

**Final terms of reference for the
Skardon River Bauxite Project
environmental impact statement**
Proposed by Gulf Alumina Limited

Prepared by: Statewide Environmental Assessments Unit, Department of Environment and Heritage Protection

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January 2015

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Project proponent

The project proponent, Gulf Alumina Limited (Gulf Alumina), is a public company registered in Sydney, NSW, to explore and develop bauxite deposits in and around Australia. Gulf Alumina owns the three mining leases (MLs 6025, 40069 and 40082) relevant to the proposed Skardon River Bauxite Project.

Gulf Alumina's head office is located in Sydney at the following address:

Gulf Alumina Limited
Suite 503, Level 5, 37 Bligh St,
Sydney, NSW 2000
Telephone: (02) 9221 4689 Fax: (02) 9221 4686
Email: info@gulfalumina.com.au
Website address: www.gulfalumina.com.au
ACN: 108 086 377

Proposed Skardon River Bauxite Project

The proponent for the Skardon River Bauxite Project, Gulf Alumina Limited, proposes to mine bauxite for export. The proposed project would be located on Cape York Peninsula, approximately 100km north of Weipa, in the Parish of Skardon within the Cook Shire. The relevant mining tenures are granted mining leases (MLs) 6025 (1922ha), 40069 (260ha) and 40082 (1743ha). The proposal involves mining of a bauxite ore body of 50 million tonnes (Mt). The planned mine production rate would initially be three million tons per annum (Mt/a) initially and would rise to 5Mt/a subject to market conditions. The project life is expected to be 10 years.

The total mining area would be approximately 1160ha within the mining leases. The area to be mined would include portions of the 171ha previously disturbed by kaolin mining (including the decommissioned wet kaolin processing plant area) the airstrip and sections of the north-south haul road. Bauxite products would be transported via the existing haul roads to the Port of Skardon River and transhipped to bulk carriers in deep water beyond the mouth of the river for export. Construction is planned to commence in 2015 and bauxite mining and shipping would commence in 2016.

Infrastructure for the proposed bauxite project includes:

- a new ship loading facility within the existing mining leases and the gazetted Port of Skardon River
- a new wharf on piles and berthing 'dolphins'
- a bauxite ore dump facility, crusher plant and conveyor belt system and bauxite product stockpile facility, all adjacent to the Skardon River landing area
- new workshop, warehouse, administration building and crib room at the Skardon River landing area
- a new bulk fuel storage facility, diesel transfer tanks, export waste storage and sewage treatment facility at the Skardon River landing area
- bed-levelling at the mouth of the Skardon River, involving underwater reprofiling of two shallow areas at the seaward end of the Skardon River mouth. No capital dredging is proposed; however, annual maintenance bed levelling is likely to be required
- barging of bauxite to the offshore transshipment location in deep water approximately 15km offshore from the Skardon River mouth, and transfer from barges to bulk carriers
- upgrading of an existing 13.8km-long north-south haul road from the Skardon River landing to a decommissioned kaolin mine north of Namaleta Creek. Temporary branch haul roads would be used to link with the existing haul road
- upgrading of an existing accommodation camp for 100 beds for construction workforce and mining operations staff
- upgrading of an existing ramp to improve access for delivery of fuel, food and other amenities, site equipment, etc.
- a process water pumping station at the kaolin mine pit with existing pipeline to water storage tanks at Skardon River landing (not for beneficiation purpose). This pipeline runs adjacent to the existing north-south haul road
- use of an existing sediment retention dam for the management of stormwater run-off from facilities at the Skardon River landing site.

The following product capacities in shipping and transshipment and operational times were proposed:

- product bauxite would be exported by 70,000 ton Panamax ships
- transshipment using two 4000-5000 ton barges
- barges would work 24 hours seven days a week with a loading rate up to 2000 tons/hour.

The annual water requirements for dust suppression, watering haul roads and plant and equipment washdown would be approximately 148 megalitres per annum using the existing water pipeline infrastructure. The annual power supply would have an anticipated average capacity of 3 megawatts (MW) and would be supplied by three 1MW generators fitted on semi-trucks.

Employees would be accommodated in the upgraded accommodation camp during the construction and the mining operation phases. The project would require approximately 120 employees during construction and 160 employees during operation.

Environmental Protection Act 1994 (Queensland)

On 20 January 2014, the Department of Natural Resources and Mining approved the existing mining leases to include mining bauxite. Gulf Alumina has applied for an amendment to their environmental authority (EA) for bauxite mining within the existing mining leases as the current EA only allows for mining kaolin and operating an associated pilot plant. EHP decided that the proposed amendment is a major amendment under sections 228 and 229 of the *Environmental Protection Act 1994* (EP Act). On 19 May 2014, EHP notified Gulf Alumina Limited that the amendment application requires assessment by environmental impact statement (EIS).

Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The proposed project was referred on 14 August 2014 to the Commonwealth Department of the Environment (EPBC 2014/7305). On 11 September 2014, the Minister for the Environment determined the proposed project to be a controlled action under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. The controlling provisions are sections 18 and 18A (listed threatened species and communities), 20 and 20A (listed migratory species) and 23 and 24A (Commonwealth marine areas). The project will be assessed under the bilateral agreement between the Commonwealth and the State of Queensland using the EIS prepared under the EP Act.

Part A About these terms of reference

1 Statutory basis

This section draws attention to the project assessment information requirements of the EP Act administered by the Department of Environment and Heritage Protection (EHP). While these terms of reference (TOR) aim to seek information corresponding to these requirements, proponents should confirm that the EIS addresses all relevant statutory requirements, and also meets the relevant information requirements of other Commonwealth and state regulatory authorities.

These TOR apply to the assessment of resource projects that require assessment under the environmental impact statement (EIS) process requirements set out in chapter 3, part 1, of the EP Act or for an action that involves an interest in land in a protected area for which an EIS is required under sections 39A and 39B of the *Nature Conservation Act 1992*.

The key information requirements of the EP Act that must be addressed in an EIS are:

- the requirements of section 40 of the EP Act, which specifies the purpose of an EIS and of the EIS process
- sections 125 and 126 which set out the general information requirements for applications for an environmental authority (EA)
- schedule 1 of the Environmental Protection Regulation 2008 (EP Regulation)—matters to be addressed by assessment under the bilateral agreement between the Commonwealth and the State of Queensland
- the environmental objectives and performance outcomes specified in schedule 5, part 3, table 1 of the EP Regulation.

Section 139 of the EP Act states that the information stage of the EA application process does not apply if the EIS process under the EP Act is complete (unless there has been a subsequent change to the project). Consequently, if the project is to proceed, it is particularly important that the EIS provide all the information needed to enable the issuing of an EA for the project as set out in these TOR in conjunction with the guidance material at: <http://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html>.

Chapter 4 of the EP Regulation prescribes the regulatory requirements with which the administering authority is required to comply for making environmental management decisions—including the issuing of an EA. To facilitate this, EHP has developed a set of model conditions for resource projects, which should form the basis for proposed draft EA conditions and general environmental protection commitments in the EIS. The EIS should describe impact mitigation measures in the context of these model conditions.

2 Accredited process for controlled actions under Commonwealth¹ legislation

The Australian Government Minister for the Environment has determined the project is a ‘controlled action’ under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to likely significant impacts on matters of national environmental significance (MNES), requiring assessment by an EIS process accredited under the Bilateral Agreement.

The EIS must state the controlling provisions for the project and describe the particular aspects of the environment leading to the controlled action declaration under the EPBC Act. The EIS must address relevant impacts on the ‘controlling provisions’ and all matters relating to them and provide enough information about the projects and its impacts to allow the Australian Government Environment Minister to make an informed decision on whether to approve the project under the EPBC Act.

The assessment of the potential impacts, mitigation measures and any offsets for residual significant impacts must be dealt with in a stand-alone section of the EIS that fully addresses the matters relevant to the controlling provisions. Requirements for MNES are set out in Appendix 2 (Matters of national environmental significance of the TOR). The information provided on these matters must be consistent with the relevant aspects of other sections in the EIS, for example Section 8.2 Flora and fauna.

The EIS must also address the matters prescribed in section 6 and in Schedule 1 of the EP Regulation.

3 EIS guidelines

The TOR must be read in conjunction guidance material at: <http://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html>. In addition, subject-specific guidelines are referenced throughout the TOR. Refer to Appendix 1 for a list of these policies and guidelines. Additional technical guidelines on how to comply with the TOR and information about the project or the EIS process conducted under the EP Act can be accessed from the EHP website at www.ehp.qld.gov.au or on the Queensland Government’s Business and Industry Portal at www.business.qld.gov.au.

¹ This section applies where the proponent has received confirmation from the Australian Government Environmental Agency that the project is a controlled action under the EPBC Act and that it is to be assessed under an EIS accredited under the bilateral agreement.

Part B Content of the EIS

1 General approach

- 1.1 For the purposes of the EIS process, 'environment' is defined in section 8 of the EP Act.
- 1.2 The EIS should give priority to the critical matters associated with the project (specified in section 7 of the TOR).
- 1.3 The detail in which the EIS deals with matters relevant to the project should be proportional to the scale of the impacts on environmental values. When determining the scale of an impact, consider its intensity, duration, cumulative effect, irreversibility, the risk of environmental harm, management strategies and offsets provisions.
- 1.4 Each chapter of the EIS must include a summary of impacts and proposed mitigation measures.
- 1.5 Notwithstanding the requirements of this TOR, should a substantive issue be identified in the preparation of the EIS, this matter should be fully addressed in the EIS.

2 Mandatory requirements of an EIS

- 2.1 Describe the project including all aspects subject to this assessment. The project description should include all on and off lease activities relevant to the project including construction, operation and decommissioning activities. If the delivery of the project is to be staged, the nature and timing of the stages should be fully described.
- 2.2 For all the relevant matters, the EIS must identify and describe the environmental values² that must be protected. Environmental values are specified in the EP Act, the EP Regulation, environmental protection policies (EPPs) and relevant guidelines.³
- 2.3 The assessment should cover both the short and long-term scenarios and state whether any relevant impacts are likely to be irreversible.
- 2.4 Provide all available baseline information relevant to the environmental risks of the project. Provide details about the quality of the information provided, in particular: the source of the information; how recent the information is; how the reliability of the information was tested; and any uncertainties in the information.
- 2.5 Demonstrate how the construction, operation and decommissioning (to the extent known) of the project would be consistent with best practice environmental management and would meet all statutory and regulatory requirements of the Commonwealth, state and local government. In general, the hierarchy for managing likely impacts is: (a) to avoid; (b) to minimise or mitigate; and (c) if necessary, and possible, to offset. Where relevant, avoidance and mitigation strategies and actions should be described in the context of EHP model conditions.
- 2.6 Provide detailed strategies in regard to all critical matters for the protection, or enhancement as desirable, of all relevant environmental values in terms of outcomes and possible conditions that can be measured and audited.
- 2.7 Impact minimisation measures should include ongoing monitoring and implementation of an adaptive management approach, as relevant, based on monitoring. The proposed measures should provide confidence that, based on current technologies, the impacts can be effectively managed over the long-term.
- 2.8 Present feasible alternatives of the project's configuration (including individual elements) that may improve environmental outcomes. Discuss the consequences of not proceeding with the project.

² Defined in section 9 of the EP Act. See also 125(l)(i)(A) of the EP Act.

³ For example, the Queensland Water Quality Guidelines and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (refer to Appendix 1 for details).

- 2.9 For unproven elements of a resource extraction or processing process, technology or activity, identify and describe any global leading practice environmental management that would apply.

3 Further requirements of an EIS

- 3.1 The assessment and supporting information should be sufficient for the administering authority to decide whether an approval should be granted. Sufficient information should be included to enable approval conditions, such as the existing model EA conditions, to be utilised.
- 3.2 To the extent of the information available, the assessment should endeavour to predict the cumulative impact⁴ of the project on environmental values over time and in combination with impacts created by the activities of other adjacent and upstream and downstream developments and landholders—as detected by baseline monitoring. This will inform the decision on the EIS and the setting of conditions. The absence of a comprehensive cumulative impacts analysis need not be fatal to the project. The EIS should also outline ways in which the cumulative impact assessment and management could subsequently be progressed further on a collective basis.
- 3.3 Include a consolidated description of all the proponent's commitments to implement management measures (including monitoring programs). Should the project proceed, these should be able to be carried over into the approval conditions as relevant.
- 3.4 Provide all geographical coordinates throughout the EIS in latitude and longitude against the Geocentric Datum of Australia 1994 (GDA94).
- 3.5 An appropriate public consultation program is essential to the impact assessment process. The proponent should consult with local, Queensland and Australian government authorities, and potentially affected local communities.
- 3.6 The EIS should describe the consultation that has taken place and how the responses from the community and agencies have been incorporated into the design and outcomes of the project. Any proposed future consultation activities should be described as well as how the results of this consultation will be used in the ongoing management of the project.

4 Executive summary

- 4.1 The executive summary should describe the project and convey the most important and preferred aspects and environmental management commitments relating to the project in a concise and readable form. It should use plain English, avoid jargon, be written as a stand-alone document and be structured to follow the EIS. It should be easy to reproduce and distribute on request to those who may not wish to read or purchase the whole EIS.

⁴ Cumulative impact is defined as 'combined impacts from all relevant sources (developments and other activities in the area)'.

5 Introduction

- 5.1 Clearly explain the function of the EIS, why it has been prepared and what it sets out to achieve. Include an overview of the structure of the document.

Project proponent

- 5.2 Describe the proponent's experience, including:
- the designated proponent's full name, postal address and Australian Business Number, if relevant (including details of any joint venture partners)
 - the nature and extent of business activities
 - environmental record, including a list of any breach of relevant environmental laws during the previous 10 years
 - the proponent's environmental, health, safety and community policies.

The environmental impact assessment process

- 5.3 The EIS should describe the environmental impact assessment process to ensure readers are informed of the process to be followed and are aware of any opportunities for input and participation.
- 5.4 Inform the reader how and when properly made public submissions on the EIS will be addressed and taken into account in the decision-making process.

Project approvals process

- 5.5 Describe the approvals required to enable the project to be constructed and operated. Explain how the environmental impact assessment process (and the EIS itself) informs the issue of the leases/licences/permits/consents required by the proponent before construction can commence and that would allow for the operation of the project. Provide a flow chart indicating the key approvals and opportunities for public comment. Guidance on typical associated approvals can be accessed from <https://www.business.qld.gov.au/industry>.

6 Project description

Proposed development

- 6.1 The EIS must describe and illustrate at least the following specific information about the proposed project:
- the project's title
 - the project, its objectives, and expected capital expenditure
 - rationale for the project
 - the nature and scale of activities to be undertaken and whether it is a greenfield or brownfield site
 - the regional and local context of the project's footprint (with maps at suitable scales)
 - relationship to other major projects (of which the proponent should reasonably be aware)
 - the workforce numbers to be employed by the project during its various phases, where personnel would be accommodated and, where relevant, the likely recruitment and rostering arrangements to be adopted
 - the proposed construction staging and likely schedule of works.
- 6.2 Describe and show on plans, at an appropriate scale, the proposed methods and facilities to be used for product storage and for transferring product from the processing facility to the storage facilities and/or from the storage facilities to the transport facilities. Descriptions should include all infrastructure elements appropriate to the project proposal, including haul and access roads, causeways, stockpile areas, barge

loading facilities and any areas of bed levelling. Include discussion of any environmental design features of these facilities including bunding of storage facilities.

Site description

- 6.3 Provide real property descriptions of the project land and adjacent properties; any easements; any underlying resource tenures; and identification number of any resource activity lease for the project land that is subject to application. Key transport, state-controlled roads, air, haul roads, floating off-shore transshipment facility, port/sea and other infrastructure in the region relevant to the project and to the site should be described and mapped.
- 6.4 Describe and illustrate the topography of the project site and surrounding area, and highlight any significant features shown on the maps. Maps should have contours at suitable increments relevant to the scale, location, potential impacts and type of project, shown with respect to Australian Height Datum (AHD) and drafted to Geocentric Datum of Australia 1994 (GDA94).
- 6.5 Where appropriate, describe and map in plan and cross-sections the geology and terrestrial and coastal landforms, including catchments, of the project area. Show geological structures, such as aquifers, faults, coastal and marine resources and economic resources that could have an influence on, or be influenced by, the project's activities.
- 6.6 Where appropriate, describe, map and illustrate soil types and profiles of the project area at a scale relevant to the proposed project. Identify soils that would require particular management due to wetness, erosivity, depth, acidity, salinity or other feature, including acid sulphate soils.

Climate

- 6.7 Describe the site's climate patterns that are relevant to the environmental assessment, with particular regard to discharges to water and air and the propagation of noise. Climate information should be presented in a statistical form including long-term averages and extreme values, as necessary.
- 6.8 Identify the vulnerability of the area to natural and induced hazards, including floods, bushfires and cyclones. Consider the relative frequency and magnitude of these events together with the risk they pose to the construction, operation and rehabilitation of the project. Measures that would be taken to minimise the risks of these events should be described.

Proposed construction and operations

- 6.9 Describe the following information about the proposal:
- existing infrastructure (including existing marine / port infrastructure) and easements on the potentially affected land
 - the proposed extractive and processing methods, associated equipment and techniques
 - the sequencing and staging of activities
 - the chemicals or hazardous materials to be used
 - the locations of new or altered infrastructure necessary for the project at all stages of its development, including on and off lease areas
 - any on or off lease project activity that is a prescribed environmentally relevant activity
 - supply of goods and services including likely procurement models for both the construction and operation phases
 - product markets, including shipping details, destinations, transshipment operations, export routes.

7 Assessment of critical matters

- 7.1 This section sets out the scope of critical matters that should be given detailed treatment in the EIS. A critical matter is an aspect of the proposal that has one or more of the following characteristics:
- a high or medium probability of causing serious or material environmental harm or a high probability of causing an environmental nuisance⁵
 - considered important by the administering authority and/or there is a public perception that an activity has the potential to cause serious or material environmental harm or an environmental nuisance, or, the activity has been the subject of extensive media coverage
 - land, flora and fauna (see section 8.2)
 - identified matters of state environmental significance under the State Planning Policy (July 2014) (see section 8.2)
 - water quality (see section 8.4)
 - coastal environment (see section 8.14).
- 7.2 The final scope of critical matters will be determined by the administering authority when finalising the TOR. In the course of preparing the EIS, information may become available that warrants a change of scope.

Matters of national environmental significance

- 7.3 The Australian Government Environment Minister has determined that the project has impacts on MNES (EPBC 2014/7305). The assessment of the potential impacts, mitigation measures and any offsets for residual impacts must be dealt with in a stand-alone section of the EIS that fully addresses the matters relevant to the controlling provisions. Refer to Appendix 2 for detailed MNES TOR requirements and EPBC Act controlling provisions. The information provided on these matters must be consistent with the relevant aspects of other sections in the EIS, for example Section 8.2 Flora and fauna.

8 Assessment of routine matters

8.1 Routine matters

- 8.1.1 The following subsections list the routine matters for resource projects, with (where applicable) a reference to the objectives defined in the EP Regulation. In some cases, not all the matters may be relevant, while in others the list may not be exhaustive. Where applicable, refer to the objective of the EP Regulation (section 3) to ensure ecologically sustainable development is achieved.
- 8.1.2 For each routine matter identified below, the level of detail should be proportional to the scale of potential impacts. As a minimum, the proponent should supply sufficient information that confirms the risks/impacts to the environment are not significant.

⁵ 'Material environmental harm', 'serious environmental harm' and 'environmental nuisance' are defined in Part 3, sections 15, 16 and 17 of the *Environmental Protection Act 1994*.

8.2 Land, flora and fauna (this is also a critical matter under section 7)

Objectives and performance outcomes

The environmental objectives to be met under the EP Act are that the:

- activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated terrestrial, aquatic, coastal and marine flora and fauna
- choice of the site, at which the activity is to be carried out, minimises serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places
- location for the activity on a site protects all environmental values relevant to adjacent sensitive use
- design of the facility permits the operation of the site, at which the activity is to be carried out, in accordance with best practice environmental management.

The performance outcomes corresponding to these objectives are in Schedule 5, Tables 1 and 2 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements—land use

- 8.2.1 Describe potential impacts of the proposed land uses taking into consideration the proposed measures that would be used to avoid or minimise impacts. The impact prediction must address:
- landscape (including visual amenity) and land uses in and around the project area, referring to regional plans and local government planning schemes
 - any existing mining, petroleum, geothermal and greenhouse gas storage tenures overlying or adjacent to the project site, and any to be applied for as part of this project
 - any infrastructure proposed to be located within, or which may have impacts on, the Stock Route Network.
- 8.2.2 Address the requirements of the Cape York Regional Plan, Queensland Government, August 2014.
- 8.2.3 For surface mines and projects with activities that disturb the land surface, describe the proposed land use during and after the project. Show how the land form during and post mining will be stable and non-eroding over time (describe how current technologies will be applied).
- 8.2.4 Detail any known or potential sources of contaminated land that could be impacted by the project. Describe how any proposed land use may result in land becoming contaminated.
- 8.2.5 Identify existing or potential native title rights and interests possibly impacted by the project and the potential for managing those impacts by an Indigenous Land Use Agreement or other measure.

Information requirements—rehabilitation

- 8.2.6 The EIS should provide information based on relevant guidelines, current best practice approaches and legislative requirements about the strategies and methods for progressive and final rehabilitation of the environment disturbed by the project and decommissioning.
- 8.2.7 Develop a preferred rehabilitation strategy that would minimise the amount of land disturbed at any one time, and minimise the residual loss of land and water bodies with ecological or productive value. Show the expected final topography of the site with any excavations, waste areas and dam sites on suitably scaled maps. Illustrate the proposed final land uses.
- 8.2.8 Describe and illustrate where final voids, mined areas and uncompacted overburden and workings at the end of operations would lie in relation to flood levels in the Skardon River and its local tributaries adjacent to the mine, and Namaleta Creek.
- 8.2.9 Describe rehabilitation success criteria that would be used to measure progress and completion.
- 8.2.10 Notwithstanding that management techniques may improve over the life of the project, and legislative requirements may change, the EIS needs to give confidence that all potential high-impact elements of the project (e.g. spoil dumps, voids, tailings and water management dams, creek diversions, etc.) are capable

of being managed and rehabilitated to achieve acceptable land use capabilities/suitability, to be stable and self-sustaining and to prevent upstream and downstream surface and groundwater contamination.

Information requirements—flora and fauna

- 8.2.11 Describe the likely impacts on the biodiversity and natural environmental values of affected areas arising from the construction, operation and eventual decommissioning of the project (where known). Take into account any proposed avoidance and/or mitigation measures. The assessment should include, but not be limited to, the following key elements:
- matters of state environmental significance and national environmental significance
 - coastal, marine, terrestrial and aquatic ecosystems (including groundwater-dependent ecosystems) and their interaction
 - biological diversity including listed flora and fauna species and regional ecosystems
 - the integrity of ecological processes, including habitats of threatened, near-threatened or special least-concern species
 - connectivity of habitats and ecosystems
 - the integrity of landscapes and places, including wilderness and similar natural places
 - chronic, low-level exposure to contaminants or the bio-accumulation of contaminants
 - impacts on marine, terrestrial and aquatic ecosystems and associated native flora and fauna due to wastes and pollutants at the site, particularly those related to any form of toxicants in:
 - surface and groundwater
 - natural water courses
 - stormwater run-off
 - surface run-off
 - run-off from any bunded areas holding chemicals and/or the sewage treatment plant
 - run-off from surface spoil
 - impact of waterway barriers on fish passage in all waterways mapped on the Queensland Waterways for Waterway Barrier Works spatial data layer
 - likely impacts of shipping and barge movements on estuarine and marine fauna.
- 8.2.12 Describe any actions of the project that require an authority under the *Nature Conservation Act 1992*, and/or are assessable development for the purposes of the *Vegetation Management Act 1999*⁶, the *Fisheries Act 1994* and the *Sustainable Planning Act 2009*.
- 8.2.13 Propose practical measures for protecting or enhancing natural values, and assess how the nominated quantitative indicators and standards may be achieved for nature conservation management. In particular, address measures to protect or preserve any threatened or near-threatened species.
- 8.2.14 Specifically address any obligations imposed by State or Commonwealth legislation or policy or international treaty obligations, such as the China–Australia Migratory Bird Agreement, Japan–Australia Migratory Bird Agreement, or Republic of Korea–Australia Migratory Bird Agreement.
- 8.2.15 Assess the need for buffer zones and the retention, rehabilitation or planting of movement corridors, and propose measures that would avoid the need for waterway barriers, or propose measures to mitigate the impacts of their construction and operation. The measures proposed for the progressive rehabilitation of disturbed areas should include rehabilitation success criteria in relation to natural values that would be used to measure the progress.
- 8.2.16 Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed. Proposals for the rehabilitation of disturbed areas should incorporate, where appropriate, provision of nest hollows and ground litter.

⁶ This is notwithstanding that the *Vegetation Management Act 1999* does not apply to mining projects.

- 8.2.17 Assess the role of buffer zones in sustaining fisheries resources through maintaining connectivity between coastal and riparian vegetation and estuarine and freshwater reaches of catchments.

Offsets

- 8.2.18 Where Queensland legislation or a specific-issue offset policy requires an offset for a significant residual impact on a particular natural environmental value, the offset proposal(s) shall be presented in a form consistent with relevant legislation and policy.
- 8.2.19 The proposed offsets should be consistent with the requirements set out in any applicable legislation or specific-issue offset policies. Where Commonwealth offset policy requires an offset for residual significant impacts on a MNES, the offset proposal(s) must be consistent with the requirements of the EPBC Act Environmental Offsets Policy (October 2012) and Offsets Assessment Guide.

8.3 Biosecurity

Objective

The construction and operation of the project should aim to ensure:

- the introduction and spread of weeds, pests (including marine pests) and disease is minimised
- existing weeds and pests, including marine pests, are controlled.

Information requirements

- 8.3.1 Propose detailed measures to control and limit the spread of pests and weeds on the project site and adjacent areas, particularly declared plants and animals under the *Land Protection (Pest and Stock Route Management) Act 2002* and the *Plant Protection Act 1989*. Weed and pest animal management measures should be aligned with local government pest management priorities.
- 8.3.2 Propose measures to control the introduction and limit the spread of marine pests.

8.4 Water quality (this is also a critical matter under section 7)

Objective and performance outcomes

The environmental objectives to be met under the EP Act are that the activity (project) be operated in a way that:

- minimises harm to the environmental values of waters, including freshwater, estuarine and marine
- protects the environmental values of wetlands
- protects the environmental values of groundwater and any associated surface ecological systems.

The performance outcomes corresponding to this objective are in Schedule 5, Table 1 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements

- 8.4.1 Detail the environmental values of waters within the area within the area that may be affected by the project with reference to the Environmental Protection (Water) Policy 2009 and section 9 the EP Act, including any human uses of the water and any cultural values.
- 8.4.2 Detail the water quality objectives applicable to the environmental values and describe how these will be met.
- 8.4.3 Detail the chemical and physical characteristics of surface waters, groundwater, estuarine and marine water within the area that may be affected by the project and at suitable reference locations.
- 8.4.4 Identify how the development will buffer and manage potential impacts on significant wetlands, waterways and ecosystems.
- 8.4.5 Identify the quantity, quality and location of all potential releases of contaminants (such as spilled products during ship loading or disturbance of acid sulphate soil), water and waste water from the project,

whether as point sources or diffuse sources (such as stormwater run-off and irrigation to land of treated sewage effluent). Assess the likely impacts of any releases on the quality and quantity of receiving waters taking into consideration the assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts, including erosion and sediment control strategies and compliance with the management hierarchy and management intent under the Environmental Protection (Water) Policy 2009.

- 8.4.6 Identify the impacts of bed levelling and the offshore transshipment operation on marine water quality, including potential impacts on seagrass, coral and water quality due to increased water turbidity and other contaminants due to the disturbance of substrate, the disposal and/or relocation of material. Provide strategies to avoid and address potential impacts. Refer to section 8.14 (Coastal environment) for further information requirements on bed levelling.
- 8.4.7 Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed. Identify standards and indicators which will be used to describe the ecological values and health of surface water environments.

8.5 Water resources

Objectives

The construction and operation of the project should aim to meet the following objectives:

- equitable, sustainable and efficient use of water resources
- maintenance of environmental flows and water quality (freshwater, marine, estuarine, groundwater) to support the long term viability of aquatic, estuarine, coastal and marine ecosystems (including groundwater dependent ecosystems)
- the condition and natural functions of water bodies (e.g. lakes, springs, watercourses, wetlands, estuarine and marine) are maintained—including the stability of beds and banks of watercourses, coastal resources and values.

Information requirements

- 8.5.1 Provide details of any proposed impoundment, extraction, discharge, injection, use or loss of surface water or groundwater, including Great Artesian Basin groundwater. Identify any approval or allocation that would be needed under the *Water Act 2000*.
- 8.5.2 Detail any significant diversion or interception of overland flow (for example from lowering ground level due to mining). Include maps of suitable scale showing the location of diversions and other water-related mining infrastructure.
- 8.5.3 Describe the options for supplying water to the project, and assess any potential consequential impacts in relation to the objectives of any water resource plan, resource operations plan and wild river declaration that may apply.
- 8.5.4 Develop hydrological models as necessary to describe the inputs, movements, exchanges and outputs of all significant quantities of surface water and groundwater resources that may be affected by the project. The models should address the range of climatic conditions that may be experienced at the site and include a site water balance. This should enable a description of the project's impacts and proposed mitigation strategy to manage these at the local scale and in a regional context including proposed:
- changes in flow regimes (surface and groundwater) from mining operations, diversions, water take (including dewatering) and discharges
 - monitor and adopt measures to avoid impact on local swamps, notably Lunette and Bigfoot Swamps, Skardon River and Namaleta Creek
 - direct and indirect impacts on water resources arising from the development, such as (but not limited to) impacts to the drainage lines which recharge local swamps, creeks and river systems, and provide strategies to avoid and address potential impacts.
- 8.5.5 Provide information on how clean storm water run-off would be kept separate from dirty surface water run-off.
- 8.5.6 Requirement of potable water needs to be outlined for the project, including the temporary

demands during the construction period. Details should be provided of the proposed water supply to meet such requirements. Describe onsite water storage and treatment requirements for use by the workforce.

- 8.5.7 Evaluate how security for existing lawful users of water, if any, will be maintained when the development is operational.

8.6 Flooding and regulated structures

Objective

The construction and operation of the project should aim to ensure the risk of, and the adverse impacts from flooding hazards or dam failure are avoided, minimised or mitigated to protect people, property and the environment.

Information requirements

- 8.6.1 Describe current flood risk for a range of annual exceedence probabilities for potentially affected waterways and low lying areas. Assess how the project may potentially change flooding and run-off characteristics⁷. The assessment should consider all infrastructure associated with the project including levees, roads and linear infrastructure and all proposed measures to avoid or minimise impacts.
- 8.6.2 List and describe all dams or levees proposed on the project site and undertake an assessment to determine the hazard category of each dam or levee (low, significant, or high), according to the criteria in the EHP Manual for Assessing Consequence Categories and Hydraulic Performance of Structures. Refer also to the requirements under section 8.13 Hazards and safety of the TOR.
- 8.6.3 If applicable, list and describe all dams or levees proposed on the project site and undertake an assessment to determine the hazard category of each dam or levee (low, significant, or high), according to the criteria in the EHP Manual for Assessing Consequence Categories and Hydraulic Performance of Structures.
- 8.6.4 List hazards and safety risks associated with flooding, including safety risks to persons, and impacts of flooding on dams, levees and/or associated infrastructure located within or outside the project area.

8.7 Air

Objectives and performance outcomes

The environmental objective to be met under the EP Act is that the activity will be operated in a way that protects the environmental values of air.

The performance outcomes corresponding to this objective are in Schedule 5, Table 1 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements

- 8.7.1 Fully describe the characteristics (through an emissions inventory) of the contaminants or materials released when carrying out the activity (point source and fugitive emissions). Emissions (point source and fugitive) during construction, commissioning, upset conditions, operation and closure should be described.
- 8.7.2 Predict the impacts of the releases from the activity on environmental values of the receiving environment using recognised quality assured methods and/or relevant publically available information. The description of impacts should take into consideration the assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts. The impact prediction must:

⁷ This may require the use of modelling or other appropriate analytical and predictive tools.

- describe and illustrate the locations of sensitive receptors, e.g. existing residences, places of work, schools, etc., agricultural or ecologically significant species and habitats that could be impacted by emissions from the project
 - address residual impacts on the environmental values (including appropriate indicators and air quality objectives) of the air receiving environment, with reference to sensitive receptors⁸, using recognised quality assured methods and/or a review of relevant publically available information. This should include all relevant values potentially impacted by the activity, under the EP Act, EP Regulation and Environmental Protection (Air) Policy 2008 (EPP (Air)).
 - address the cumulative impact of the release with other estimates of releases of contaminants, materials or wastes associated with existing development and possible future development (as described by approved plans and existing project approvals).
 - compare air quality guidelines with predicted values at sensitive receptor locations and/or the site boundary
 - quantify the human health risk and amenity impacts associated with emissions from the project for all contaminants whether or not they are covered by the National Environmental Protection (Ambient Air Quality) Measure or the EPP (Air).
- 8.7.3 Describe the proposed mitigation measures and how the proposed activity will be consistent with best practice environmental management. Where a government plan is relevant to the activity or site where the activity is proposed, describe the activity's consistency with that plan.
- 8.7.4 Describe how the achievement of the objectives would be monitored, audited and reported, and how corrective actions would be managed.

8.8 Noise and vibration

Objective and performance outcomes

The environmental objective to be met under the EP Act is that the activity will be operated in a way that protects the environmental values of the acoustic environment.

The performance outcomes corresponding to these objectives are in Schedule 5, Table 1 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements

- 8.8.1 Fully describe the characteristics of the noise and vibration sources that would be emitted when carrying out the activity (point source and general emissions). Noise and vibration emissions (including fugitive sources) that may occur during construction, commissioning, upset conditions, operation and closure should be described.
- 8.8.2 Predict the impacts of the noise emissions from the activity on the environmental values of the receiving environment, with reference to sensitive receptors¹⁰, using recognised quality assured methods and/or relevant publically available information. Taking into account the practices and procedures that would be used to avoid or minimise impacts, the impact prediction must address the:
- describe and illustrate the locations of sensitive receptors, e.g. existing residences, places of work, schools, etc., agricultural or ecologically significant species and habitats that could be impacted by emissions from the project activity's consistency with the objectives
 - cumulative impact of the noise with other estimated emissions of noise associated with existing development and possible future development (as described by approved plans)
 - potential impacts of any low-frequency (<200 Hz) noise emissions.

⁸ For example, the locations of existing residences, places of work, schools, etc., agricultural or ecologically significant areas/species that could be impacted.

- 8.8.3 Describe how the proposed activity would be managed to be consistent with best practice environmental management for the activity. Where a government plan is relevant to the activity, or the site where the activity is proposed, describe the activity's consistency with that plan.
- 8.8.4 Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed.

8.9 Waste management

Objective and performance outcomes

The environmental objective to be met under the EP Act is that any waste transported, generated, or received as part of carrying out the activity is managed in a way that protects all environmental values.

The performance outcomes corresponding to these objectives are in Schedule 5, Table 1 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements

- 8.9.1 Describe all the expected significant waste streams from the proposed project activities (such as vegetation, bauxite oversize material, excavated subsoil, reject bauxite, non-bauxite rock and general waste), during the construction, operational, rehabilitation and decommissioning phases of the project.
- 8.9.2 Describe the quantity, form (liquid, solid, gas), hazard, and toxicity of each significant waste, as well as any attributes that may affect its likelihood of dispersal in the environment, as well the associated risk of causing environmental harm.
- 8.9.3 Define and describe the objectives and practical measures for protecting or enhancing environmental values from impacts by wastes.
- 8.9.4 Assess the proposed management measures against the preferred waste management hierarchy, namely: avoid waste generation; cleaner production; recycle; reuse; reprocess and reclaim; waste to energy; treatment; disposal. This includes the generation and storage of waste.
- 8.9.5 Describe how nominated quantitative standards and indicators may be achieved for waste management, and how the achievement of the objectives would be monitored, audited and managed.
- 8.9.6 Detail waste management planning for the proposed project especially how these concepts have been applied to prevent or minimise environmental impacts due to waste at each stage of the project.
- 8.9.7 Describe how the code requirements of the State Planning Policy (July 2014), in particular 'Ship-sourced pollutants reception facilities in marinas' would be complied with in the design of the project and in any subsequent approvals.

8.10 Cultural heritage

Objective

The construction and operation of the project should aim to ensure that the nature and scale of the project does not compromise the cultural heritage significance of a heritage place or heritage area.

Information requirements

- 8.10.1 Unless section 86 of the *Aboriginal Cultural Heritage Act 2003* (ACH Act) applies, the proponent must develop a Cultural Heritage Management Plan in accordance with the requirements of Part 7 of the ACH Act).
- 8.10.2 For non-Indigenous historical heritage, undertake a study of, and describe, the known and potential historical cultural and landscape heritage values of the area potentially affected by the project. Provide strategies to mitigate and manage any negative impacts on non-Indigenous cultural heritage values and enhance any positive impacts.

8.11 Social and economic

Objectives

The construction and operation of the project should aim to:

- avoid or mitigate adverse social and economic impacts arising from the project
- capitalise on opportunities potentially available to affected communities for capable local industries and communities where this does not have a significant negative impact on the project or reduce net economic benefits to the state.

Information requirements

- 8.11.1 Describe the likely social impacts (positive and negative) on affected communities taking into account proposed mitigation measures.
- 8.11.2 Describe the likely impacts (positive and negative) of the project on the economies materially impacted by the project. The analysis should describe both the potential and direct economic impacts including estimated costs, if material, on industry and the community.
- 8.11.3 The assessment should identify opportunities to capture the economic benefits of the project, including:
- strategies for ensuring local suppliers of goods and services receive full, fair and reasonable opportunity to tender for work throughout the life of the project through adopting policies such as the Queensland Resources and Energy Sector Code of Practice for Local Content administered by Queensland Resources Council
 - employment strategies for local residents, and for members of Indigenous communities and people with a disability across Queensland
 - opportunities to support the agricultural and tourism industries
 - recruitment and training programs to be offered.
- 8.11.4 Identify recreational, commercial or indigenous fisheries potentially impacted and undertake consultation.

8.12 Transport

Objectives

The construction and operation of the project should aim to:

- maintain the safety and efficiency of all affected transport modes for the project workforce and other transport system users
- minimise and mitigate impacts on the condition of transport infrastructure
- ensure any required works are compatible with existing infrastructure and future transport corridors.

Information requirements

- 8.12.1 The EIS should include a clear summary of the total transport task for the project (construction, production and decommissioning), including workforce (fly in–fly out arrangements), inputs and outputs, during the construction and operational phases. Proponents should make appropriate modal choices to ensure transport efficiency and minimise impacts on the community
- 8.12.2 Present the transport assessment in separate sections for each project affected mode (road, air and sea) as appropriate for each phase of the project. Provide sufficient information to allow an independent assessment of how existing transport infrastructure will be affected by project transport at the local and regional level (e.g. local roads and state-controlled roads).
- 8.12.3 Include details of the adopted assessment methodology:
- for impacts on roads: the road impact assessment report in accordance with the Guidelines for Assessment of Road Impacts of Development

- for impacts on maritime operations: the Maritime Safety Queensland *Guidelines for major* development proposals.

8.12.4 Discuss and recommend how identified impacts will be mitigated so as to meet the above objectives for each transport mode. Mitigation strategies may include works, contributions or management plans and are to be prepared in close consultation with relevant transport authorities (including local government). Strategies should consider those transport authorities' works program and forward planning, and be in accordance with the relevant methodologies, guidelines and design manuals.

8.13 Hazards and safety

Objectives

The construction and operation of the project should aim to ensure:

- the risk of, and the adverse impacts from, natural and man-made hazards are avoided, minimised or mitigated to protect people and property
- the community's resilience to natural hazards is maintained or enhanced
- developments involving the storage and handling of hazardous materials are appropriately located, designed and constructed to minimise health and safety risks to communities and individuals and adverse effects on the environment.

Information requirements

- 8.13.1 Describe the potential risks to people and property that may be associated with the project in the form of a preliminary risk assessment for all components of the project and in accordance with relevant standards. The assessment should include:
- potential hazards, accidents, spillages, fire and abnormal events that may occur during all stages of the project, including estimated probabilities of occurrence
 - hazard analysis and risk assessment in accordance with AS/NZS ISO 31000:2009 Risk Management—Principles and Guidelines and with HB203:2006 Environmental Risk Management Principles and Processes
 - identifying all hazardous substances to be used, stored, processed or produced and the rate of usage
 - potential wildlife hazards, natural events (e.g. cyclone, storm tide inundation, flooding, bushfire) and implications related to climate change.
 - a description of natural hazards that may affect the site and at a minimum the 1% annual exceedance probability (AEP) or 100 year average recurrence interval (ARI) level, including mapping of the potential hazard areas at the site
 - how development will avoid or mitigate the risks and how the development siting and layout responds to these hazards to minimise risks to personal safety and assets
 - how natural processes and the protective function of landforms and vegetation will be maintained in sea erosion and storm tide inundation areas
 - how the development will avoid the release of hazardous materials as a result of a natural hazard events.
- 8.13.2 Provide details on the safeguards that would reduce the likelihood and severity of hazards, consequences and risks to persons, within and adjacent to the project area(s). Identify the residual risk following application of mitigation measures. Present an assessment of the overall acceptability of the impacts of the project in light of the residual uncertainties and risk profile.
- 8.13.3 Provide an outline of the proposed integrated emergency management planning procedures (including evacuation plans, if required) for the range of situations identified in the risk assessment developed in this section.
- 8.13.4 Outline any consultation undertaken with the relevant emergency management authorities, including the Local Disaster Management Group.

8.14 Coastal environment (this is also a critical matter under section 7)

Objectives

- The construction and operation of the project should aim to ensure that all relevant state and Commonwealth legislation and guidelines are considered that relate to the coastal environment.
- The activity is developed and operated in a way that avoids environmental harm including impacts on terrestrial, estuarine, coastal and marine environmental values.
- The activity is developed and operated in a way that avoids and minimises adverse impacts on coastal processes, resources and scenic amenity of important natural coastal landscapes, views and vistas.
- The activity is to be carried out in accordance with best practice environmental management.
- The performance outcomes correspond to the relevant policies, legislation and guidelines and that sufficient evidence is supplied (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements

- 8.14.1 Describe the existing coastal environment, potential impacts, mitigation measures and possible offsets related to the project in the context of all state and Commonwealth legislation and guidelines.
- 8.14.2 Provide a description of the coastal processes relevant to coast affected by the project. This should include a description of the physical processes of the terrestrial, estuarine, coastal and marine environment.
- 8.14.3 Provide a description of physical and chemical characteristics of soils and sediments within the terrestrial, estuarine, coastal and marine environment potentially affected by the project. This is to include acid sulphate soils.
- 8.14.4 Provide details of the proposed bed levelling operations, including a schedule of ongoing maintenance requirements, at the mouth of the Skardon River including:
- navigation requirements of vessels trans-shipping material from the site including width, depth and location of navigation channels, turning basin or other works
 - location, volume, and the chemical and physical characteristics of the material (sediments) to be removed, reprofiled or relocated to provide navigational access
 - a description of the works necessary to maintain navigational access including equipment, timing, duration and tidal requirements
 - review of the historical behaviour of the river channel and mouth including channel migration and sand bank movements and how such changes will be addressed in the future where they impact on navigation
 - expected frequency of future bed levelling campaigns to maintain navigational access
 - location for the disposal of levelled material where this material is in excess of bed levelling capacity for required channel depth
 - a description of the impact of works on other river users or adjacent communities
 - prediction of potential impacts on marine environments, including direct and indirect impacts such as from physical disturbance and sediment plumes during construction and ongoing impacts during operations
 - management of associated impacts on sensitive environments such as seagrasses and coral reefs.
- 8.14.5 Develop and describe suitable indicators for measuring coastal resources and values, and set objectives to protect them in accordance with relevant State Planning Policy July 2014, guidelines and legislation.

- 8.14.6 Identify development outside the mining leases that is assessable development within the coastal zone, requiring approval under the *Sustainable Planning Act 1999*. Refer to the Department of State Development Infrastructure and Planning for relevant assessment requirements and guidance material⁹.
- 8.14.7 Detail a monitoring program that would audit the success of mitigation measures, measure whether objectives have been met, and describe corrective actions to be used if monitoring shows that objectives are not being met.

9 Appendices to the EIS

- 9.1 Appendices should provide the complete technical evidence used to develop assertions and findings in the main text of the EIS.
- 9.2 No significant issue or matter should be mentioned for the first time in an appendix—it must be addressed in the main text of the EIS.
- 9.3 Include a table listing the section of the EIS where each requirement of the TOR is addressed.
- 9.4 Include a glossary of terms and a list of acronyms and abbreviations.

Acronyms and abbreviations

The following acronyms and abbreviations have been used in this document.

Acronym/abbreviation	Definition
ACH Act	<i>Aboriginal Cultural Heritage Act 2003</i>
AHD	Australian Height Datum
Bilateral agreement	an agreement between the Commonwealth and the State of Queensland under section 45 of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> relating to environmental assessment
EIS	environmental impact statement
EP Act	<i>Environmental Protection Act 1994</i>
EP Regulation	Environmental Protection Regulation 2008
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cwlth)
EPP	Environmental Protection Policy (under the EP Act)
GDA94	Geocentric Datum of Australia 1994
MNES	matters of national environmental significance (under the EPBC Act)
TOR	terms of reference

⁹ <http://www.ehp.qld.gov.au/coastal/development/pdf/assessable-dev-under-coastal-act-em2066.pdf>

Appendix 1 Policies and guidelines

Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand 2000, *The Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian Water Association (Artarmon) and NZ Water and Wastes Association (Auckland), www.environment.gov.au/water/publications/quality/nwqms-guidelines-4-vol1.html

Department of Agriculture, Fisheries and Forestry, 2014, *Waterway Barrier Works Development Approvals*, Queensland Government, Brisbane, <https://www.daff.qld.gov.au/fisheries/habitats/fisheries-development/self-assessable-codes>

Department of Environment and Heritage Protection, 2014, *Information guideline for an environmental impact statement*, Queensland Government, Brisbane, <http://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines>

Department of Environment and Heritage Protection, 2013, *Assessable coastal development under the Sustainable Planning Act 2009*, EM2066, Version 4, <http://www.ehp.qld.gov.au/coastal/development/pdf/assessable-dev-under-coastal-act-em2066.pdf>

Department of Environment and Heritage Protection 2013, *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures*, November 2013, Queensland Government, Brisbane, <https://www.ehp.qld.gov.au/land/mining/pdf/mn-mi-assess-haz-cat-hyd-perf-dams-em635.pdf>

Department of Environment and Heritage Protection, 2014, *Model mining conditions*, Queensland Government, Brisbane, www.ehp.qld.gov.au/land/mining/guidelines.html

Department of Environment and Heritage Protection, 2014, *Guidelines and manuals*, Queensland Government, Brisbane, <http://www.ehp.qld.gov.au/land/mining/guidelines.html> and <http://www.ehp.qld.gov.au/licences-permits/guidelines.html> and <http://www.ehp.qld.gov.au/land/mining/guidelines.html>

Department of Environment and Resource Management, 2009, *Queensland Water Quality Guidelines, Version 3*, Queensland Government, Brisbane, www.ehp.qld.gov.au/water/pdf/water-quality-guidelines.pdf

Department of Main Roads, 2006, *Guidelines for Assessment of Road Impacts of Development*, Queensland Government, Brisbane, www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Guidelines-for-assessment-of-road-impacts-of-development.aspx

Department of State Development, Infrastructure and Planning, July 2014, *State Planning Policy*, Queensland Government, Brisbane, www.dsdip.qld.gov.au/about-planning/state-planning-policy.html

Department of State Development and Planning, 2014, *State Development Assessment Provisions (SDAP)*, Queensland Government, Brisbane, www.dsdip.qld.gov.au/development-applications/sdap.html

Department of State Development, Infrastructure and Planning, August 2014, *Cape York Regional Plan*, Queensland Government, Brisbane, <http://www.dsdip.qld.gov.au/resources/plan/cape-york/cape-york-regional-plan.pdf>

Maritime Safety Queensland 2013, *Guidelines for major development proposals*, Queensland Government, Brisbane, www.msq.qld.gov.au/Waterways/Major-development-proposals.aspx

The Coordinator-General, 2013, *Preparing an environmental impact statement: Guideline for proponents*, Department of State Development, Infrastructure and Planning, Brisbane, www.dsdip.qld.gov.au/fact-sheets-and-guidelines/coordinated-projects.html

The Coordinator-General, July 2013, *Social impact assessment guideline*, Department of State Development, Infrastructure and Planning, Queensland Government, Brisbane, <http://www.dsdip.qld.gov.au/resources/guideline/social-impact-assessment-guideline.pdf>

Queensland Government, 2014, *Environmental offsets and Environmental offsets framework*, Queensland Government, Brisbane, <http://www.qld.gov.au/environment/pollution/management/offsets/>

Queensland Government, 2014, *Business and industry portal*, Queensland Government, Brisbane, <https://www.business.qld.gov.au/industry/mining>

Queensland Resources Council, 2013, *Queensland Resources and Energy Sector Code of Practice for Local Content*, Queensland Resources Council, Brisbane, https://www.qrc.org.au/01_cms/details.asp?ID=3209

Appendix 2 Matters of national environmental significance

The proposed project was referred on 14 August 2014 to the Commonwealth Department of the Environment (EPBC 2014/7305). On 11 September 2014, the Minister for the Environment determined the proposed project to be a controlled action under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The controlling provisions are sections 18 and 18A (listed threatened species and communities), 20 and 20A (listed migratory species) and 23 and 24A (Commonwealth marine areas). The project will be assessed under the bilateral agreement between the Commonwealth and the State of Queensland using the EIS prepared under the *Environmental Protection Act 1994* (EP Act).

Terms of Reference for *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Requirements*

*Content provided by the Commonwealth Department of the Environment (refer to Schedule 2 of EP Act).

1 *Background and description of the action*

The Assessment Documentation must provide background to the action and describe in detail all components of the action for example (but not limited to), the construction, operational and (if relevant) decommissioning components of the action. This must include the precise location of all works to be undertaken (including associated offsite works and infrastructure), structures to be built or elements of the action that may have impacts on matters of national environmental significance (MNES).

The description of the action must also include details on how the works are to be undertaken (including stages of development and their timing) and design parameters for those aspects of the structures or elements of the action that may have relevant impacts.

The Assessment Documentation must include how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action.

The Assessment Documentation must also provide details on the current status of the action as well as the consequences of not proceeding with the action.

2 *The environment including MNES*

The Assessment Documentation must include a description of the environment and management practices of the proposal site and the surrounding areas and other areas that may be affected by the action. Include the relevant MNES protected by controlling provisions of Part 3 of the EPBC Act.

- (a) Listed threatened species and communities (including suitable habitat) that are or are likely to be present in the vicinity of the site, including the following details:
 - Details of the scope, timing/effort (survey season/s) and methodology for studies or surveys used to provide information on the listed species/community/habitat at the site (and in areas that may be impacted by the project). Include details of:
 - best practice survey guidelines are applied
 - how they are consistent with (or a justification for divergence from) published Australian Government guidelines and policy statements.
 - Include any relevant plans/agreements
- (b) Listed migratory species (including suitable habitat) that are or are likely to be present in the vicinity of the site, including the following details:
 - Details of the scope, timing/effort (survey season/s) and methodology for studies or surveys used to provide information on the listed species/habitat at the site (and in areas that may be impacted by the project). Include details of:

- best practice survey guidelines are applied
 - how these are consistent with (or a justification for divergence from) published Australian Government guidelines and policy statements.
 - Include any relevant plans/agreements, refer to Draft – Significant impact guidelines for 36 migratory shorebird species—Migratory species: EPBC Act policy statement 3.21 (2009) and EPBC Act Policy Statement 1.1 Significant Impact Guidelines—Matters of National Environmental Significance (2013).
- (c) A description of the environment relevant for part of the Commonwealth Marine (for actions outside the Commonwealth marine area that may impact the environment in the Commonwealth marine area).
- Note: whole of the marine environment must be considered—refer to the EPBC Act Policy Statement 1.1 Significant Impact Guidelines—Matters of National Environmental Significance (2013).

3 Impacts

- (a) The Assessment Documentation must include a description of all of the relevant impacts of the action on MNES (identified in Section 2). Impacts during the construction, operational and (if relevant) the decommissioning phases of the project must be addressed, and the following information provided:
- a description of the relevant direct, indirect and consequential impacts of the action
 - a detailed analysis of the nature and extent of the likely direct, indirect and consequential impacts relevant to MNES, including likely short-term and long-term impacts
 - a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible
 - any technical data and other information used or needed to make a detailed assessment of the relevant impacts.
- (b) The Assessment Documentation should identify and address cumulative impacts, where potential project impacts are in addition to existing impacts of other activities (including known potential future expansions or developments by the proponent and other proponents in the region and vicinity).
- (c) The Assessment Documentation should also provide a detailed assessment of any likely impact that this proposed action may facilitate on the relevant MNES at the local, regional, state and national scale. Reference should be made to the EPBC Act Policy Statement 1.1 Significant Impact Guidelines—Matters of National Environmental Significance (2013).

4 Avoidance and mitigation measures/alternatives

4.1 Avoidance and mitigation measures

The Assessment Documentation must provide information on proposed avoidance and mitigation measures to manage the relevant direct, indirect and consequential impacts of the action on MNES.

The Assessment Documentation also must take into account relevant agreements and plans that cover impacts on MNES including but not limited to:

- (a) approved conservation advice for relevant listed threatened species and communities
- (b) any Marine Bioregional Plans relevant to the proposed action—with reference to the Marine Bioregional Plan for the North Marine Region.

The Assessment Documentation must discuss how the proposed action is not inconsistent with:

- (a) any relevant threat abatement plan for listed threatened species and communities
- (b) any relevant recovery plan for listed threatened species and communities
- (c) relevant conventions and agreements of which a migratory species is listed, including the Bonn Convention, CAMBA, JAMBA and agreements relevant to the conservation of the species.

The Assessment Documentation must include, and substantiate, specific and detailed descriptions of the proposed avoidance and mitigation measures, based on best available practices and must include the following elements:

- (a) A consolidated list of avoidance and mitigation measures proposed to be undertaken to prevent or minimise for the relevant impacts of the action on MNES, including:
 - a description of proposed avoidance and mitigation measures to deal with relevant impacts of the action, including mitigation measures proposed to be taken by State/Territory governments, local governments or the proponent
 - assessment of the expected or predicted effectiveness of the mitigation measures, including the scale and intensity of impacts of the proposed action and the on-ground benefits to be gained through each of these measures
 - a description of the outcomes that the avoidance and mitigation measures will achieve
 - any statutory or policy basis for the mitigation measures
 - the cost of the mitigation measures.
- (b) A detailed outline of a plan for the continuing management, mitigation and monitoring of relevant MNES impacts of the action, including a description of the outcomes that will be achieved and any provisions for independent environmental auditing.
- (c) Where appropriate, each project phase (construction, operation, decommission) must be addressed separately. It must state the environmental outcomes, performance criteria, monitoring, reporting, corrective action, contingencies, responsibility and timing for each environmental issue.
- (d) The name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.

4.2 *Alternatives*

The Assessment Documentation must include any feasible alternatives to the action to the extent reasonably practicable, including:

- (a) if relevant, the alternative of taking no action
- (b) a comparative description of the impacts of each alternative on the triggered MNES protected by controlling provisions of Part 3 of the EPBC Act for the action
- (c) sufficient detail to make clear why any alternative is preferred to another.

Short, medium and long-term advantages and disadvantages of the options must be discussed.

5 **Residual impacts/offsets**

5.1 *Residual impacts*

The Assessment Documentation must provide details of:

- (a) the residual significant impacts on MNES that are likely to occur after the proposed activities to avoid and mitigate all impacts are taken into account:
 - include the reasons why avoidance or mitigation of impacts is not reasonably achieved
 - identify the residual significant impacts on MNES.

5.2 *Offset package (if relevant)*

The Assessment Documentation must include details of an offset package proposed to be implemented to compensate for the residual significant impact of the project, as well as an analysis about how the offset meets the requirements in the Department's EPBC Act Environmental Offsets Policy October 2012 (EPBC Act Offset Policy).

The offset package can comprise a combination of direct offsets and other compensatory measures, so long as it meets the requirements of the EPBC Act Offset Policy. Offsets should align with conservation priorities for the impacted protected matter and be tailored specifically to the attribute of the protected matter that is impacted in order to deliver a conservation gain.

Offsets should compensate for an impact for the full duration of the impact.

Offsets must directly contribute to the ongoing viability of the MNES impacted by the project and deliver an overall conservation outcome that improves or maintains the viability of the MNES as compared to what is likely to have occurred under the status quo, that is if neither the action nor the offset had taken place.

Note offsets do not make an unacceptable impact acceptable and do not reduce the likely impacts of a proposed action. Instead, offsets compensate for any residual significant impact.

Offsets required by the State/Territory can be applied if the offsets meet the Department's EPBC Act Offset Policy.

The Assessment Documentation must provide:

- (a) details of the offset package to compensate for residual significant impacts on MNES
- (b) an analysis of how the offset package meets the requirements of the EPBC Act Offsets Policy, including a discussion on the feasibility and the working outlined in the Offsets Assessment Guide.

6 Environmental record of person(s) proposing to take the action

The information provided must include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

- (a) the person proposing to take the action
- (b) for an action for which a person has applied for a permit, the person making the application.

If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework must also be included.

7 Economic and social matters

The economic and social impacts of the action, both positive and negative, must be analysed. Matters of interest may include:

- (a) details of any public consultation activities undertaken, and their outcomes
- (b) details of any consultation with Indigenous stakeholders
- (c) projected economic costs and benefits of the project, including the basis for their estimation through cost/benefit analysis or similar studies
- (d) employment opportunities expected to be generated by the project (including construction and operational phases).

Economic and social impacts should be considered at the local and regional levels. Details of the relevant cost and benefits of alternative options to the proposed action, as identified in Section 4 above, should also be included.

Identification of affected parties is required, including a statement mentioning any communities that may be affected and describing their views.

8 Information sources provided in the assessment documentation

For information given in the Assessment Documentation, state:

- (a) the source of the information
- (b) how recent the information is
- (c) how the reliability of the information was tested
- (d) what uncertainties (if any) are in the information
- (e) what guidelines, plans and/or policies did you consider.

9 Conclusion

An overall conclusion as to the acceptability of impacts of the proposal on each MNES, including:

- (a) a discussion on the consideration with the requirements of the EPBC Act, including the objects of the EPBC Act, the principles of ecologically sustainable development and the precautionary principle.
- (b) reasons justifying undertaking the proposal in the manner proposed, including the acceptability of the avoidance and mitigation measures; and
- (c) if relevant, a discussion of residual significant impacts and any offsets and compensatory measures proposed or required for residual significant impacts on MNES, and the relative degree of compensation and acceptability.

10 References

- *Environment Protect and Biodiversity Conservation Act 1999*—section 51-55, section 96A(3)(a)(b), 101A(3)(a)(b), section 136, section 527E
- Environment Protect and Biodiversity Conservation Regulations 2000—Division 3.2, 3.02(a)(b)(ii)(iii), Division 5.2, Schedule 4
- Bilateral Agreements—Item 18.1, Item 18.5, Schedule 1
- *Environment Protect and Biodiversity Conservation Act 1999* Environmental Offsets Policy October 2012
- EPBC Act Policy Statement 1.1 Significant Impact Guidelines—Matters of National Environmental Significance (2013)
- EPBC Act policy statement 3.21 (2009) and EPBC Act Policy Statement 1.1 Significant Impact Guidelines—Matters of National Environmental Significance (2013)
- Draft—Significant impact guidelines for 36 migratory shorebird species—Migratory species: EPBC Act policy statement 3.21 (2009)
- Marine Bioregional Plan for the North-west Marine Region (Commonwealth of Australia 2012)

Disclaimer

While this document has been prepared with care, it contains general information and does not profess to offer legal, professional or commercial advice. The Queensland Government accepts no liability for any external decisions or actions taken on the basis of this document. Persons external to the department should satisfy themselves independently and by consulting their own professional advisors before embarking on any proposed course of action.

Approved by

Lindsay Delzoppo

15 January 2015

Signature

Date

Lindsay Delzoppo
Director, Impact Assessment and Operational Support
Department of Environment and Heritage Protection
Delegate of the chief executive
Environmental Protection Act 1994

Enquiries:
Impact Assessment and Operational Support
Ph. (07) 3330 5598
Fax. (07) 3330 5875