and destination of inputs and outputs and transport routes proposed (with the use of maps)	NA	Refer to Volume 1

• details of over-dimension or excess mass loads	NA	Refer to Volume 1
• timing and duration of transport activities.	NA	Refer to Volume 1
The EIS should clearly and fully describe transport information for all stages of the project including:		
• all requirements for the construction, upgrading or re-location of any transport-related infrastructure, including any need for increased road maintenance	NA	Refer to Volume 1
• any new access requirements to state-controlled or local government roads	NA	Refer to Volume 1
• sufficient details to allow the Department of Main Roads (DMR), Queensland Transport and local government and other relevant authorities to ascertain compliance with legislative and design requirements.	NA	Refer to Volume 1
3.8.2 Potential impacts and mitigation measures		
The EIS must provide sufficient information to allow an independent assessment of how the state-controlled and local government road networks will be affected at the local and regional level, and indicate clearly the corrective measures and mitigation strategies necessary to address adverse road impacts including a wet weather management strategy.	NA	Refer to Volume 1
An assessment of impacts to existing transport infrastructure associated with project activities should be provided and include the following:	NA	Refer to Volume 1
• the likely impacts and mitigation strategies of any new roads or road realignments that are required as a result of the project	NA	Refer to Volume 1
• the likely impacts and mitigation strategies of increased traffic on local and regional road networks (with appropriate directional distributions), with reference to:	NA	Refer to Volume 1
– volumes of project inputs and outputs (types and quantities), vehicles, their origin, destination and routes used for transport, including plant, raw materials, wastes, hazardous materials, finished products	NA	Refer to Volume 1
– volume of traffic generated by workforce personnel, visitors and service vehicles, method of transport (vehicle type and number), anticipated times at which movements may occur and likely routes	NA	Refer to Volume 1
– details of heavy and oversize/indivisible loads (including types and composition), and the proposed transport routes including waterway crossings	NA	Refer to Volume 1
– road safety issues, including safe access to and from construction sites and school bus routes within the project area (e.g. consideration of the need for turning lanes, improved sight lines, waiting areas, off-road parking locations)	NA	Refer to Volume 1
– reduced efficiency of traffic flows or intersections along key routes, especially during construction	NA	Refer to Volume 1
– additional wear or reduced life of pavements requiring additional or accelerated rehabilitation and maintenance, if any	NA	Refer to Volume 1
– changes in waterway areas/catchment and drainage lines which may impact on road operations and assets (particularly rail crossing), not addressed in section 3.4	NA	Refer to Volume 1
– operation of existing bus routes and services	NA	Refer to Volume 1
– risks of driver fatigue of workers driving between the project to regional destinations	NA	Refer to Volume 1
– proposed traffic control and traffic management	NA	Refer to Volume 1
– public transport requirements of the development	NA	Refer to Volume 1
– steps to prevent public access to construction access ways that are not public roads.	NA	Refer to Volume 1
• specific issues related to construction phase activities, including:	NA	Refer to Volume 1
– site depot location and access – construction traffic on local road networks, daily movement patterns, possible road closures and emergency access, especially in rural and urban residential areas – methods to be adopted to avoid obstruction to other road users during construction.	NA	Refer to Volume 1
Details of the relative impacts generated by each of the project's components to existing transport infrastructure during construction, operation and decommissioning phases should be provided.	NA	Refer to Volume 1
This section, in addition to detailing the impacts of all road and rail construction and maintenance, is to include an evaluation of the impact of the project on existing roads, railways, powerlines, pipelines, telecommunication lines, waterways and stormwater flow-paths located within or close proximity to transport infrastructure. This evaluation should include any potential requirements to reschedule existing infrastructure maintenance programs.	NA	Refer to Volume 1
Special reference should be made to any relationship between project road works and works proposed in the current Road Implementation Program of the DMR. Road infrastructure should be described and assessed according to DMR's 'Guidelines for Assessment of Road Impacts of Development Projects (April 2006)'.	NA	Refer to Volume 1
Strategies for managing the impacts of the project on road safety, including access for emergency response vehicles especially with regard to proposed road diversions, should be presented.	NA	Refer to Volume 1
A comparison of the traffic situation and road conditions with and without the project should be shown.	NA	Refer to Volume 1
This section should also discuss how transport elements of the project relate to Queensland Transport's existing transport strategies for the Central Highlands area and the future infrastructure needs of this area as presented in local and state government documentation.	NA	Refer to Volume 1
As air transport is an option for the project, this section should describe the likely airstrip options (upgrade existing or develop new), proposed locations, operating regime, including make-up of passengers (i.e. workforce and/or members of the public), the likely impacts and mitigation strategies, as well as the regulatory requirements of relevant Commonwealth and state bodies.	NA	Refer to Volume 1
The EIS should also outline arrangements made with the Gladstone Ports Corporation for the storage, handling and export of coal from the mine.	NA	Refer to Volume 1
Mitigation strategies are to be detailed in a draft road-use management plan, to be finalised in consultation with DMR, which will:	NA	Refer to Volume 1
• consider DMR's future upgrades of the road network, as detailed in the roads implementation program, which may affect the study area	NA	Refer to Volume 1
• detail impact mitigation strategies including the construction of new transport infrastructure referencing relevant road authority standards and practices (any required road works should be designed and constructed in accordance to Main Roads' Road Planning and Design Manual 2004 or as amended)	NA	Refer to Volume 1
• provide timing and responsibilities for any required road works and additional transport infrastructure. (Traffic management issues for any required road works and any approvals under the *Transport Infrastructure Act (Qld) 1994* may be finalised in a traffic management plan at the project pre-construction stage)	NA	Refer to Volume 1
• provide information on product spill contingency plans and the adequacy of equipment and facilities to deal with possible spills for the transport modes of the project if applicable. Indicate whether there is a need to update existing plans based on increase in frequency of traffic and volumes to be transported.	NA	Refer to Volume 1
It is understood that some detailed design elements of the road-use management plan may not be known prior to completion of the EIS, and that this information will be supplied subsequently to DMR and other road authorities.	NA	Refer to Volume 1
3.9 Indigenous cultural heritage		
3.9.1 Description of indigenous cultural heritage values		
The EIS should describe the known indigenous cultural heritage values that may be affected by the project. An indigenous cultural heritage survey (as part of the Cultural Heritage Management Plan (CHMP) process or otherwise) should be undertaken for significant Aboriginal objects and significant Aboriginal areas. The indigenous cultural heritage survey should:		
• refer to the DNRW Indigenous Site Database and any existing literature relating to the affected areas		
• refer to:	Y	20A2
o the consultation and negotiation with traditional owners and the outcomes about: - significant Aboriginal Objects and Significant Aboriginal Areas - confidentiality of culturally sensitive information o The involvement of traditional owners in field surveys.	Y	20A.3, 20A.5
• include locations of significant Aboriginal objects and significant Aboriginal areas identified during the survey and which are likely to be impacted by the project	Y	Table 20-1, 20A.2

• provide a report of work done which includes background research, relevant environmental data and methodology, as well as results of field surveys, significance assessment and conclusions and management recommendations (having due for any confidentiality requirements specified by community representatives).	Y	20A.5
3.9.2 Potential impacts and mitigation measures		
The management of indigenous cultural heritage impacts should be detailed in either a native title agreement with traditional owners or in a CHMP, with the native title agreement or plan to be developed in a form that complies with the provisions of Part 7 of the *Aboriginal Cultural Heritage Act 2003,* thereby meeting the cultural heritage duty of care. The agreement or plan must provide a process for the conduct of comprehensive cultural heritage investigations and the identification of significant Aboriginal objects and significant Aboriginal areas in the proposed project area. It is also to provide a process for the management of those objects, areas and values identified in the proposed project area.	Y	Refer Volume 1, Chapter 20A
The agreement or plan should include the following:		
• a process for including Aboriginal communities or Aboriginal parties in the identification, management and protection of Aboriginal cultural heritage in the project area	Y	Refer Volume 1, Chapter 20A
• a process for undertaking a comprehensive and systematic cultural heritage assessment	Y	Refer Volume 1, Chapter 20A
• processes for the mitigation, management and protection of identified cultural heritage objects and areas in the project area, and in any areas to be affected by development of any associated infrastructure, both during construction and operational phases of the project	Y	Refer Volume 1, Chapter 20A
• provision for the management of the accidental discovery of cultural material, including burials, in the project area	Y	Refer Volume 1, Chapter 20A
• processes for determining any requirements for monitoring of the project during construction, and measures by which any monitoring program is to be implemented	Y	Refer Volume 1, Chapter 20A
• Indigenous cultural heritage induction and awareness programs for project staff, subcontractors and staff, consultants and agents of the project	Y	Refer Volume 1, Chapter 20A
• a conflict resolution process.	Y	Refer Volume 1, Chapter 20A
The development of the agreement or plan should be negotiated with all relevant stakeholder representatives, subject to any confidentiality specified by the Aboriginal community, registered native title applicants, and/or Aboriginal parties as appropriate.		
As a minimum, impact assessment, management and protection strategies should satisfy statutory responsibilities and duties of care under the *Aboriginal Cultural Heritage Act 2003* and the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)* .		
If a CHMP has not been approved by the submission of the EIS to the CG then the following should be provided:		
• a outline of the draft CHMP, subject to any confidentiality provisions, with the position of the endorsed cultural heritage parties	NA	
• details of the proposed steps and timeframes for seeking the ratification of the CHMP.	NA	
3.10 Non-indigenous cultural heritage		
3.10.1 Description of non-indigenous cultural heritage values		
The EIS should describe the existing environmental values for non-indigenous cultural heritage that may be affected by the project activities. The non-indigenous cultural heritage survey should:	Y	20B.3, 20B.4
• refer to: o the Australian Heritage Places Inventory; o the EPA Queensland Heritage Register and other information regarding places of potential non-indigenous cultural heritage significance; o local government heritage register; and o any existing literature relating to the affected areas.	Y	20B.3.1, 20B.4.2
• refer to consultations and negotiations with the local community and historical societies about: o places of non-indigenous cultural heritage significance; and o the significance of any non-indigenous cultural heritage places located or identified.	Y	20B.3.2
• include locations of culturally significant sites likely to be impacted by the project	Y	20B.4.2, 20B.5.1
• provide a constraints' analysis of the proposed development area to identify and record non-indigenous cultural heritage places		
• provide the location of mining areas with historical significance should be shown on maps	Y	20B.4.2
• provide a report of work done which includes background research, relevant environmental data and methodology, as well as results of field surveys, significance assessment and conclusions and management recommendations (having due regard for any confidentiality requirements specified by community representatives).	Y	20B.4.2, Teachnical Report 20B-1-V2.5
As a minimum, investigations and consultation should be undertaken in such manner and detail to satisfy statutory responsibilities and duties of care, under the EPBC Act and *Queensland Heritage Act 1992*.	Y	20B.2.1
3.10.2 Potential impacts and mitigation measures		
The proponent should provide an assessment of any likely effects on sites of non-indigenous cultural heritage values, including but not limited to the following:		
• description of the significance of artefacts, items or places of conservation or non-indigenous cultural heritage value likely to be affected by the project and their values at a local, regional and national level	Y	20B.5.1
• recommended means of mitigating any negative impacts on non-indigenous cultural heritage values and enhancing any positive impacts	Y	20B.6, 20B.7
• negotiations with Queensland Heritage Council and the EPA regarding management of places of historic heritage significance, taking account also of community interests and concerns	NA	
• documented management strategies in accordance with the outcomes of negotiations with Queensland Heritage Council, EPA and the community.	NA	
As a minimum, impact assessment, management and protection strategies should satisfy statutory responsibilities and duties of care, including those under the EPBC Act and *Queensland Heritage Act 1992*.	Y	20B.5, 20B.6
3.11 Health and safety		
3.11.1 Description of existing public health and safety community values		
This section describes the existing community values for public health and safety that may be affected by the project. For projects proposing air emissions, and/or those with the potential to emit odours, nearby and other potentially affected populations should be identified and described. Particular attention should be paid to those sections of the population, such as children and the elderly that are especially sensitive to environmental health factors.	Y	24.3
3.11.2 Potential impacts and mitigation measures		
This section defines and describes the objectives and practical measures for protecting or enhancing health and safety community values, describes how nominated quantitative standards and indicators may be achieved for social impacts management, and how the achievement of the objectives will be monitored, audited and managed.	Y	24.5, 24.6
The EIS should assess the effects on the project workforce of occupational health and safety risks and the impacts on the community in terms of health, safety, and quality of life from project operations and emissions. Any impacts on the health and safety of the community, workforce, suppliers and other stakeholders should be detailed in terms of health, safety, quality of life from factors such as air emissions, odour, dust and noise.	Y	24.6.3, 24.6.4
Map(s) should be provided showing the locations of sensitive receptors, such as, but not necessarily limited to, kindergartens, schools, hospitals, aged care facilities, residential areas, and centres of work (e.g. office buildings, factories and workshops). The EIS, illustrated by the maps, should discuss how planned discharges from the project could impact on public health in the short and long term, and should include an assessment of the cumulative impacts on public health values caused by the proposal, either in isolation or by combination with other known existing or planned sources of contamination.	NA	

The EIS should address the project's potential for providing disease vectors. Measures to control mosquito and biting midge breeding should be described. Any use of recycled water should be assessed for its potential to cause infection by the transmission of bacteria and/or viruses by contact, dispersion of aerosols, and ingestion (e.g. via use on food crops). Similarly, the use of recycled water should be assessed for its potential to cause harm to health via the food chain due to contaminants such as heavy metals and persistent organic chemicals. Practical monitoring regimes should also be recommended in this section.	NA	
3.12 Cumulative impacts		
The purpose of this section is to provide clear and concise information on the overall impacts of the project, and to discuss the interrelationship of these impacts.	NA	Refer to Vol 1
This is in addition to the discussion of cumulative impacts which feature in the relevant sections.	NA	Refer to Vol 1
The cumulative impacts as they relate to particular issues (e.g. water management, cultural heritage, social and economic costs and benefits, community disruption and accommodation etc.) may also be discussed in this section.	NA	Refer to Vol 1
These impacts should be considered over time or in combination with other impacts because of the scale, intensity, duration or frequency of the impacts.	NA	Refer to Vol 1
Cumulative impacts should also take into consideration other infrastructure projects. In particular, the requirements of any relevant state planning policies, environmental protection policies, national environmental protection measures, water resource planning and any other relevant plans should be addressed	NA	Refer to Vol 1
The methodology to be used to determine the cumulative impacts of the project should be discussed. The methodology should detail the range of variables to be considered including, where applicable, relevant baseline or other criteria upon which the incremental aspects of the project should be assessed.	NA	Refer to Vol 1
4 Social values and management of impacts		
4.1 Description of existing social values		
This section describes the existing social values that may be affected by the proposal.	Y	21.4
The social amenity and use of the proposal area and adjacent areas for rural, agricultural, forestry, fishing, recreational, industrial, educational or residential purposes should be described. Consideration should be given to:	Y	21.4
• community infrastructure and services, access and mobility	Y	21.4 - 21.4.17
• population and demographics of the affected community	Y	21.4.1-21.4.2
• local community values, vitality and lifestyles	Y	21.4.3
• recreational, cultural, leisure and sporting facilities and activities in relation to the affected area	Y	21.4.7
• health and educational facilities	Y	21.4.10 & 21.4.13
• on farm activities near the proposed activities	Y	21.4.6
• current property values	Y	21.4.12
• number of properties directly affected by the project	Y	21.6.25
• number of families directly affected by the project, this should include not only property owners but also families of workers either living on the property or workers where the property is their primary employment	Y	21.6.25
• Aboriginal people's traditional and contemporary uses of the land affected by the project.	Y	20A.3
Describe the social values for the affected area in terms of the integrity of social conditions, including amenity and liveability, harmony and well being, sense of community, access to recreation, and access to social and community services and infrastructure.	Y	21.6
Social, economic and cultural values are not as easily separated as physical and ecological values. Therefore it may be necessary for some material in this section to be cross-referenced with in section 3.9 Indigenous cultural heritage, section 3.10 Non-indigenous cultural heritage and Section 5 Impacts on state and local economies and management of those impacts.		
Information should also be provided on the existing housing market in the area, with an emphasis on:		
• the size of the private rental market	NA	Refer to Vol 1
• the vacancy rate of rental accommodation, including assessment of seasonal fluctuations	NA	Refer to Vol 1
• typical rents	NA	Refer to Vol 1
• the availability and typical cost of housing for purchase	NA	Refer to Vol 1
• the level of social housing	NA	Refer to Vol 1
• constraints and opportunities for new housing construction, including the capacity of the local land development and housing construction industries to provide new housing.	NA	Refer to Vol 1
4.2 Potential impacts and mitigation measures		
This section defines and describes the objectives and practical measures for protecting or enhancing social values, describes how nominated quantitative standards and indicators may be achieved for social impacts management, and how the achievement of the objectives will be monitored, audited and managed.	Y	21.9
The social impact assessment of the project should consider the information gathered in the community consultation program and the analysis of the existing socio-economic environment, and describe the project's impact, both beneficial and adverse, on the local community. The impacts of the project on local and regional residents, community services and recreational activities are to be analysed and discussed for all stages of the development. The nature and extent of the community consultation program are to be described and a summary of the results incorporated in the EIS.	Y	Chapter 4
The social impact assessment should include sufficient data to enable State authorities, such as Queensland Health and Education Queensland, to plan for the continuing provision of public services in the region of the project. Proponents of projects that are likely to result in a significant increase in population of an area should consult the relevant management units of the State authorities, and summarise the results of the consultations in the EIS. The summary should discuss how the impacts of population increase on public services, particularly health and education, would be mitigated.	Y	21.7.16 21.8
The social impact assessment of the project is to be carried out in consultation with the Department of Communities. The assessment of impacts should describe the likely response of affected communities and identify possible beneficial and adverse impacts (both immediate and cumulative). These impacts should be considered both at the regional and local level.	Y	Throughout Document 21.7.16
The EIS should address the following matters:		
• include an assessment of impacts on local residents, current land uses and existing lifestyles and enterprises	Y	21.6.2, 21.6.8, 21.6.9
• include an assessment of impacts on local and state labour markets, with regard to the source of the workforce. This information is to be presented according to occupational groupings of the workforce. In relation to the source of the workforce, information is required as to whether the proponent, and/or contractors, are likely to employ locally or through other means and whether there are initiatives for local employment opportunities		
• the EIS should address impacts of both construction and operational workforces and associated contractors on housing demand, community services and community cohesion. The capability of the existing housing stock, including rental accommodation, to meet any additional demands created by the project is to be discussed, and where appropriate mitigation strategies proposed to limit displacement of existing rental households	Y	21.6.13
• the assessment of impacts should take account of relevant demographic, social, cultural and economic profiles	Y	21.6.1, 21.6.2, 21.6.10
• identify any new skills and training to be introduced in relation to the project. Adequate provision should be made for apprenticeship and worker training schemes. If possible, the occupational skill groups required and potential skill shortages anticipated should be indicated	Y	21.6.20
• provide comment on how much service revenue and work from the project (e.g. provisioning, catering and site maintenance) would be likely to flow to existing communities in the area of the project, particularly if a fly-in, fly-out workforce is proposed		
• include an assessment of impacts on existing local residents' values and aspirations	Y	21.6.2

• in regard to affected Indigenous and non-indigenous communities respectively, particular attention should be paid to the effects on:		
o the ability of both indigenous and non-indigenous people, to live in accordance with their own values and priorities; o the use of and access to culturally important areas and landscapes; o the access to existing human and commercial services and housing; o the ability to participate in regional and local employment and training opportunities; and o the new project workforce and their families.	Y	21.6.10, 21.6.11, as applicable
For the construction and operational phases of the development, describe the effects of the proposal on local and regional residents, including land acquisition and relocation issues and property valuation and marketability, community services and recreational activities. Discussion should also include situations where residents are offered lease arrangements for a period of time post ownership transfer.	Y	21.6.25, also Chapter 22 Economics
Discuss the potential environmental harm on the amenity of adjacent areas used for cropping, grazing, forestry, recreation, industry, education, aesthetics, or scientific or residential purposes. Describe the implications of the proposal for future developments in the local area including constraints on surrounding land uses.	Y	21.6.8
For identified impacts to social values, suggest mitigation and enhancement strategies and facilitate initial negotiations towards acceptance of these strategies. Practical monitoring regimes should also be recommended.	Y	21.7 and Volume 1 Chapter 6
An assessment of the predicted impacts of the proponent's activities (including activities by any sub-contractors) on the local and regional housing markets should also be undertaken. The assessment should refer to the projected accommodation needs for the project in both the construction and operational phases, and estimate:	Y	Volume 1 Chapter 5.17
• the capacity of local and regional housing markets to meet the accommodation needs of the project, including the potential displacement of low-income residents from affordable rental accommodation and diminished availability of accommodation	Y	Volume 1 Chapter 5.18, 5.19
• any possible cumulative impacts on the local and regional housing market due to the presence of other existing or proposed major projects in the area, and seasonal employment factors	Y	21.6.26 & Volume 1 Chapter 5.19
• the impact of the construction phase of the project on the local and regional residential development and housing construction industry, with particular reference to the demand for local contractors.	Y	Volume 1 Chapter 5.19,5.31
# 5 Impacts on State and local economies and management of those impacts		
## 5.1 Description of existing economic character		
This section describes the existing economic environment that may be affected by the project.		
The character and basis of the local and regional economies should be described including:	Y	Refer Volume 1
• economic viability (including economic base and economic activity, future economic opportunities, current local and regional economic trends, in particular drought and rural downturn etc)	Y	Refer Volume 1
• identification of existing labour force and unemployment statistics	Y	Refer Volume 1
• existing housing market, particularly rental accommodation which may be available for the project workforce	Y	Refer Volume 1
• types and numbers of businesses	Y	Refer Volume 1
• existing property and land values	Y	Refer Volume 1
• availability and prices of goods and services	Y	Refer Volume 1
• availability of suitable land for support industrial uses	Y	Refer Volume 1
• historical descriptions of large-scale resource developments and their effects in the region.	Y	Refer Volume 1
The economic impact statement should include estimates of the opportunity cost of the project and the loss of value to ecosystem services as a result of the disturbance or removal of natural or modified ecosystems during development.	Y	Refer Volume 1
## 5.2 Potential impacts and mitigation measures		
The function of this section is to define and describe the objectives and practical measures for protecting or enhancing economic values, to describe how nominated quantitative standards and indicators may be achieved for economic management, and how the achievement of the objectives will be monitored, audited and managed.	Y	Refer Volume 1
An economic impact assessment should be presented from national, state, regional and local perspectives as appropriate to the scale of the project. The general economic benefits from the project should be described.	Y	Refer Volume 1
At a level of detail appropriate to the scale of the project, the analysis is to consider:	Y	Refer Volume 1
• the significance of this proposal on the local and regional economic context	Y	Refer Volume 1
• the long and short-term beneficial (e.g. job creation) and adverse (e.g. competition with local small business, reduced local farming productivity) impacts that are likely to result from the development	Y	Refer Volume 1
• the potential, if any, for direct equity investment in the project by local businesses or communities	Y	Refer Volume 1
• the cost to all levels of government of any additional infrastructure provision	Y	Refer Volume 1
• implications for future development in the locality (including constraints on surrounding land uses and existing industry)	Y	Refer Volume 1
• the potential economic impact of any major hazard identified in Section 6 Hazard and risk	Y	Refer Volume 1
• the distributional effects of the proposal including proposals to mitigate any negative impact on disadvantaged groups	Y	Refer Volume 1
• the value of lost opportunities (i.e. loss of GQAL) or gained opportunities for other economic activities anticipated in the future	Y	Refer Volume 1
• impacts on local property values.	Y	Refer Volume 1
The effect on local labour markets should be discussed with regard to the number and source of the workforce. This information should be presented according to occupational groupings of the workforce and show anticipated peaks in numbers during the construction period. This information should include an estimate of the anticipated numbers of workers who will be accompanied by dependents, as well as those who will be unaccompanied (i.e. single workers).	Y	Refer Volume 1
The impacts of both construction and operational workforces and associated contractors on housing demand should be addressed and include:	Y	Refer Volume 1
• an accommodation strategy for the construction workforce, which addresses the estimated housing needs of both single and accompanied construction workers	Y	Refer Volume 1
• details of the size, location and management of any temporary worker accommodation that will be required either on-site or off-site	Y	Refer Volume 1
• maps, as necessary, to illustrate the location of any proposed construction workers' accommodation on-site or in the vicinity of the project	Y	Refer Volume 1
• the capability of the existing housing stock, particularly rental accommodation, to meet any additional demands created by the project	Y	Refer Volume 1
• the capacity of water supply and sewerage systems to service any new residential development and any project proposals to supplement this infrastructure.	Y	Refer Volume 1
Any new skills and training to be introduced in relation to the project should be identified, particularly opportunities for private investment in training. Adequate provision should be made for apprenticeship and worker training schemes, including consideration of a skills development and training strategy to assist disadvantaged groups as well as local residents.	Y	Refer Volume 1
Consideration of the impacts of the project in relation to energy self-sufficiency, security of supply and balance of payments benefits may be discussed. Attention should be directed to the long and short-term effects of the project on the land-use of the surrounding area and existing industries, regional income and employment and the state economy. The scope of any studies should be referred to the government for input before undertaking the studies.	Y	Refer Volume 1
For identified impacts to economic values, suggest mitigatory and enhancement strategies and facilitate initial negotiations towards acceptance of these strategies. Practical monitoring regimes should also be recommended.	Y	Refer Volume 1

# 6 Hazard and risk		
## 6.1 Hazard and risk assessment		
This section of the EIS should describe the potential hazards and risks that may be associated with the project and should incorporate all known hazards, which may include:		
• identification of potential hazards, accidents, spillages and abnormal events occurring during all stages of the project, including possible frequency of occurrence	Y	23.2.2, 23.4
• indication of cumulative risk levels to surrounding land uses	Y	Refer Chapter 26
• identification of all hazardous substance to be used, stored, processed or produced and the rate of usage	Y	23.4.2
• potential wildlife hazards such as snakes and disease vectors.	Y	23.5.1, 23.6.2
The EIS should deal with on-site risks. External risks to the project should also be considered. External risks from natural hazards could be determined on the basis of Australia/New Zealand Standard on Risk Management AS/NZS 4360:2004 . The study should assess risks during the construction, operational and decommissioning phases associated with the project. These risks should be assessed in quantitative terms where possible. Possible hazards, accidents, and abnormal events that may arise for the project, both during construction and in operation should be described, including:		
• accidental release of hazardous goods or other materials	Y	23.5.1
• fires associated with incidents arising from the project activities	NA	
• vulnerability of the project area to bushfire, flooding and landslip and other natural disasters.	Y	Chapter 7
Analysis of the consequences of each of these events on safety and environmental damage in the project area should be conducted, including direct harm to the environment as a result of project hazards. The analysis should examine the likelihood of these consequences being experienced, both individually and collectively.	Y	23.5.1
In regard to the on-site handling and storage of explosive raw material, consultation is encouraged with the Department of Emergency Services Chemical Hazards and Emergency Management (CHEM) Services Unit.	NA	
Details should be provided on the safeguards that would be employed or installed to reduce the likelihood and severity of hazards, consequences and risks to persons, fauna and environmentally sensitive sites within and adjacent to the project area.	Y	23.6
## 6.2 Emergency management plan		
An outline of the proposed emergency management procedures should be provided for the range of situations identified in the above risk assessment where there are measurable risks. This should include an overview of the objectives and management principles to be adopted for the preparation of a detailed emergency plan (including emergency response and recovery/cleanup procedures) in consultation with the relevant emergency services. Planning should include reference to State Planning Policy 1/03, Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.	Y	23.8
In particular, the following should be presented:		
• contingency plans to deal with hydrocarbon (e.g. diesel, lubricating oils) oil spills during construction, operation and maintenance of the project	Y	23.6.1
• contingency plans to account for natural disasters such as storms, flooding and fires during the construction, operation and maintenance phases	NA	
• emergency planning and response procedures that have been determined in consultation with state and regional emergency service providers	Y	23.8
• plans for involvement of the relevant state agencies (such as the Department of Emergency Services, which includes the Queensland Ambulance Service, Queensland Fire and Rescue Service and Emergency Management Queensland) in relation to emergency medical response and transport and first aid matters.	Y	23.8
# 7 Environmental management plan		
This section of the EIS should detail the EMP developed for the project. Separate EMPs should individually address the discrete project elements. The EMPs should be developed from, and be consistent with, the preceding information in the EIS.	Y	27.3
An EMP should provide control actions in accordance with agreed performance criteria for specified acceptable levels of environmental harm.	Y	27.3.1 - 27.3.16
In addition, the EMPs should identify:		
• potential impacts on environmental values	Y	27.3.1 - 27.3.16
• mitigation strategies	Y	27.3.1 - 27.3.16
• relevant monitoring	Y	27.3.1 - 27.3.16
• appropriate indicators and performance criteria	Y	27.3.1 - 27.3.16
• reporting requirements	Y	27.3.1 - 27.3.16; 27.2.3
• appropriate corrective actions, should an undesirable impact or unforeseen level of impact occur	Y	27.3.1 - 27.3.16
• the recording of and response to complaints.	Y	27.2.4
The aims of the EMPs are to provide:		
• commitments by the proponent to practical and achievable strategies and design standards (performance specifications) for the management of the project to ensure that environmental requirements are specified and complied with	Y	27.3.1 - 27.3.16
• an integrated plan for comprehensive monitoring and control of impacts	Y	27.2
• local, state and federal government authorities, stakeholders and the proponent with a common focus for approvals conditions and compliance with policies and conditions	Y	27.3.1 - 27.3.16
• the community with evidence that the environmental management of the project is acceptable.	Y	27.3.1 - 27.3.16
The recommended structure of each element of the EMP is:		
Element/issue		
Aspect of construction or operation to be managed (as it affects environmental values).	Y	27.3.1 - 27.3.16
Operational policy -		
The operational policy or management objective that applies to the element.	Y	27.3.1 - 27.3.16
Performance criteria -		
Measurable performance criteria (outcomes) for each element of the operation.	Y	27.3.1 - 27.3.16
Implementation strategy -		
The strategies, tasks or action program (to nominated operational design standards) that would be implemented to achieve the performance criteria.	Y	27.3.1 - 27.3.16
Monitoring -		
The monitoring requirements to measure actual performance (i.e. specified limits to pre- selected indicators of change).	Y	27.3.1 - 27.3.16
Auditing -		
The auditing requirements to demonstrate implementation of agreed construction and operation environmental management strategies and compliance with agree performance criteria	Y	27.3.1 - 27.3.16; 27.2.5
Reporting -		
Format, timing and responsibility for reporting and auditing of monitoring results	Y	27.3.1 - 27.3.16; 27.2.3
Corrective action -		
The action (options) to be implemented in case a performance requirement is not reached and the person(s) responsible for action (including staff authority and responsibility management structure).	Y	27.3.1 - 27.3.16
An EMP should commit to manage, enhance or protect identified environmental values. The commitments should contain the following components for performance criteria and implementation strategies:		
• Environmental protection objectives for enhancing or protecting each relevant value.	Y	27.3.1 - 27.3.16
• Indicators to be measured to demonstrate the extent to which the environmental protection objective is achieved.	Y	27.3.1 - 27.3.16

• Environmental protection standards (a numerical target or value for the indicator), which defines the achievement of the objective.	Y	27.3.1 - 27.3.16
• An action program to ensure the environmental protection commitments are achieved and implemented. This will include strategies in relation to:		
– communication	Y	27.2.6; 27.2.4
– continuous improvement	Y	27.2.7
– environmental auditing	Y	27.2.5
– monitoring	Y	27.2.5; 27.3.1 - 27.3.16
– reporting	Y	27.2.3; 27.3.1 - 27.3.16
– staff training	Y	27.2.6
– a decommissioning program for land proposed to be disturbed under each relevant aspect of the project.	Y	6
# 8 Conclusions and recommendations		
The EIS should make conclusions and recommendations with respect to the project based on the studies presented, the EMP and conformity of the project with legislative and policy requirements.	Y	In each chapter
# 9 References		
All references consulted should be presented in the EIS in a recognised format.	Y	In each chapter
# 10 Recommended appendices		
## 10.1 Final TOR for this EIS		
A copy of the final TOR should be included in the EIS. A summary cross-referencing specific items of the Terms of Reference to the relevant section of the EIS should also be provided.	Y	Appendix 1-1-V1.4
## 10.2 Development approvals		
A list of the development approvals required by the project should be presented.	Y	Chapter 3
## 10.3 EPBC report		
A report addressing matters of NES and potential impacts of the project is recommended.	Y	Appendix 3-1-V2.4
## 10.4 Consultation report		
A list of advisory agencies should be provided in a summary consultation report, which should also list the federal, state and local government agencies consulted, and the individuals and groups of stakeholders consulted. A summary of the issues raised by these groups, and the means by which the issues have been addressed, should be provided in the text of the EIS.	Y	See the Community Consultation Technical Report of TR 4-1-V1.5
The EIS should summarise the results of the community consultation program, providing a summary of the groups and individuals consulted, the issues raised, and the means by which the issues were addressed. The discussion should include the methodology used in the community consultation program including criteria for identifying stakeholders and the communication methods used.	Y	Chapter 4
Information about identifying affected parties (as defined by the EPBC Act) and interested and/or affected persons (as defined by the EP Act) should be included.	Y	Chapter 4
## 10.5 Study team		
The qualifications and experience of the study team and specialist sub-consultants should be provided.	Y	Volume 1, Chapter 1
## 10.6 Glossary of terms		
A glossary of technical terms and acronyms should be provided.	Y	In the Glossary of V2.2
## 10.7 Specialist studies		
All reports generated on specialist studies undertaken as part of the EIS are to be included as appendices. These may include:		
• flora and fauna studies including the subregional analysis of representativeness and adequacy of protection for the terrestrial/riparian vegetation communities and their component flora and fauna taxa within the affected areas	Y	Terrestrial and Aquatic Ecology Technical Reports, see TR 17A-1-V2.5 and TR 17B-1-V2.5
• an integrated assessment of relative biodiversity/conservation values, based on the methodology outlined in EP Act	Y	Terrestrial and Aquatic Ecology Technical Reports, see TR 17A-1-V2.5 and TR 17B-1-V2.5
• air pollution, noise and vibration	NA	
• waterway hydrology	NA	
• groundwater	NA	
• geology	Y	See TR 9-1-V2.5
• economic studies and/or cost-benefit analyses	NA	
• hazard and risk studies	Y	See Chapter 23
• land use and land capability studies.	Y	See Chapter 8, TR 8-1-V2.5, and TR 9-1-V2.5
## 10.8 Corporate environmental policy		
The proponent should attach a copy of its corporate environmental policy and planning framework document.	Y	See Appendix 1-?-V1.5 of Volume 1
## 10.9 List of proponent commitments		
A list of all commitments made by the proponent in the EIS should be provided together with a reference to the relevant section in the report.	Y	See Chapter 28