Minister for Environment; Youth

Statement Number
800

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

GORGON GAS DEVELOPMENT REVISED AND EXPANDED PROPOSAL: BARROW ISLAND NATURE RESERVE

Proposal:	The construction of facilities for the development of the Greater Gorgon Gas Fields on the North-West Shelf, and the processing and export of the gas at a liquefied natural gas plant to be constructed on Barrow Island, as more generally described in the Draft Environmental Impact Statement / Environmental Review and Management Programme for the Proposed Gorgon Development, the Final Environmental Impact Statement/ Response to Submissions on the Environmental Review and Management Programme; as amended under Section 45C; and as expanded and revised in the Public Environmental Review for the Gorgon Gas Development Revised and Expanded Proposal and the Response to Submissions: Gorgon Gas Development Revised and Expanded Proposal, Public Environmental Review.
Proponent:	Chevron Australia Pty Ltd (ACN 086 197 757)
Proponent Address:	Level 24 QV1 Building, 250 St George's Terrace, Perth, Western Australia 6000
EPA Reports:	Report 1221 and Report 1323
Appeal determinations:	229 to 239 of 2006; 77 to 79 of 2009

Previous Ministerial Statement: 748

The conditions of this Statement supersede the conditions of Statement 748 in accordance with section 45B of the *Environmental Protection Act 1986*. The Gorgon Gas Development, as expanded and revised by the Revised and Expanded Gorgon Gas Development (together "the Proposal") to which the above reports of the Environmental Protection Authority relate may be implemented subject to the following conditions and schedules.

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PART 1: Preamble

Context

The Western Australian Government has approved this Proposal subject to the following matters to ensure environmental protection:

- A $90 million commitment by the Gorgon Joint Venture participants to a series of initiatives to conserve the Flatback turtle population and protect other endangered species, more particularly described in the following section entitled "Additional Gorgon Joint Venture Undertakings";
- The conditions and schedules of this Statement;
- The *Barrow Island Act 2003* (BI Act) and its Schedule 1 (Gorgon Gas Processing and Infrastructure Agreement), which also address issues for the Proposal that relate to environmental management on Barrow Island.

As well as approvals through Part IV of the *Environmental Protection Act 1986* (the EP Act), the Proponent will also need certain other approvals, notably, from the Commonwealth Government.

These matters will be discussed below to provide the context of the environmental conditions.

Additional Gorgon Joint Venture Undertakings

1. North West Shelf Flatback Turtle Conservation Program

The Gorgon Joint Venture participants have agreed to fund a North West Shelf Flatback Turtle Conservation Program to increase protection of the population in areas away from Barrow Island, at a cost of $62.5 million for the life of the Proposal. The Program will be subject to review by the Minister for Environment 30 years after commencement.

Consistent with that agreement, it is proposed that the Program be administered by an advisory committee comprising an independent chair nominated by the State Government and one representative each from the State and Commonwealth Governments and the Gorgon Joint Venture. The Program will include activities to:

- Survey, monitor and research turtle populations;
- Mitigate the loss by reducing interference to key feeding and breeding locations; and
- Establish information programs to support protection.

2. North West Shelf Flatback Turtle Intervention Program

If monitoring clearly demonstrates that the Proposal is having a significant impact on the Flatback turtle population, the Gorgon Joint Venture participants will be required to take or fund further actions to improve recruitment to the turtle population, such as the establishment of hatcheries. Additional funds will be capped at $5 million.

3. Threatened Species Translocation and Reintroduction Program

The Gorgon Joint Venture participants have agreed to fund a 12-year Threatened Species Translocation and Reintroduction Program for selected species from Barrow Island at a cost of $10 million.

The Program will include the initial translocation actions, plus ongoing management. The State will manage the Program and be responsible for the translocation and reintroduction outcomes.

4. Eradication of non-indigenous species

The Gorgon Joint Venture participants have responsibilities for the eradication of non-indigenous species that establish on Barrow Island following commencement of the Gorgon Project.

In addition to stringent quarantine management conditions outlined in the attached conditions, the Gorgon Joint Venture participants have agreed to also provide a financial guarantee of $10 million to cover Government costs for eradication of non-indigenous species established on Barrow Island, other than through natural causes, and following commencement of the Gorgon Project.

5. Dredging

The proposed dredging is one of the largest single dredging operations carried out in Western Australian (WA) waters.

The Gorgon Joint Venture participants have agreed to fund the Government's costs for auditing and surveillance of marine activities during dredging and marine construction, and ongoing auditing of the marine environment response and recovery capped at $2.5 million. This is in addition to the amount payable by the Gorgon Joint Venture participants under clause 12 of the *Gorgon Gas Processing and Infrastructure Agreement* (see below).

Barrow Island Act (2003) and Schedule 1 (Gorgon Gas Processing and Infrastructure Agreement)

Overview

There are certain matters covered by the *Barrow Island Act 2003* (BI Act) and its Schedule 1 which are relevant to environmental management of the Island but not duplicated in these conditions and are described here. The key environmental matters are:

- Establishment of the Barrow Island Coordination Council to coordinate certain matters for industry users of the Island (Clause 13 of Schedule 1);
- Approval to inject CO_2 on the Island (Section 13);
- Land tenure for gas processing project purposes (as defined in the BI Act) to be granted over no more than 300 ha in total of uncleared land (section 9, BI Act);
- A quarantine management plan (Clause 7 (1)(f) of Schedule 1);
- Closure plan (Clause 7(1)(p) of Schedule 1);
- The Gorgon Joint Venture participants to fund a Net Conservation Benefit Fund up to $60 million (indexed) (Clause 11 of Schedule 1); and
- The Gorgon Joint Venture participants to fund a permanent Department of Environment and Conservation (DEC) management presence on the Island for the purpose of managing the Gorgon Project's presence in relation to island and marine conservation (Clause 12 of Schedule 1).

Some of these are described in more detail below.

Barrow Island Coordination Council (BICC)

Consistent with Schedule 1, the Gorgon Joint Venture participants are required to make arrangements with the Barrow Island Joint Venture (holder of petroleum lease 1H on the island) to form and operate a BICC to:

- Provide a single point of contact and interaction for DEC on Barrow Island;
- Liaise with DEC on the management of Barrow Island; and

- Any other matters the BICC Participants agree to coordinate under the BICC (see fire management).

Quarantine

Clause 13(e)(iii) & (iv) of Schedule 1 of the BI Act, requires the BICC is to:

- Establish, monitor and review from time to time procedures to apply to quarantine of all people and materials brought to Barrow Island for the purposes of the operations of BICC Participants; and
- Plan and coordinate BICC's role in emergency response to and undertaking where necessary, remediation of any suspected or actual breach of quarantine in the operations of any of the BICC Participants, and hazardous spills to the Barrow Island environment.

Fire Management

It is intended that Island wide fire management also be a matter considered by the BICC. Both the Gorgon Joint Venture participants and the DEC intend to use the BICC to coordinate fire management on Barrow Island outside the Terrestrial Disturbance Footprint (Clause 13 (e) (vii) of Schedule 1). Matters to be considered are:

- Detection and reporting of fires off the project site;
- Management of fires off the project site started either by natural causes, DEC initiated fires or fires initiated from the Proposal; and
- Monitoring of the impact or effect of fire on indigenous taxa in affected areas for fires attributable to the Proposal.

NOTE: The management of fires off the project site, including proposals for DEC initiated fires, has implications for both conservation management and the other users of the island. The DEC, as the lead agency, would consider and evaluate these matters in consultation with the Conservation Commission, DSD, DMP, and BICC Participants.

Net Conservation Benefits

Under Clause 11 of Schedule 1 of the BI Act, the Gorgon Joint Venture participants have agreed to pay $60 million (indexed) in instalments to fund Net Conservation Benefits. Net Conservation Benefits are defined as demonstrable and sustainable additions to, or improvements in, biodiversity conservation values of Western Australia targeting, where possible, the biodiversity conservation values affected or occurring in similar bio-regions to Barrow Island.

DEC Funding

Under Clause 12 of Schedule 1 of the BI Act, the Gorgon Joint Venture participants have agreed to provide services and facilities for a permanent DEC management presence on Barrow Island (including accommodation, transport, etc): comprising three DEC officers during major construction phases; and two officers at other times.

The Gorgon Joint Venture participants will also pay certain DEC costs (i.e. salaries and on-costs) capped at $1 million a year during the major construction phases, and $750,000 at other times (indexed).

The purpose of DEC's permanent presence on Barrow Island is to:

- provide a full-time independent quarantine audit on Barrow Island and the mainland; and

- ensure all onsite and offsite areas are appropriately monitored, researched and managed in relation to direct and indirect impacts and to ensure the ecological knowledge base is being properly developed.

Commonwealth Government Approval and common condition

The Gorgon Proposal is being examined by the Commonwealth Government under the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Should the Commonwealth Government consider approval of the Proposal, any conditions of approval imposed by the WA Government will be taken into consideration in the formulation of EPBC Act conditions. The EPBC Act assessment and approval process for the Proposal centres on specific matters of national environmental significance, namely Listed threatened species and communities; Listed migratory species; and the (Commonwealth) Marine environment. To protect these matters it may be necessary for the Commonwealth Government to impose its own conditions. These will be compatible with State conditions and as far as possible the planning, monitoring and reporting requirements likely to be placed on the Proponent by both governments are expected to be able to be met using single, integrated, document sets.

Other approvals and submission of plans, programs etc

The Proponent will also need other approvals from both the Commonwealth Government and State Government, where conditions are also likely to be set requiring the preparation of certain plans, programs etc. It is the intention that where another approval process requires a plan, program etc. that addresses the same issue as a condition in this Statement, that the same plan, program etc could cover both approval processes.

Other agency access Barrow Island

Representatives from other agencies may require access to Barrow Island from time to time, and this will need to be carried out in consultation the BICC and BICC Participants.

PART 2: Conditions

The implementation of the Proposal is subject to the following Conditions and Schedules.

1 Proposal Implementation

1.1 The Proponent shall implement the Proposal as documented and described in Schedule 1 of this Statement subject to the conditions and schedules of this Statement.

1A Transitional Arrangements Regarding Carbon Dioxide Seismic Baseline Surveys

1A.1 Notwithstanding anything in these conditions, works associated with the carbon dioxide seismic baseline survey program may be undertaken for a period of 6 months from the date of this Statement, or such longer period as determined by the Minister, in accordance with the conditions contained in Ministerial Statement 748 and conditions 4, 5, 6.6, 7.7 and 35 of this Statement.

2 Proponent Nomination and Contact Details

2.1 The Proponent for the time being nominated by the Minister for Environment under sections 38(6) or 38(7) of the *Environmental Protection Act 1986* is responsible for the implementation of the Proposal.

2.2 The Proponent shall notify the Chief Executive Officer of the DEC (CEO) of any change of the name and address of the Proponent for the serving of a notice or other correspondence within 30 days of such change.

3 Time Limit of Authorisation

3.1 The authorisation to implement the Proposal provided for in this Statement shall lapse and be void within five years after the date of this Statement if the Proposal to which this Statement relates is not substantially commenced.

3.2 The Proponent shall provide the CEO with written evidence which demonstrates that the Proposal has substantially commenced on or before the expiration of five years from the date of this Statement.

4 Compliance Reporting

4.1 The Proponent shall prepare and maintain a Compliance Assessment Plan to the satisfaction of the CEO.

4.2 The Proponent shall submit to the CEO, the Compliance Assessment Plan required by Condition 4.1 within 6 months of the date of this Statement. The Compliance Assessment Plan shall indicate:

i. the frequency of compliance reporting;

ii. the approach and timing of compliance assessments;

iii. the retention of compliance assessments;

iv. reporting of non-compliances and corrective actions taken;

v. the table of contents of Compliance Assessment Reports; and

vi. public availability of compliance reports.

4.3 The Proponent shall assess compliance with conditions in accordance with the Compliance Assessment Plan required by Condition 4.1.

4.4 The Proponent shall retain reports of all compliance assessments described in the Compliance Assessment Plan required by Condition 4.1 and shall make those reports available when requested by the CEO.

4.5 The Proponent shall advise the CEO of any non-compliance as soon as practicable.

4.6 The Proponent shall submit to the CEO a Compliance Assessment Report annually from the date of issue of this Statement addressing the previous twelve month period or other period as agreed by the CEO. The date of the first Compliance Assessment Report shall be 15 months from the date of this Statement, with each subsequent report 12 months from the date of the previous Report. The Compliance Assessment Report shall:

i. be endorsed by the Proponent's Managing Director or a person, approved in writing by the Department of Environment and Conservation, delegated to sign on the Managing Director's behalf;

ii. include a statement as to whether the Proponent has complied with the conditions;

iii. identify all non-compliances and describe corrective and preventative actions taken;

iv. be made publicly available in accordance with the approved Compliance Assessment Plan; and

v. indicate any proposed changes to the Compliance Assessment Plan required by Condition 4.1.

5 Environmental Performance Reporting

5.1 The Proponent shall submit annually to the Minister an Environmental Performance Report covering the topics listed in Condition 5.2, and the specific details shown in Schedule 3 (excluding Item 10 iii and 10 iv), covering the previous 12 month period as determined by the Minister. The date of the first Environmental Performance Report (the Report) shall be 15 months from the date this Statement with each subsequent report 12 months from the date of the previous report.

5.2 The Report shall cover the following topics:

i. Terrestrial and subterranean environment state;

ii. Terrestrial and marine quarantine (including weed management);

iii. Marine turtles (including light and noise management);

iv. Short range endemics and subterranean fauna;

v. Fire management;

vi. Carbon Dioxide Injection System;

vii. Air quality;

viii. Coastal stability;

ix. Terrestrial rehabilitation; and

x. Greenhouse gas abatement.

5.3 Every five years from the date of the first annual Environmental Performance Report the Proponent shall submit to the Minister an Environmental Performance Report for review by the Minister, covering the previous five year period, comprising:

i. The topics listed in Condition 5.2;

ii. Specific details shown in Schedule 3;

iii. A five year overview of environmental performance;

iv. Proposed environmental management improvements; and

v. A review of whether there are any reasonably practicable management measures, operating controls or design features that can be implemented to reduce or eliminate the alteration of the light horizon on the east coast beaches of Barrow Island as a result of the implementation of the Proposal.

5.4 The Proponent shall, if required by the Minister, update Management Plans, Programs, Systems or Reports in accordance with Condition 36 to include any reasonably practicable improvements identified as part of the Environmental Performance Report referred to in Condition 5.3.iv.

6 Terrestrial and Subterranean Baseline State and Environmental Impact Report

6.1 Prior to commencement of construction of terrestrial facilities on Barrow Island, as defined in Condition 6.3, the Proponent shall submit to the Minister a Terrestrial and Subterranean Baseline State and Environmental Impact Report (the Report) that meets the purposes set out in Condition 6.4, as determined by the Minister, unless otherwise allowed in Condition 6.3A. The Report shall cover the following ecological elements:

i. flora;

ii. vegetation;

iii. fauna (including subterranean fauna and short range endemics);

iv. habitat;

v. ecological communities;

vi. groundwater;

vii. surface water landforms; and

viii. physical landforms.

6.2 The Proponent shall consult with DEC in the preparation of the Report required by Condition 6.1, including the methodology to be used to survey, collect and collate the baseline data and information for the ecological elements identified in Condition 6.1.

6.3 The terrestrial facilities referred to in Condition 6.1 are:

i. Gas Treatment Plant;

ii. Carbon Dioxide Injection System;

iii. Associated Terrestrial Infrastructure forming part of the Proposal;

iv. Areas impacted for seismic data acquisition; and

v. Onshore Feed Gas Pipeline System as defined in Schedule 1.

6.3A In the event that any portions of the Report related to specific elements or sub-elements (Condition 6.3) are not submitted as required by Condition 6.1, the Proponent shall submit the portions of the Report relevant to that element or sub-element to the Minister prior to the commencement of construction of that element or sub-element. All portions of the Report shall meet the purposes identified in Condition 6.4 and the requirements of Condition 6.5 as determined by the Minister.

6.4 The purposes of the Report are to:

i. Define and map the pre-development baseline state for the ecological elements within the areas that are expected to, or may be at risk of Material or Serious Environmental Harm due to any works associated with the terrestrial facilities listed in Condition 6.3;

ii. Define and map the ecological elements within the Terrestrial Disturbance Footprint; and

iii. Define and map the ecological elements of reference sites to be used as part of Condition 8, which are not at risk of Material or Serious Environmental Harm due to construction or operation of the terrestrial facilities listed in Condition 6.3.

6.5 The Report shall include:

i. A review of the results of the qualitative ecological risk assessments of the likelihood and consequence of Proposal impacts on the ecological elements identified in Condition 6.1;

ii. Details of the methodology that was used to survey, collect and collate the baseline data and information for all ecological elements identified in Condition 6.1;

iii. A description and map of the ecological elements within the Terrestrial Disturbance Footprint;

iv. A description and map of the ecological elements which are at risk of Material or Serious Environmental Harm outside the Terrestrial Disturbance Footprint due to construction and operation of the terrestrial facilities listed in Condition 6.3;

v. A review of the results to include existing areas of disturbance, including clearing, existing non-indigenous species (including weeds) and disturbed landscapes;

vi. Spatially accurate (i.e. rectified and geographically referenced) maps showing the baseline data and information for the ecological elements identified in Condition 6.1;

vii. Discussion of the data on the baseline biological, physical and chemical variables including any significant relationships, for the ecological elements identified in Condition 6.1;

viii. Significant ecological elements to be protected - e.g. Declared Rare Flora (DRF), threatened ecological communities, Threatened Species under the EPBC Act, habitats of rare fauna;

ix. An analysis of, and procedures to address data and information gaps associated with the baseline data for the areas identified in Condition 6.5.iv for the ecological elements identified in Condition 6.1; and

x. A description and map of the ecological elements of reference sites in locations which are not at risk of Material or Serious Environmental harm due to construction and operation of the terrestrial facilities listed in Condition 6.3.

6.6 The Proponent shall not cause or allow Material or Serious Environmental Harm outside the Terrestrial Disturbance Footprint.

7 Terrestrial and Subterranean Environment Protection Plan

7.1 Prior to commencement of construction of any of the terrestrial facilities identified in Condition 6.3, the Proponent shall submit a Terrestrial and Subterranean Environment Protection Plan (the Plan) that meets the objectives identified in Condition 7.4 and the requirements of Condition 7.5 as determined by the Minister, unless otherwise allowed in Condition 7.2.

7.2 In the event that any portions of the Plan related to specific elements or sub-elements (Schedule 1) is not submitted as required by Condition 7.1, the Proponent shall submit the portions of the Plan relevant to that element or sub-element to the Minister prior to the commencement of construction of that element or sub-element. All portions of the Plan shall meet the objectives identified in Condition 7.4 and the requirements of Condition 7.5 as determined by the Minister.

7.3 The Proponent shall consult with the DEC and DEWHA in the preparation of the Plan.

7.4 The objectives of the Plan are:

i. To reduce the adverse impacts from the construction and operation of the terrestrial facilities as far as practicable; and

ii. To ensure that construction and operation of the terrestrial facilities does not cause Material or Serious Environmental Harm outside the Terrestrial Disturbance Footprint, including below the surface of the land.

7.5 The Plan shall include the following:

i. Management measures to reduce the adverse impacts (including from light and noise) from the construction and operation of the terrestrial facilities listed in Condition 6.3 as far as practicable; and

ii. Management measures to ensure that construction and operation of the terrestrial facilities does not cause Material or Serious Environmental Harm outside the Terrestrial Disturbance Footprint, including below the surface of the land.

7.6 The measures required by 7.5.i. and ii. shall address but not be limited to:

i. Vegetation Clearing Audit Procedures to determine the extent of clearing and rehabilitation on an annual basis;

ii. Procedures in relation to and protocols for capturing, relocating, handling, housing, caring for and reporting to the DEC threatened or listed fauna found within the Terrestrial Disturbance Footprint that are not required by DEC for translocation;

iii. Procedures to avoid secondary impacts to fauna as a consequence of risks such as animals being trapped in construction trenches or subject to vehicle strike;

iv. Measures including detailed drainage and containment designs for all works and infrastructure that control stormwater run-off outside the Terrestrial Disturbance Footprint with the aim of ensuring that runoff is consistent with the pre-development runoff regime as far as practicable, and any recharge does not cause pollution; and

v. Performance Standards against which achievement of the objectives of this condition can be determined.

7.7 The Proponent shall report any Material or Serious Environmental Harm outside the Terrestrial Disturbance Footprint to the DEC and DEWHA within 48 hours of detection.

7.8 The Proponent shall implement the Plan.

8 Terrestrial and Subterranean Environment Monitoring Program

8.1 Prior to commencement of construction of the terrestrial facilities listed in Condition 6.3 the Proponent shall prepare and submit a Terrestrial and Subterranean Environment Monitoring Program (the Program) to the Minister that meets the objective set out in Condition 8.3 and the requirements of Condition 8.4 as determined by the Minister, unless otherwise allowed in Condition 8.2.

8.2 In the event that any portion of the Program related to specific elements or sub-elements (Schedule 1) is not submitted as required by Condition 8.1, the Proponent shall submit the portion of the Program relevant to that element or sub-element to the Minister prior to the commencement of construction of that element or sub-element. All portions of the Program shall meet the objective identified in Condition 8.3 and the requirements of Condition 8.4 as determined by the Minister.

8.3 The objective of this Program is to establish a statistically valid ecological monitoring program to detect any Material or Serious Environmental Harm to the ecological elements outside the Terrestrial Disturbance Footprint.

8.4 The Program shall include:

i. Indicators, parameters and criteria to be used in measuring changes on the ecological elements identified in Condition 6.1 that are at risk of Material or Serious Environmental Harm due to construction and operation of terrestrial facilities listed in Condition 6.3.

ii. Protocols for on-going reporting of adverse changes to the ecological elements listed in Condition 6.1;

iii. Management Triggers;

iv. Protocols for identifying additional areas not originally identified that are at risk of sustaining Material or Serious Environmental Harm from the Proposal, and for adding monitoring sites to include these additional locations, if required;

v. Establishing an ecological monitoring program with the ability to detect at a statistical power of 0.8 or greater, or an alternative statistical power as determined by the Minister, any environmental harm to the ecological elements listed in Condition 6.1;

vi. Location of monitoring sites in areas that are at risk of Material or Serious Environmental Harm due to construction and operation of terrestrial facilities listed in Condition 6.3; and

vii. Location of reference sites (see Condition 6.4.iii).

8.5 The Proponent shall implement the Program.

9 Establishing a Quarantine Expert Panel

9.1 Prior to commencement of construction of the terrestrial facilities listed in Condition 6.3, the Proponent shall establish and provide reasonable funding to resource a Quarantine Expert Panel (QEP) to carry out the role set out in Condition 9.2 with membership as described in Condition 9.3.

9.2 The role of the QEP is to provide advice to the Proponent and the Minister on Proposal related terrestrial and marine quarantine matters including:

i. Development and implementation of the Terrestrial and Marine Quarantine Management System (QMS) as required by Condition 10;

ii. Preventing the introduction of Non-indigenous Terrestrial Species and Marine Pests to Barrow Island through all Proposal attributable introduction pathways;

iii. Detecting the presence of Non-indigenous Terrestrial Species and Marine Pests and detecting environmental change caused by the presence of Non-indigenous Terrestrial Species and Marine Pests;

iv. Control and eradication measures in the event that a Non-indigenous Terrestrial Species or Marine Pest is detected;

v. Improvements to the effectiveness of the QMS;

vi. Biological baselines and surveys conducted for quarantine management;

vii. Sources of Non-indigenous Terrestrial Species and Marine Pests;

viii. Auditing the effectiveness of the QMS;

ix. Reviewing and recommending quarantine studies; and

x. Any other Proposal-related quarantine matters as requested by the Proponent or the Minister.

9.3 The membership of the QEP shall be established as follows:

i. Proponent shall appoint its member(s);

ii. Proponent shall, in consultation with the DEC and DEWHA, nominate candidates for the Independent Chair to be appointed by the Minister (NOTE: the Minister may seek advice from other sources on nominees for Independent Chair);

iii. Proponent shall, in consultation with the Independent Chair, invite DEC, Western Australian Department of Agriculture and Food (DAF) and Western Australian Department of Fisheries (DoF) to nominate suitably qualified subject matter expert(s) as members of the QEP; and

iv. Proponent shall, in consultation with the Independent Chair, nominate and make all reasonable endeavours to ensure the existence and retention of relevant suitably qualified independent subject matter expert members on the QEP to fulfill the roles set out in Condition 9.2, to be appointed by the Minister (NOTE: the Minister may seek advice from other sources, including DEC, on nominees for independent expert(s)).

9.4 The Proponent shall develop the Terms of Reference for the QEP consistent with the role as set out in Condition 9.2 in consultation with the Minister and the Independent Chair.

10 Terrestrial and Marine Quarantine Management System

10.1 Prior to commencement of construction of any terrestrial facilities listed in Condition 6.3 and the marine facilities listed in Condition 14.3, the Proponent shall submit the Quarantine Management System (QMS) to the Minister, taking into account the advice of the Quarantine Expert Panel (QEP) that meets the aim and objectives set out in Condition 10.3 and the requirements of Condition 10.4, as determined by the Minister, unless otherwise allowed in Condition 10.2.

10.2 In the event that any portions of the QMS related to specific elements or sub-elements (Schedule 1) of the Proposal are not submitted as required by Condition 10.1, the Proponent shall submit the QMS portions relevant to that element or sub-element to the Minister prior to the commencement of construction of that element or sub-element, taking into account the advice of the QEP that meets the aim and objectives set out in Condition 10.3 and the requirements of Condition 10.4, as determined by the Minister.

10.3 The overall aim of the QMS is that the Proponent shall not introduce or proliferate Non-indigenous Terrestrial Species and Marine Pests to or within Barrow Island or the water surrounding Barrow Island, as a consequence of the Proposal. The specific objectives of the QMS are:

i. To prevent the introduction of Non-indigenous Terrestrial Species and Marine Pests;

ii. To detect Non-indigenous Terrestrial Species (including weed introduction and/or proliferation) and Marine Pests;

iii. To control and, unless otherwise determined by the Minister, eradicate detected Non-indigenous Terrestrial Species (including weeds) and Marine Pests; and

iv. Mitigate adverse impacts of any control and eradication actions on indigenous species taken against detected Non-indigenous Terrestrial Species (including weeds) and Marine Pests.

10.4 The QMS shall address the following topics. These topics are specified in more detail in Schedule 4:

i. Risk Assessment, Supply Chain Management, Vessel Management and Inspection;

ii. Detection, Control and Eradication Program;

iii. Mitigation (including a weed hygiene procedure) and any Control and Eradication Program;

iv. Reporting and Recording;

v. Integrating with whole of Island Quarantine Management;

vi. Reviewing and further studies;

vii. Weed Management Procedures; and

viii. Performance Standards to be achieved by the QMS within the Terrestrial and Marine Quarantine Controlled Access Zones and Terrestrial and Marine Quarantine Limited Access Management Zones.

10.5 The Proponent shall implement the QMS required by Condition 10.1.

10.6 The Proponent shall review and update the QMS required by Condition 10.1 annually during the construction phase of the Proposal and then at least every five years thereafter in accordance with Conditions 5.3 and 5.4 unless varied by the Minister.

11 Short Range Endemics and Subterranean Fauna Monitoring Plan

11.1 Prior to commencement of construction of the Gas Treatment Plant, the Proponent shall prepare and submit to the Minister, a Short Range Endemics and Subterranean Fauna Monitoring Plan (the Plan) for the further survey and identification of those short range endemics and subterranean fauna species which have previously only been located on the Gas Treatment Plant site. The Plan shall address the following:

i. survey methods;

ii. survey sites;

iii. frequency of surveys; and

iv. in respect of any species that has only been found on the Gas Treatment Plant site as at the date of this Statement, the continuation of surveys for that species until it is found elsewhere,

as determined by the Minister.

11.2 The Proponent shall implement the Plan.

12 Fire Management Plan

12.1 Prior to commencement of construction of any terrestrial facilities identified in Condition 6.3 the Proponent shall prepare and submit a Fire Management Plan (the Plan) to the Minister that meets the objectives set out in Condition 12.4 and the requirements of Condition 12.5, as determined by the Minister, unless otherwise allowed in Condition 12.2, consistent with the requirements of the *Occupational Safety and Health Act 1984* (WA).

12.2 In the event that any portions of the Plan related to specific elements or sub-elements (Schedule 1) of the Proposal are not submitted as required by Condition 12.1, the Proponent

shall submit the portion of the Plan relevant to that element or sub-element to the Minister prior to the planned commencement of construction of that element or sub-element. All portions of the Plan shall meet the objectives identified in Condition 12.4 and the requirements of Condition 12.5 as determined by the Minister.

12.3 The Proponent shall consult with the DEC, Conservation Commission, DEWHA, the BICC Participants, and DMP in the preparation of the Plan.

12.4 The objectives of the Plan are to ensure that:

i. The Proposal does not cause Material or Serious Environmental Harm outside the Terrestrial Disturbance Footprint due to fire; and

ii. Fire risk reduction measures are built into the design of the facilities to protect the Proponent's assets from the impact from fire on Barrow Island.

12.5 The Plan shall include the following:

i. A fire risk assessment of all Proposal infrastructure and measures to protect infrastructure and the surroundings from fires on Barrow Island;

ii. On-going management of infrastructure for fire prevention, suppression and management including incident control systems so that fires do not escape from the Terrestrial Disturbance Footprint;

iii. Performance Standards against which achievement of the objectives of this condition can be determined; and

iv. A description of the arrangements to identify, suppress and manage fires caused by the Proposal outside the Terrestrial Disturbance Footprint.

12.6 The Proponent shall implement the Plan.

12.7 The Proponent shall review the Plan at least every five years unless otherwise determined by the Minister.

12.8 In the event that a fire attributable to the Proposal occurs outside the Terrestrial Disturbance Footprint and the Conservation Commission requires that site to be rehabilitated, the Proponent shall develop and implement rehabilitation measures in consultation with DEC, BICC and the Conservation Commission.

13 Groundwater Abstraction Management Plan

13.1 Prior to the commencement of construction of facilities to abstract groundwater for water supply purposes, the Proponent shall submit a Groundwater Abstraction Management Plan (the Plan) to the Minister that meets the objective set in Condition 13.3 and the requirements of Condition 13.4 as determined by the Minister unless otherwise allowed in Condition 13.2A.

13.2 In preparing this Plan the Proponent shall consult with DEWHA, DoW and DEC.

13.2A In the event that any portions of the Plan related to specific elements or sub-elements (Schedule 1) of the Proposal are not submitted as required by Condition 13.1, the Proponent shall submit the portion of the Plan relevant to that element or sub-element to the Minister prior to the planned commencement of construction of that element or sub-element. All portions of the Plan shall meet the objective identified in Condition 13.3 and the requirements of Condition 13.4 as determined by the Minister.

13.3 The objective of the Plan is to ensure that groundwater abstraction does not cause Material or Serious Environmental Harm to the target aquifer, surface vegetation or subterranean fauna habitats of Barrow Island.

13.4 The Plan shall include:

i. Practicable environmental triggers for contingency plans to avoid Material or Serious Environmental Harm to the target aquifer, surface vegetation or subterranean fauna habitats of Barrow Island (this may include separate triggers for within and outside the Terrestrial Disturbance Footprint);

ii. Actions (including an immediate reduction in the rate of or cessation of groundwater abstraction) which will be taken to avoid Material or Serious Environmental Harm to the target aquifer, surface vegetation or subterranean fauna habitats of Barrow Island;

iii. Reporting procedures; and

iv. Performance Standards against which achievement of the objective of this condition can be determined.

13.5 The Proponent shall implement the Plan.

14 Coastal and Marine Baseline State and Environmental Impact Report

14.1 To establish the methodology to be used in the Report required by Condition 14.2, the Proponent shall submit to the Minister a Scope of Works reporting the methodologies to be used in the preparation of the Report that covers the following as determined by the Minister:

i. Survey methods for each of the ecological elements as listed in Condition 14.2;

ii. Location and establishment of survey sites;

iii. Timing and frequency of surveys;

iv. Habitat classification schemes;

v. Mapping methodologies, including Coral Assemblages;

vi. Treatment of survey data; and

vii. Method for hydrodynamics data acquisition and reporting.

14.2 Prior to commencement of construction of marine facilities as listed in Condition 14.3, the Proponent shall submit a Coastal and Marine Baseline State and Environmental Impact Report (the Report) that meets the purposes set out in Condition 14.6, as determined by the Minister, unless otherwise allowed in Condition 14.4. The Report shall cover the following ecological elements:

i. Hard and soft corals;

ii. Macroalgae;

iii. Non-coral benthic macro-invertebrates;

iv. Seagrass;

v. Mangroves;

vi. Surficial sediment characteristics;

vii. Demersal fish; and

viii. Water quality (including measures of turbidity and light attenuation).

14.3 The marine facilities as described in Schedule 1 to which this condition applies are:

i. Materials Off-loading Facility (MOF);

ii. LNG Jetty;

iii. Dredge Spoil Disposal Ground;

iv. Offshore Feed Gas Pipeline System;

v. Domestic Gas Pipeline; and

vi. Marine upgrade of the existing WAPET Landing.

14.4 In the event that portions of the Report related to specific elements or sub-elements (the marine facilities listed in Condition 14.3) of the Proposal are not submitted as required by Condition 14.1, the Proponent shall submit the portion of the Report relevant to that element or sub-element to the Minister prior to the commencement of construction of that element or sub-element. All portions of the Report shall meet the purposes identified in Condition 14.6 and the requirements of Condition 14.7 and 14.8 as determined by the Minister.

14.5 In preparing this Report the Proponent shall consult with CDEEP, DEC, DoT, DoF and DEWHA.

14.6 The purposes of this Report are to:

i. Describe and map the ecological elements referred to in Condition 14.2(i-vi) within the Zones of High Impact and the Zones of Moderate Impact and representative areas in the Zones of Influence (Figures 1 and 2; Schedule 5), associated with the generation of turbidity and sediment deposition from dredging and dredge spoil disposal required for marine facilities listed in Condition 14.3(i-iii);

ii. Describe and map the extent and distribution of Coral Assemblages within the Zones of High Impact and the Zones of Moderate Impact which are to be used to calculate the Area of Loss of Coral Assemblages according to the following formula:

$$a = h + (m \times 30\%)$$

where:

a = the area (ha) of loss of Coral Assemblages;

h = the area (ha) of Coral Assemblages within the Zones of High Impact; and

m = the area (ha) of Coral Assemblages within the Zones of Moderate Impact.

iii. Describe and map the benthic ecological elements referred to in Condition 14.2(i-vi) which are at risk of Material or Serious Environmental Harm due to construction or operation of the marine facilities listed in Condition 14.3(iv-vi);

iv. Describe and map the benthic ecological elements referred to in Condition 14.2 (i-vi) at Reference Sites which are not at risk of Material or Serious Environmental Harm due to construction or operation of the marine facilities listed in Condition 14.3;

v. Describe the ecological elements referred to in 14.2 (vii and viii) within the Zones of High Impact and the Zones of Moderate Impact and representative areas in the Zones of Influence (Figures 1 and 2; Schedule 5), associated with the generation of turbidity and sediment deposition from dredging and dredge spoil disposal required for marine facilities listed in Condition 14.3 (i-iii);

vi. Describe the ecological elements referred to in 14.2 (vii and viii) which are at risk of Material or Serious Environmental Harm due to construction or operation of the marine facilities listed in Condition 14.3 (iv-vi);

vii. Describe the ecological elements referred to in 14.2 (vii and viii) of Reference Sites which are not at risk of Material or Serious Environmental Harm due to construction or operation of the marine facilities listed in Condition 14.3.

14.7 The geographic extent of the Report shall be:

i. The marine facilities listed in Condition 14.3;

ii. Dredge Management Areas (Figures 1 and 2, Schedule 5) including the Zones of High Impact, the Zones of Moderate Impact and areas in the Zones of Influence including those that contain significant benthic communities including coral assemblages;

iii. the Marine Disturbance Footprint associated with the facilities listed in Condition 14.3 in State Waters; and

iv. Reference sites outside the Zone of Influence.

14.8 The Report shall meet the following requirements:

i. Contain spatially accurate (i.e. rectified and geographically referenced) maps showing the locations and spatial extent of the marine coastal facilities listed in Condition 14.3;

ii. Present the results of the surveys described in Condition 14.1;

iii. Record the existing dominant and sub-dominant hard and soft coral species/taxa and the dominant species of macroalgae, non-coral benthic macro-invertebrates, seagrass and mangroves, and demersal fish assemblages that characterise these communities;

iv. Record:

a. Population structure of coral communities as colony size-class frequency distributions of dominant hard coral taxa;
b. Population statistics of survival and growth of dominant hard coral taxa and, if appropriate, selected other indicator coral taxa that characterise these communities; and
c. Recruitment of hard coral taxa within these communities.

v. Contain descriptions and spatially accurate (i.e. rectified and geographically referenced) maps in accordance with the purposes set out in Condition 14.6;

vi. Present data in an appropriate Geographic Information System (GIS) format; and

vii. Establish and report on background water quality (including measures of turbidity and light attenuation), the natural rates and spatial patterns of sediment deposition, and the physical characteristics of the deposited sediment and characteristics of surficial sediments where dredging and dredge spoil disposal may affect the environment and at reference sites where the environment will not be affected.

14.9 To meet the requirements of Condition 14.8, the Proponent shall collect water quality data and data on natural rates, and spatial patterns of sediment deposition for at least one full annual cycle prior to the construction of the marine facilities listed in Condition 14.3.

15 Establishing a Marine Turtle Expert Panel

15.1 Prior to commencement of construction of any facility listed in Condition 6.3 or Condition 14.3 to be located on the east coast of Barrow Island, the Proponent shall establish and provide reasonable funding to resource a Marine Turtle Expert Panel (MTEP) for the role set out in Condition 15.2 with membership as described in Condition 15.3.

15.2 The role of the MTEP is to provide advice to the Proponent and the Minister on marine turtle monitoring and management including:

i. Development and implementation of the Long-Term Marine Turtle Management Plan as required by Condition 16.1;

ii. Proposal-specific marine turtle studies as required by Condition 16.4;

iii. Monitoring program design and methodology as required by Condition 16.4;

iv. Additional management measures as required by Condition 16.4; and

v. Any other marine turtle management matters requested by the Proponent or the Minister.

15.3 The membership of the MTEP shall be established as follows:

i. Proponent shall appoint its member(s);

ii. Proponent shall in consultation with the DEC and DEWHA nominate candidates for the Independent Chair to be appointed by the Minister (NOTE: the Minister may seek advice from other sources on nominees for Independent Chair);

iii. Proponent shall, in consultation with the Independent Chair, invite DEC, DoF and DEWHA to nominate suitably qualified subject matter expert(s) as members of the MTEP; and

iv. Proponent shall, in consultation the with Independent Chair, nominate and make all reasonable endeavours to ensure the existence and retention of relevant suitably qualified independent subject matter expert members on the MTEP to fulfill the role set out in Condition 15.2, to be appointed by the Minister (NOTE: the Minister may seek advice from other sources, including DEC, on nominees for independent expert (s)).

15.4 The Proponent shall develop the Terms of Reference for the Panel consistent with the role as set out in Condition 15.2 in consultation with the Minister and the Independent Chair.

16 Long-term Marine Turtle Management Plan

16.1 Prior to commencement of construction of any facility listed in Condition 6.3 or Condition 14.3 to be located on the east coast of Barrow Island, the Proponent shall prepare and submit to the Minister a Long-term Marine Turtle Management Plan (the Plan) that meets the objectives set out in Condition 16.3 and the requirements of Condition 16.4, as determined by the Minister, unless otherwise allowed in Condition 16.1A.

16.1A In the event that any portion of the Plan related to specific elements or sub-elements (Schedule 1) of the Proposal is not submitted as required by Condition 16.1, the Proponent shall submit the portion of the Plan relevant to that element or sub-element to the Minister prior to the commencement of construction of that element or sub-element, taking into account the advice of the MTEP that meets the objectives identified in Condition 16.3 and the requirements of Condition 16.4 as determined by the Minister.

16.2 The Proponent shall consult with MTEP, DEC and DEWHA in the preparation and future updating of the Plan.

16.3 The objectives of the Plan are to:

i. Address the long-term management of the marine turtles that utilise the east coast beaches and waters where there are Proposal related stressors to marine turtles.

ii. Establish baseline information on the populations of marine turtles that utilise the beaches adjacent to the east coast facilities identified in Conditions 6.3 and 14.3;

iii. Establish a monitoring program to measure and detect changes to the flatback turtle population in accordance with Condition 16.4ii; and

iv. Specify design features, management measures and operating controls to manage, and where practicable, avoid adverse impacts to marine turtles, with specific reference to reducing light and noise emissions as far as practicable.

16.4 The Plan shall include the following:

i. Report the baseline information on the population of marine turtles that utilise the beaches on the east coast of Barrow Island adjacent to the east coast facilities identified in Conditions 6.3 or 14.3;

ii. Define the monitoring program to measure and detect changes to the flatback turtle populations. Monitoring methods shall have the ability to detect at a statistical power of 0.8 or greater, or an alternative statistical power as determined by the Minister, on advice of the MTEP, changes or impacts on parameters related to population viability;

iii. Identify the significant proposal related stressors with the potential to cause adverse impact on marine turtles;

iv. Specify design features, management measures and operating controls to manage, and where practicable, aim to avoid adverse impacts to the marine turtles, including, in relation to light emissions, consideration of the following options:

a. shrouding of lights, including ships and other vessels; and

b. relocation or shrouding of flares;

v. Define the scope of studies aimed at understanding the ecology of marine turtles that utilise the east coast beaches and waters where there are Proposal related stressors to marine turtles and studies aimed at understanding links between stressors and marine turtle behaviour to improve the management of impacts;

vi. Performance Standards against which achievement of the objectives of this condition can be determined;

vii. Management Triggers; and

viii. Requirements to comply with the Proponent's obligations under the North West Shelf Flatback Turtle Intervention Program, such as the establishment of hatcheries, as agreed by the Proponent and the Minister from time to time.

16.5 Annually audit and review the effectiveness of lighting design features, management measures and operating controls and if reasonably practicable, propose and implement improvements to any of those lighting design features, management measures or operating controls in accordance with Condition 36.

16.6 The Proponent shall implement the Plan.

16.7 The Proponent shall report any detected mortality of any marine fauna declared under section 14 (2)(ba) of the *Wildlife Conservation Act 1950* to DEC within 48 hours of observation.

17 Marine Facilities Construction Environmental Management Plan

17.1 Prior to the commencement of construction of the marine facilities listed in Condition 17.2, the Proponent shall prepare and submit to the Minister a Marine Facilities Construction Environmental Management Plan (the Plan) that meets the objectives set out in Condition 17.4 and requirements set out in Conditions 17.5 and 17.6, as determined by the Minister, unless otherwise allowed in Condition 17.1A.

17.1A In the event that any portion of the Plan related to specific elements or sub-elements (marine facilities listed in Condition 17.2) of the Proposal is not submitted as required by Condition 17.1, the Proponent shall submit the portion of the Plan relevant to that element or sub-element to the Minister prior to the commencement of construction of that element or sub-element. All portions of the Plan shall meet the objectives identified in Condition 17.4 and the requirements of Condition 17.5 as determined by the Minister.

17.2 The marine facilities relevant to this condition are:

i. Materials Off-loading Facility (MOF);

ii. LNG jetty; and

iii. Marine component of the Barge (WAPET) Landing upgrade

17.3 The Proponent shall consult with the DEC, DoF, DoT and DEWHA in the preparation of the Plan.

17.4 The objectives of the Plan are:

i. To reduce the impacts from the construction of the marine facilities listed in Condition 17.2 (excepting from the generation of turbidity and sedimentation from dredging and spoil disposal) as far as practicable; and

ii. To ensure that construction of the marine facilities listed in Condition 17.2 does not cause Material or Serious Environmental Harm outside the Marine Disturbance Footprint associated with those facilities (except from the generation of turbidity and sedimentation from dredging and spoil disposal).

17.5 The Plan shall include the following:

i. Management measures to reduce the impacts from the construction of the marine facilities as far as practicable;

ii. Management measures to ensure that construction of the marine facilities does not cause Material or Serious Environmental Harm outside the Marine Disturbance Footprint;

iii. The measures required by Conditions 17.5.i. and 17.5.ii. shall address but not be limited to:

a. Generation and dispersion of turbidity caused by construction activities other than dredging;

b. Monitoring and managing the quality of any decant water released from the MOF bunded area;

c. Preventing harm to or fatalities of marine turtles or cetaceans;

d. Noise and percussion and other potential impacts associated with drilling and/or piling;

e. Generation and dispersion of drilling fluids and drill cuttings;

f. Direct disturbance of habitat; and

g. The avoidance of blasting as far as practicable and management measures to be applied if blasting is required.

iv. Performance Standards against which achievement of the objectives of this condition can be determined.

17.6 Turbidity and sediment deposition and coral loss caused by the construction of the marine facilities shall be subject to the requirements of Conditions 18 and 21.

18 Protection of Coral and Coral Assemblages

18.1 The implementation of the marine works associated with construction, dredging and dredge spoil disposal activities for the facilities listed in Condition 17.2, shall not result in:

i. Average Net Detectable Mortality of *Porites* coral in excess of 30% within the Zones of Moderate Impact;

ii. The Permanent Loss of Coral Assemblages within the Zones of High Impact and Zones of Moderate Impact in excess of:

a. 22 hectares; or

b. the Area of Loss of Coral Assemblages calculated under Condition 14.6.ii, whichever is less; or

iii. Any Detectable Net Mortality of any coral outside the Zones of High Impact and Zones of Moderate Impact.

18.2 If the Permanent Loss of Coral Assemblage exceeds the Area under Condition 18.1.iib, at the time of the third Post-Dredging Marine Habitat Survey the Proponent shall, in consultation with CDEEP and DEC, prepare and submit a Report to the Minister that:

i. predicts the rate of natural recovery; and

ii. assesses whether that rate of recovery is sufficient to ensure the Permanent Loss of Coral Assemblages will be reduced to 22 ha or the Area under Condition 18.1.iib, whichever is less.

If the predicted rate of natural recovery is not sufficient to ensure the Permanent Loss of Coral Assemblages will be reduced to less than 22 ha or the Area under Condition 18.1.iib, whichever is less, the Proponent shall include in that Report an Action Plan with the aim of addressing compliance with Condition 18.1ii, as determined by the Minister.

18.3 The Proponent shall implement any Action Plan included in the Report required by Condition 18.2.

19 Establishing a Construction Dredging Environmental Expert Panel

19.1 Prior to commencement of any construction dredging or spoil disposal activities associated with the marine facilities listed in Condition 17.2, the Proponent shall establish and provide reasonable funding to resource a Construction Dredging Environmental Expert Panel (CDEEP) for the role set out in Condition 19.2 and membership as described in Condition 19.3.

19.2 The role of the CDEEP is to provide advice to the Proponent and the Minister on environmental protection issues associated with construction dredging and spoil disposal management and monitoring including:

i. Development and implementation of the Dredging and Spoil Disposal Management and Monitoring Plan as required by Condition 20;

ii. Interpretation of results of monitoring data acquired during dredging and spoil disposal as required by Condition 20.4 iii;

iii. Proponent's proposed Water Quality Criteria representing the relationship between water quality and coral health as required by Conditions 20.4 iii e., 21.1 and 21.3;

iv. Impact Management Plans required by Condition 21.7v;

v. Post-development Coastal and Marine State and Environmental Impact Survey Reports required by Condition 24;

vi. Any other aspects of construction dredging and spoil disposal management and monitoring requested by the Proponent or the Minister; and

vii. Matters related to the limits set out in Condition 18.1.

19.3 The membership of the CDEEP shall be established as follows:

i. Proponent shall appoint its member(s);

ii. Proponent shall nominate candidates for the Independent Chair to be appointed by the Minister (NOTE: the Minister may seek advice from other sources, including DEC, on nominees for Independent Chair);

iii. Proponent shall, in consultation with the Independent Chair, invite DEC, DoF, DoT and DEWHA to nominate suitably qualified subject matter expert(s) as members of the CDEEP; and

iv. Proponent shall, in consultation with the Independent Chair, nominate, and make all reasonable endeavours to ensure the existence and retention of relevant suitably

qualified independent subject matter expert members on the CDEEP to fulfill the role set out in Condition 19.2, to be appointed by the Minister (NOTE: the Minister may seek advice from other sources, including DEC, on nominees for independent expert(s).

19.4 The Proponent shall develop the Terms of Reference for the CDEEP consistent with the role as set out in Condition 19.2 in consultation with the Minister and the Independent Chair.

20 Dredging and Spoil Disposal Management and Monitoring Plan

20.1 Prior to commencement of dredging or spoil disposal activities associated with the marine facilities listed in Condition 17.2, the Proponent shall prepare and submit a Dredging and Spoil Disposal Management and Monitoring Plan (the Plan) to the Minister that meets the objectives set out in Condition 20.3 and the requirements of Condition 20.4, as determined by the Minister, unless otherwise allowed in Condition 20.2A.

20.2 In preparing this Plan the Proponent shall consult with CDEEP, MTEP, DEC, DoF, DoT, and DEWHA.

20.2A In the event that any portions of the Plan related to specific elements or sub-elements (Condition 17.2) of the Proposal are not submitted as required by Condition 20.1, the Proponent shall submit the portions of the Plan relevant to that element or sub-element to the Minister prior to the commencement of construction of that element or sub-element, taking into account the advice of the CDEEP that meets the objectives identified in Condition 20.3 and the requirements of Conditions 20.4 and 20.5, as determined by the Minister.

20.3 The objectives of the Plan are to ensure that for works associated with the construction of facilities listed in Condition 17.2:

i. do not lead to impacts in excess of the limits set in Condition 18.1 as a result of the construction, dredging or spoil disposal activities; and

ii. to manage, and where practicable avoid adverse impacts to marine turtles and EPBC Act listed marine fauna.

20.4 The Plan shall include the following:

i. Scale maps showing:

a. The ecological elements referred to in Condition 14.2 (i to vi) as required for Condition 14.6 as relevant to the marine facilities listed in Condition 17.2;

b. The marine facilities listed in Condition 17.2;

c. Zones of High Impact, Moderate Impact and Influence as shown in Figures 1 and 2 and Schedule 5 of this Statement;

d. The locations and geographical coordinates of each Monitoring Site and Reference Site for the water quality and sediment deposition monitoring programs;

e. The locations and geographical coordinates of each coral health Monitoring Site and Reference Site, including at least one site in each Regionally Significant Area; and

f. Site designs at each Reference Site and Monitoring Site, including at least one site in each Regionally Significant Area.

ii. The following management elements:

a. Descriptions of the types of dredge(s) and their modes of operation;

b. The most probable and worse-case timing and duration of dredging and spoil disposal activities and contingencies for unforeseen delays;

c. The management actions and contingency measures through a hierarchical management framework to be implemented in the event of exceedance of the triggers specified in Condition 21;

d. Descriptions of practicable additional management measures to be implemented during marine turtle aggregation and nesting periods, intended to prevent harm or fatalities;

e. Reporting protocols between the Proponent and the CDEEP;

f. Procedures to provide to the CDEEP a schedule of works and the 24 hour contact details of the Proponent's on-site dredging liaison officer, to be updated as required during the dredging period; and

g. Procedures to enable the CDEEP to have timely access to environmental monitoring, and relevant operational data comprising contact details of personnel undertaking monitoring, telemetry and on-line access to water quality and coral health data and dredge logs.

iii. The following water quality and sediment deposition monitoring program elements:

a. Monitoring frequency and the location of each monitoring and reference site;

b. Details of the use of in-situ deployable water quality and sediment deposition monitoring instruments, including those with the capability of real-time telemetry access to data;

c. Operating Procedures and Quality Assurance/Quality Control (QA/QC) protocols for environmental condition monitoring methods, site and field instrument maintenance, and data capture, analyses and interpretation;

d. Sufficient monitoring sites and replication to be able to have confidence, at a statistical power of 0.8 or greater, or an alternative statistical power as determined by the Minister, on advice of the CDEEP that the objectives of the Plan set out in Condition 20.3 are being achieved;

e. Details of how the monitoring program will be used to establish predictive links between water quality, sediment deposition and coral health to enable timely management of dredging and spoil disposal activities associated with the marine facilities listed in Condition 17.2; and

f. Details of how the monitoring program will be able to show qualitatively the extent of the turbidity plume from the dredging and spoil disposal or re-use activities (NOTE: remote sensing is an acceptable option).

iv. The following coral health monitoring elements:

a. Monitoring frequency for monitoring and reference sites that does not exceed 2 weeks;

b. Operating Procedures and QA/QC protocols for coral health monitoring methods, monitoring site maintenance, and data capture, analysis and interpretation;

c. Sufficient monitoring sites and replication to be able to have confidence , at a statistical power of 0.8 or greater, or an alternative statistical power as determined by the Minister, on advice of the CDEEP that the objectives of the Plan set out in Condition 20.3 are being achieved;

d. Protocols and procedures for sampling of corals to determine if they are gravid; and

e. Methods to identify and predict significant autumn and spring mass coral spawning periods that could occur during the dredging program.

v. Performance Standards against which achievement of the objectives of this condition can be determined;

vi. In consultation with MTEP, the following marine turtle monitoring and management elements:

a. Design features and operating procedures that will be used to minimise as far as reasonably practicable adverse impacts to marine turtles from dredging and spoil disposal activities;

b. Operating procedures that will be used to detect, record and report to DEC injury or mortality to listed marine turtles from dredging or spoil disposal activities;

c. Performance Standards against which achievement of the objectives of this condition can be determined; and

d. Management Triggers.

20.5 Dredging and spoil disposal activities associated with works for the facilities listed in Condition 17.2 are to cease five days prior to the predicted commencement of mass coral spawning predicted by Condition 20.4.iv.e, or as soon as coral spawning is detected if prior to that predicted time, and to remain suspended for seven days from commencement of mass spawning.

20.6 The Proponent shall implement the Plan.

21 Management Triggers for Dredging and Dredge Spoil Disposal Activities

21.1 The Proponent shall, based on the results of monitoring programs undertaken prior to commencement of any dredging and dredge spoil disposal activities, establish Initial Water Quality Criteria that represent the link between water quality and coral health on advice of the CDEEP, and as determined by the Minister.

21.2 The Proponent shall commence coral health monitoring once the Initial Water Quality Criteria established according to Condition 21.1, or any Modified Water Quality Criteria set by the Minister as set out in Condition 21.3, are exceeded and continue monitoring coral

health for as long as the Water Quality Criteria are exceeded or the Modified Criteria are exceeded.

21.3 The Proponent shall continue investigating the link between water quality and sediment deposition and coral health during dredging and spoil disposal activities associated with works for the marine facilities listed in Condition 17.2 and report the findings to the CDEEP. The Proponent may recommend Modified Water Quality and Sediment Deposition Criteria that better represent the link between water quality and sediment deposition and coral health.

NOTE: The Minister may set Modified Water Quality and Sediment Deposition Criteria that better represent the link between water quality and sediment deposition and coral health in response to the Proponent's recommendations on advice of the independent experts on the CDEEP.

21.4 The management triggers in Table 1 below are to apply to the management of construction, dredging and dredge spoil disposal activities associated with works for the marine facilities listed in Condition 17.2, which will require the Proponent to adopt the actions specified in Conditions 21.5, 21.6, 21.7,21.8, 21.9 and 21.10.

Table 1: Management triggers for construction, dredging and dredge spoil disposal activities associated with works for the facilities listed in Condition 17.2.

	Level 1	**Level 2**	**Level 3**
Zones of High Impact	n/a	n/a	n/a
Zones of Moderate Impact	15% Average Net Detectable Mortality *Porites*; *50%* Mortality *Porites* at any site	25% Average Net Detectable Mortality *Porites*	30% Average Net Detectable Mortality *Porites*
Zones of Influence	Detectable adverse change in the health of coral	10% coral bleaching at any site	Detectable Net Mortality of any coral
Regionally Significant Areas	Detectable adverse change in the health of coral	10% coral bleaching at any site	Detectable Net Mortality of any coral

21.5 The Proponent shall complete analysis of coral monitoring data from each site within 72 hours of the sampling being carried out at all Monitoring Sites.

21.6 If any Level 1 Management Trigger criterion in Condition 21.4 Table 1 is exceeded, within 72 hours of detection of the exceedance, the Proponent shall notify the CDEEP of the exceedance, develop and implement an Impact Management Plan, describing what measures it is taking, or intends to take, to reduce the risk of a Level 2 Management trigger being exceeded and to ensure the limits set in Condition 18.1i and 18.1 iii are not exceeded, and provide that Plan to the CDEEP and the Minister.

21.7 If any Level 2 Management Trigger criterion in Condition 21.4 Table 1 is exceeded the Proponent shall:

i. Immediately advise the CDEEP and report the exceedance to the Minister, and suspend dredging and spoil disposal activities within 48 hours unless otherwise authorised by the Minister;

ii. Identify the dredging and spoil disposal activities and metocean conditions which caused the exceedance;

iii. Identify locations of the dredging and spoil disposal activities where existing impacts are low and those activities could recommence;

iv. Confirm coral health monitoring results with the CDEEP and report to the Minister the status of coral health parameters against the limits set in Condition 18.1i and 18.1 iii; and

v. Prepare an Impact Management Plan, (the Plan) on the advice of CDEEP then submit to the Minister describing what measures the Proponent is taking, or intends to take, to keep impacts to below the limits set in Condition 18.1i and 18.1 iii, and the marine Water Quality Criteria that will be met to allow for the recommencement of dredging and spoil disposal activities and ensure the limits set in Condition 18.1i and 18.1 iii will not be exceeded.

21.8 The Proponent shall only recommence dredging and spoil disposal activities in accordance with the plan required by Condition 21.7v and when water quality meets the criteria established in the Plan prepared for Condition 21.7v.

21.9 If any Level 3 Management Trigger Criterion in Condition 21.4 Table 1 is exceeded the Proponent shall:

i. Immediately suspend all dredging and spoil disposal activities associated with works for the marine facilities listed in Condition 17.2; and

ii. Within 24 hours of that suspension report to the Minister and the CDEEP that it has suspended dredging and spoil disposal activities associated with the works for the marine facilities in Condition 17.2, and the results of the coral health monitoring which led to the suspension.

21.10 If after suspending dredging and spoil disposal activities under Condition 21.9.i the Proponent determines that there is no exceedance of any Level 3 Management Trigger Criteria in Condition 21.4 Table 1, the Proponent shall, in consultation with CDEEP, provide a report to the CEO. The Proponent may then recommence dredging and spoil disposal activities.

22 Horizontal Directional Drilling Management and Monitoring Plan

22.1 Prior to the commencement of construction of the Feed Gas Pipeline System Shoreline Crossing on the west coast of Barrow Island, the Proponent shall prepare and submit to the Minister a Horizontal Directional Drilling (HDD) Management and Monitoring Plan (the Plan) for the management of HDD activities associated with the construction of the Shoreline Crossing on the west coast of Barrow Island that meets the objectives set out in Condition 22.3 and the requirements set out in Condition 22.4, as determined by the Minister.

22.2 The Proponent shall consult with the DEC, DoF and DMP in the preparation of the Plan.

22.3 The objectives of the Plan are to:

i. Reduce the impacts of HDD activities on the Terrestrial and Marine Disturbance Footprints, associated with those activities as far as practicable; and

ii. Ensure that HDD activities do not cause Material or Serious Environmental Harm outside the Terrestrial and Marine Disturbance Footprints associated with those activities or exceed the coral loss limit in Condition 22.6.

22.4 The Plan shall include:

i. Management measures to reduce the impacts from HDD activities as far as practicable;

ii. Management measures to ensure that HDD activities do not cause Material or Serious Environmental Harm outside the Terrestrial and Marine Disturbance Footprints associated with those activities, or the coral loss limit in Condition 22.6 to be exceeded; and

iii. Performance Standards against which achievement of the objectives of this condition can be determined.

22.5 The measures required by Condition 22.4i. and 22.4ii. shall address:

i. The generation and dispersion of turbidity associated with discharge of drill cuttings and fluids to the marine environment;

ii. Noise and percussion;

iii. Direct disturbance of habitat;

iv. Preventing harm to, or fatalities of marine turtles;

v. The use of low toxicity polymer drilling fluids or water based fluids unless otherwise authorised by the Minister;

vi. Management and disposal of drill cuttings and fluids returned to the surface by circulation to prevent pollution; and

vii. A marine monitoring program to detect changes to ecological elements outside the Marine Disturbance Footprint components associated with the marine facilities listed in Condition 14.3.

22.6 Notwithstanding Condition 18.1, the Detectable Net Mortality of Coral Assemblages for the HDD activities associated with the construction of the shoreline crossing on the west coast of Barrow Island shall not exceed 1.2 ha.

22.7 The Proponent shall implement the Plan.

23 Offshore Gas Pipeline Installation Management Plans

23.1 Prior to commencement of installation of the Feed Gas Pipeline System and Domestic Gas Pipeline respectively, the Proponent shall submit to the Minister an Offshore Gas Pipeline Installation Management Plan (the Plan) that meets the objectives set out in Condition 23.3 and the requirements of Condition 23.4 as determined by the Minister.

23.2 In preparing the Plan the Proponent shall consult with DEC, DEWHA and DMP.

23.3 The objectives of the Plan are to:

i. Reduce the impacts of pipeline installation activities on the Terrestrial and Marine Disturbance Footprints as far as practicable; and

ii. Ensure that pipeline installation activities do not cause Material or Serious Environmental Harm outside the Terrestrial and Marine Disturbance Footprints associated with the facilities.

23.4 The Plan shall include:

i. Management measures to reduce the impacts from pipeline installation activities as far as practicable;

ii. Management measures to ensure that pipeline installation activities do not cause Material or Serious Environmental Harm outside the Terrestrial and Marine Disturbance Footprints; and

iii. Performance Standards against which achievement of the objectives of this condition can be determined.

23.5 The measures required by Conditions 23.4.i. and 23.4.ii. shall address:

i. The generation and dispersion of turbidity associated with pipeline installation activities;

ii. Direct disturbance of habitat;

iii. Preventing harm to, or fatalities of turtles;

iv. Program for pre and post pipeline installation seafloor survey of the Marine Disturbance Footprint and the areas at risk of Material or Serious Environmental Harm due to the construction of the pipeline in State waters;

v. Details of mooring pattern design, including range and bearing from fairleads of individual anchor drops to show how the mooring pattern has been designed to limit impacts in coral habitat areas within State waters;

vi. Details of a typical mooring pattern design for other than coral habitat areas within State waters;

vii. Procedures to minimise as far as practicable the impacts resulting from anchoring, wire and chain sweep, and wash from thrusters and propellers, on benthic communities;

viii. Details of proposed hydrotest water discharge and how this will be managed to avoid Material or Serious Environmental Harm to the marine environment; and

ix. A marine monitoring program to detect changes to ecological elements outside the Marine Disturbance Footprint for the Offshore Gas Pipelines identified in Condition 14.3iv and 14.3v.

23.6 The Proponent shall implement the Plan.

23A Marine Environmental Quality Management Plan

23A.1 Prior to the shipment of products from the Proposal the Proponent shall submit to the Minister a Marine Environmental Quality Management Plan (the Plan) that shall apply to

the operation of the proposal that meets the objectives set out in Condition 23A.2 and the requirements of Condition 23A.3, as determined by the Minister.

23A.2 The objectives of the Plan are to:

i. establish and spatially define a set of EVs, EQOs and associated levels of ecological protection for marine waters of the Barrow Island Port area and any other areas of State Coastal Waters (with the exception of waters within gazetted Marine Conservation Reserves where Management Plans are in place and interim EVs, EQOs and levels of ecological protection have been endorsed by the EPA), where there is potential for the operation of the Proposal to affect marine environmental quality; and

ii. to protect the EVs, and achieve EQOs and associated levels of ecological protection for marine waters defined in Condition 23A.2 for the life of the Proposal.

23A.3 The Plan shall include:

i. A set of EVs and EQOs and associated levels of ecological protection for marine waters of the Barrow Island Port area and any other areas of State Coastal Waters (with the exception of waters within gazetted Marine Conservation Reserves where Management Plans are in place and interim EVs, EQOs and levels of ecological protection have been endorsed by the EPA), where there is potential for the operation of the Proposal to affect marine environmental quality

ii. The application of waste minimization principles where practicable (avoid, minimize, reduce and rectify) to the Proposal;

iii. Recognition of the inherent environmental values of the marine environment surrounding Barrow Island, and the EPA-endorsed interim EVs, EQOs and levels of ecological protection that have been assigned to State coastal marine waters throughout the Pilbara, including Barrow Island (DoE, 2006);

iv. A description of the consultation conducted on the proposed EVs, EQOs and associated levels of ecological protection;

v. Spatially accurate maps showing the EVs, EQOs and levels of ecological protection and their spatial allocation assigned with consideration to the outcomes of consultation;

vi. An environmental quality monitoring program to determine whether the objectives in Condition 23A.2.ii are being achieved;

vii. The indicators that will be monitored, a schedule detailing the locations and frequency for monitoring and the numerical and narrative EQC, including Environmental Quality Guidelines and Environmental Quality Standards;

viii. Standard operating procedures for conducting monitoring;

ix. Decision schemes for evaluating monitoring data against the Environmental Quality Guidelines and Environmental Quality Standards referred to in Condition 23A.3vi above;

x. Performance Standards against which achievement of the objectives of this condition can be determined; and

xi. Reporting procedures and protocols that shall apply.

NOTES:

DoE (2006):- *Pilbara Coastal Water Quality Consultation Outcomes: Environmental Values and Environmental Quality Objectives*. Department of Environment, Marine Report No.1, March 2006.

23A.4 The Proponent shall implement the Plan.

23A.5 If monitoring shows that an Environmental Quality Standard has been exceeded, the Proponent shall:

i. Notify the CEO of the exceedance within two business days; and

ii. Prepare and submit an Environmental Quality Management Report within one month of detecting the exceedance that details management action(s) to be implemented to rectify the cause of the exceedance, including timeframes for implementation and reporting of performance, as determined by the Minister.

23A.6 The Proponent shall implement management action(s) in accordance with the Environmental Quality Management Report required by Condition 23A.5ii above.

24 Post-Development Coastal and Marine State and Environmental Impact Survey Report

24.1 The Proponent shall conduct Post-Development Coastal and Marine State Surveys associated with the construction of marine facilities listed in Condition 17.2 in accordance with the approved scope of works required by Condition 14.1, within three months following the date on which the Proponent issues a certificate of acceptance of the dredge and dredge spoil disposal program under the contract, issued for the Program. Surveys shall be repeated at the same time of year (where practicable) for at least an additional two years, unless otherwise determined by the Minister.

24.2 The purpose of the Post-Development Coastal and Marine State and Environmental Impact Surveys is to determine if changes have occurred to marine ecological elements, including the Area of Loss of Coral Assemblages expressed as hectares, compared with pre-development baseline marine environmental state established in the Report required by Condition 14.2.

24.3 Within 3 months of completion of each annual Post-Development Coastal and Marine State and Environmental Impact Survey required by Condition 24.1, the Proponent, on advice of the CDEEP, shall report the results of the survey to the Minister, including detected changes to marine ecological elements listed in Condition 14.2.

24.4 The report of the third and any subsequent Post-Development Coastal and Marine State and Environmental Impact Surveys shall contain recommendations as to the need for continuing the surveys and reporting, for determination by the Minister.

25 Coastal Stability Management and Monitoring Plan

25.1 Prior to the commencement of construction of the marine facilities listed in Condition 17.2, the Proponent shall submit a Coastal Stability Management and Monitoring Plan (the Plan) to the Minister that meets the objectives set in Condition 25.3 and the requirements of Condition 25.4 as determined by the Minister, unless otherwise allowed in Condition 25.1A.

25.1A In the event that any portions of the Plan related to specific elements or sub-elements (Condition 17.2) of the Proposal are not submitted as required by Condition 25.1, the

Proponent shall submit the portions of the Plan relevant to that element or sub-element to the Minister prior to the commencement of construction of that element or sub-element, that meets the objectives set out in Condition 25.3 and the requirements of Condition 25.4, as determined by the Minister.

25.2 In preparing the Plan the Proponent shall consult with DoT, MTEP, DEWHA and DEC.

25.3 The objectives of the Plan are to:

i. Ensure that the marine facilities listed in Condition 17.2 (excluding WAPET Landing), do not cause significant adverse impacts to the beaches adjacent to those facilities; and

ii. Establish a monitoring programme to detect adverse changes to the beach structure and beach sediments that could have implications for marine turtles nesting on the beaches adjacent to the marine facilities listed in Condition 17.2 (excluding WAPET Landing) on Barrow Island.

25.4 The Plan shall include:

i. Baseline state of the beaches adjacent to Town Point from Mean Low Water to the permanent dune vegetation line;

ii. A monitoring program to detect changes to profiles of beaches and sand grain size adjacent to Town Point from Mean Low Water to the permanent dune vegetation line and the extent of any erosion or accretion of sand; and

iii. Performance Standards against which achievement of the objectives of this condition can be determined; and

iv. Management Triggers.

25.5 The Proponent shall implement the Plan.

25.6 If monitoring shows that the beach profiles and sand grain size do change beyond the Performance Standards set under Condition 25.4.iii, the Proponent shall submit, with the advice of the MTEP, a report to the Minister within three months of detection describing:

i. The nature and extent of any change and implications for marine turtle nesting;

ii. The likely causes of that change; and

iii. Proposed mitigation measures, including identifying appropriate sand sources and vegetation stock for any rehabilitation works required.

25.7 In preparing any report required as part of Condition 25.6 the Proponent shall consult with DoT, MTEP, DEWHA and DEC.

26 Reservoir Carbon Dioxide Injection System

26.1 The Proponent shall design and construct Carbon Dioxide Injection System infrastructure in conjunction with the Gas Treatment Plant on Barrow Island that is capable of disposing by underground injection, 100% of the volume of reservoir carbon dioxide to be removed during routine gas processing operations on Barrow Island and that would be otherwise vented to the atmosphere.

26.2 The Proponent shall implement all practicable means to inject underground all reservoir carbon dioxide removed during gas processing operations on Barrow Island and ensure that calculated on a 5 year rolling average, at least 80 percent of reservoir carbon dioxide removed during gas processing operations on Barrow Island and that would be otherwise vented to the atmosphere is injected.

26.3 Prior to the commencement of operation of the Carbon Dioxide Injection System infrastructure, the Proponent shall prepare and submit to the Minister a monitoring program which sets out how the annual reporting requirements for the performance of the Carbon Dioxide Injection System as required by Condition 5.2.vi and Schedule 3.6 will be met.

26.4 The Proponent shall implement the Program required in Condition 26.3.

27 Greenhouse Gas Abatement Program

27.1 Prior to the commencement of construction of the Gas Treatment Plant the Proponent shall prepare and submit to the Minister a Greenhouse Gas Abatement Program (the Program) that meets the objectives set in Condition 27.2 as determined by the Minister.

27.2 The objectives of the Program are to:

i. Demonstrate that currently applied best practice in terms of greenhouse gas emissions have been adopted in the design and operations of the Gas Treatment Plant. The greenhouse gas emissions per tonne of LNG produced should be normalized to the standard conditions and bench-marked against publically available data for other national and overseas LNG processing facilities; and

ii. Periodically review and where practicable, adopt advances in technology and operational processes aimed at reducing greenhouse gas emissions per tonne of LNG produced.

27.3 The Proponent shall implement the Program.

28 Best Practice Pollution Control Design

28.1 The Proponent shall submit to the DEC as part of its Works Approval application for the Gas Treatment Plant a report that:

i. Demonstrates that the proposed works adopt best practice pollution control measures to minimise emissions from the Gas Treatment Plant;

ii. Sets out the base emission rates for major sources for the Gas Treatment Plant and the design emission targets; and

iii. Addresses normal operations, shut down, start up, and equipment failure conditions.

29 Air Quality Management Plan

29.1 The Proponent shall submit to the DEC as part of its Works Approval application for the Gas Treatment Plant an Air Quality Management Plan (the Plan) that meets the objectives of Condition 29.2 and the requirements of Condition 29.3.

29.2 The objectives of the Plan are to:

i. Ensure air quality meets appropriate standards for human health in the workplace; and

ii. Ensure air emissions from the Gas Treatment Plant operations do not pose a risk of Material or Serious Environmental Harm to the flora, vegetation communities, fauna, and subterranean fauna of Barrow Island.

29.3 The Plan shall include:

i. An Ambient Air Monitoring Program to ensure the objectives set in Condition 29.2 are met;

ii. The Program shall include a list of chemicals to be monitored, the location of air quality sampling points and the frequency of air quality monitoring;

iii. Emission targets for these chemicals; and

iv. Performance Standards against which achievement of the objectives of this condition can be determined.

29.4 The Proponent shall implement the Plan.

30 Solid and Liquid Waste Management Plan

30.1 Prior to commencement of construction of the terrestrial facilities listed in Condition 6.3, the Proponent shall submit a Solid and Liquid Waste Management Plan (the Plan) to the Minister that meets the objectives of Condition 30.2 and the requirements of Condition 30.3, unless otherwise allowed in Condition 30.1A, as determined by the Minister to cover all solid wastes, waste from the wastewater treatment plant and other liquid waste.

30.1A In the event that any portions of the Plan related to specific elements or sub-elements (Schedule 1) of the Proposal are not submitted as required by Condition 30.1, the Proponent shall submit the portions of the Plan relevant to that element or sub-element to the Minister prior to the commencement of construction of that element or sub-element, that meets the objectives set out in Condition 30.2 and the requirements of Condition 30.3, as determined by the Minister.

30.2 The objectives of the Plan are to:

i. Ensure all Proposal-related solid and liquid wastes are either removed from Barrow Island or, if not, that all practicable means are used to ensure that waste disposal does not cause Material or Serious Environmental Harm to Barrow Island and its surrounding waters;

ii. Ensure discharges from any waste water treatment plant, reverse osmosis plant, or other process water are disposed of via deep well injection, unless otherwise authorised by the Minister; and

iii. Ensure any deep well injection of Proposal-related liquid wastes is conducted in a manner that will not cause Material or Serious Environmental Harm to subterranean fauna and their habitats on Barrow Island.

30.3 The Plan shall include:

i. A description of the facilities to be provided and management measures to be implemented to ensure wastes are managed to meet the objectives set in Condition 30.2; and

ii. Performance Standards against which achievement of the objectives of this condition can be determined.

30.4 The Proponent shall implement the Plan.

31 Aboriginal Cultural Heritage Management Plan

31.1 Prior to commencement of construction of terrestrial facilities listed in Condition 6.3 the Proponent shall submit to the Minister an Aboriginal Cultural Heritage Management Plan (the Plan) that meets the requirements of Condition 31.3 as determined by the Minister.

31.2 In preparing the Plan, the Proponent shall consult with the Department of Indigenous Affairs and Indigenous stakeholders.

31.3 The Plan shall include:

i. Surveys for potential cultural heritage sites within the Terrestrial Disturbance Footprint; and

ii. Provisions for the lawful retrieval and relocation of any heritage material which lies within the Terrestrial Disturbance Footprint in consultation with the Indigenous stakeholders.

31.4 The Proponent shall implement the Plan.

32 Post-Construction Rehabilitation Plan

32.1 Prior to commencement of construction of terrestrial facilities listed in Condition 6.3, the Proponent shall submit to the Minister a Post-Construction Rehabilitation Plan (the Plan) to cover those areas that will be disturbed as part of construction and areas that are part of the Terrestrial Disturbance Footprint, but which are not required for the future construction and operation of the Proposal that meets the objectives set in Condition 32.4 and the requirements of Condition 32.5 as determined by the Minister, unless otherwise allowed in Condition 32.2.

32.2 In the event that any parts of the Plan related to specific elements or sub-elements (Schedule 1) of the Proposal are not submitted as required by Condition 32.1, the Proponent shall submit the portions of the Plan relevant to that element or sub-element to the Minister prior to the planned commencement of construction of that element or sub-element. All portions of the Plan shall meet the objectives identified in Condition 32.4 and the requirements of Condition 32.5 as determined by the Minister.

32.3 In preparing the Plan the Proponent shall consult with DEC and DMP.

32.4 The objectives of the Plan are to:

i. Ensure that the rehabilitation of terrestrial areas following construction is properly planned in a manner which promotes self-sustaining ecosystems able to be managed as part of their surroundings consistent with the conservation objectives of a class 'A' Nature Reserve;

ii. Design rehabilitation of native vegetation to ultimately develop into viable ecological systems which are comparable and compatible with surrounding native vegetation and

its land uses, and restores as closely as practicable the pre-disturbance biodiversity and ecosystem functional values;

iii. Ensure planning, implementation, monitoring and reporting on rehabilitation is carried out consistent with industry best practice;

iv. Ensure management of rehabilitation continues until affected areas are self sustaining; and

v. Better inform any on-going rehabilitation and post-closure rehabilitation.

32.5 The Plan shall include:

i. Identification of those sites that will be disturbed for construction but are not required for the future construction and operation of the Proposal;

ii. Identify those areas that are part of the Terrestrial Disturbance Footprint not required for the future construction and operation of the Proposal that can be rehabilitated;

iii. Objectives for rehabilitation, including any site-specific variations;

iv. Plans for topsoil management;

v. Targets for completion criteria including nutrient cycling and self sustainability of ecosystems agreed with DEC;

vi. Targets for flora and fauna recruitment, including specific targets for:

a. the return of recalcitrant species;

b. the return of key fauna habitat;

c. the translocation of viable specimens of long-lived species required for fauna habitat;

d. the re-colonisation of invertebrate fauna; and

e. the re-colonisation of mycorrhizal fungi.

vii. Plans to restore hydrological function;

viii. Integration with island-wide management;

ix. Monitoring, and adaptive management including adaptation to climate change;

x. Identification of knowledge gaps and on-going studies to address lack of knowledge;

xi. Plans for appropriate plant species composition including consideration of species vulnerability to and dependence on fire;

xii. Rehabilitation following Proposal attributable fires;

xiii. Reporting protocols including peer review; and

xiv. Completion criteria agreed with DEC.

32.6 The Proponent shall implement the Plan.

32.7 The Proponent shall revise as required and submit to the Minister a revised Post-Construction Rehabilitation Plan in response to the results of the monitoring program and results of any on-going studies. In revising the Plan the Proponent shall consult with DEC.

32.8 The Proponent shall also implement the Plan for other areas requiring rehabilitation prior to final project closure but not identified in Condition 32.5.

33 Project Site Rehabilitation Plan

33.1 Within five years following commencement of Operations the Proponent shall submit a draft Project Site Rehabilitation Plan (the Plan) for review by the DEC. The draft plan shall be informed by the monitoring, results of any ongoing studies and experience obtained through the implementation of the Post-Construction Rehabilitation Plan required by Condition 32.1. The Plan shall meet the objectives set in Condition 33.3 and the requirements of Condition 33.4 as determined by the Minister.

33.2 In preparing the draft Plan the Proponent shall consult with DEC, DMP, DSD and DEWHA.

33.3 The objectives of the Plan are to:

i. Ensure that the rehabilitation of terrestrial areas following decommissioning is properly planned in a manner which promotes self-sustaining ecosystems able to be managed as part of their surroundings consistent with the conservation objectives of a class 'A' Nature Reserve;

ii. Design rehabilitation of native vegetation to ultimately develop into sustainable ecological systems which are comparable and compatible with surrounding native vegetation and its land uses, and restores as closely as practicable the pre-disturbance biodiversity and functional values;

iii. Ensure planning, implementation and reporting on rehabilitation is carried out in a manner consistent with industry best practice; and

iv. Ensure management of rehabilitation continues until affected areas are self sustaining.

33.4 The Plan required by Condition 33.1 shall address the requirements as set out in the Post-Construction Rehabilitation Plan required for Condition 32.5 but for final rehabilitation purposes.

33.5 Within 12 months following receipt of formal advice from the DEC on the draft Plan, the Proponent shall prepare and submit the revised Plan, taking into account comments and recommendations (if any) received from DEC, to the Minister that meets the objectives set in Condition 33.3 and the requirements of Condition 33.4 as determined by the Minister.

33.6 The Proponent shall revise the Plan as required and submit the final Plan no less than five years prior to the anticipated date of decommissioning and closure, informed by the results of any studies, monitoring and experience of the implementation of the Post-Construction Rehabilitation Plan required by Condition 32.1. In preparing the revised Plan the Proponent shall consult with DEC.

33.7 The Proponent shall implement the Plan upon project closure and decommissioning.

34 Decommissioning and Closure Plan

34.1 At least four years prior to the anticipated date of decommissioning and closure, or at a time otherwise agreed by the Minister, the Proponent shall prepare a Decommissioning and Closure Plan (the Plan) for terrestrial and marine infrastructure facilities, that meets the objectives identified in Condition 34.2A and requirements of Condition 34.3 as determined by the Minister.

34.2 In preparing the Plan the Proponent shall consult with DEC, DMP, DSD and DEWHA.

34.2A The objectives of the Plan are to ensure that:

i. unless otherwise agreed with the Minister, the area occupied by the terrestrial and marine infrastructure facilities is returned to its undisturbed state; and

ii. unless otherwise agreed with the Minister, the site does not pose a risk to wildlife or personnel greater than surrounding undisturbed areas.

34.3 The Plan shall include:

i. Provision for the removal or, if appropriate as determined by the Minister, retention of plant and infrastructure;

ii. The rationale for the siting and design of plant and infrastructure to be retained as relevant to environmental protection;

iii. Identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities;

iv. Performance Standards against which achievement of the objectives of this condition can be determined; and

v. Identification of its relationship to and consistency with the Project Site Rehabilitation Plan.

34.4 The Proponent shall implement the Plan.

35 Public Availability of Plans, Programs etc.

35.1 Management plans, reports, systems, and programs referred to in the following conditions shall be made publicly available as determined by the Minister: 5.1, 5.3, 6.1, 7.1, 8.1, 10.1, 11.1, 12.1, 13.1, 14.2, 16.1, 17.1, 20.1, 22.1, 23.1, 23A.1, 24.3, 25.1, 26.3, 27.1, 28.1, 29.1, 30.1, 31.1, 32.1, 33.1 and 34.1.

36 Submission of Plans, Programs etc

36.1 Where a Condition requires that a plan, report, system or program meet certain aims, objectives or purposes and certain requirements 'as determined by the Minister', the plan, report, system or program is not deemed to have met the Condition unless and until the Minister finds that the aims, objectives or purposes and certain requirements have been met.

36.2 In the event that following the approval of a document (plan, report, system or program referred to in Condition 36.1) the document is found by the Proponent or the Minister to no longer meet the requirements set out in Condition 36.1 or the Proponent or the Minister has

identified elements of works not appropriately covered by the document or the Proponent or the Minister identifies measures to improve the document, an amendment or addendum to the approved document may be developed by the Proponent in accordance with the following:

i) If the amendment or addendum is not a substantial change to management measures within the document and will not result in the document being inconsistent with its objectives, the Proponent may implement the amendment or addendum as if that amendment or addendum were approved and subsequently submit the amendment or addendum to the Minister within five business days of implementation. If approval is later refused, the Proponent will cease to implement the amendment or addendum, but will not have been in breach of the conditions during the period of implementation; or

ii) If the amendment or addendum is a substantial change to any management measures or any other change the Proponent shall submit the amendment or addendum to the Minister.

36.3 All supplementary plans, reports, systems or programs submitted under Condition 36.2 are subject to Condition 36.1, and if agreed by the Minister, to constitute an approved amendment or addendum to the plan, report, system or program.

Donna Faragher JP MLC
MINISTER FOR ENVIRONMENT; YOUTH

10 AUG 2009

Schedule 1 - Summary of Key Proposal Characteristics

Element	Description
TERRESTRIAL FACILITIES	
Gas Treatment Plant	
Location	Town Point
Number of Liquefied Natural Gas (LNG) trains	3
Size of LNG trains	5 MTPA nominal
LNG tank size	2 x 180,000 m^3 (nominal)
Gas Processing Drivers	6 x 80 MW (nominal) gas turbines fitted with dry low NOx (DLN) burners
Power Generation	5 x 116 MW (nominal) conventional gas turbines fitted with DLN burners
Flare design	Ground flare for main plant flare. Boil Off Gas (BOG) (elevated) flare in storage and loading area (rarely used)
Domestic gas production rate	300 TJ/day
Condensate production rate	3,600 m^3/day (nominal) hydrocarbon condensate
Condensate tank size	4 x 35,000 m^3 (nominal)
Volume of earthworks	6 million m^3 (nominal)
Associated Terrestrial Infrastructure	
Terrestrial component of the Barge Landing (WAPET Landing) upgrade	Terrestrial components of the upgrade of the existing WAPET Landing
Construction Village	Approximately 2.6 km south of Gas Treatment Plant.
Operations Workforce Accommodation	Within an extension to the existing Chevron Camp
Administration and Operations Complex	Near the Gas Treatment Plant outside the Plant boundary
Utilities Area	Permanent Utilities Area to be located within the Gas Treatment Plant Site
Utilities Corridors	Between Utilities Area, Construction Village and Gas Treatment Plant
Road Upgrades	WAPET landing to Town Point. Town Point to the Airport (via Construction Village). Feed Gas Pipeline System route.
Airport Modifications	Extension of existing runway to the south No realignment Vegetation clearing within current airport perimeter required
Communications	Microwave communications tower and associated infrastructure to be installed on Barrow Island.
Water Supply	Onshore infrastructure
Onshore Feed Gas Pipeline System	
Length onshore (Barrow Island)	Approximately 14 km
Design onshore	Buried, between North White's Beach and the Gas Treatment Plant
Construction easement (onshore)	Approximately 42 ha
Terrestrial component of the shore crossing	North White's Beach Area of disturbance (HDD onshore construction area) approximately 7 ha
Onshore Domestic Gas Pipeline	
Route onshore (BWI)	Within Gas Treatment Plant boundary
Length onshore (mainland)	30 to 40 km
Construction easement (mainland)	90 to 120 ha
Shoreline crossing (mainland)	Specific location to be determined by the Proponent

Element	Description
Carbon Dioxide (CO_2) Injection System	
CO_2 Compression Facilities	Located within Gas Treatment Plant boundary
CO_2 Pipeline	Length approximately 10 km. Easement approximately 8 ha.
CO_2 Injection Wells	8-9 injection wells directionally drilled from 3-4 surface locations
Observation Wells	Observation well (or wells) may be drilled from each cluster of injection wells.
Pressure Management Wells	4 pressure management water wells (or water production wells) will be required to manage pressure in the Dupuy formation. Note: the final location of these wells is subject to ongoing technical assessment.
Pressure Management Water Injection Wells	4 pressure management water injection wells for the re-injection of water produced from the Lower Dupuy formation by pressure management wells. The water will be re-injected into the Barrow Group from a vertical depth of 1200-1600m. Note: the final location of these wells is subject to ongoing technical assessment.
Anode Wells	Four shallow drilled anode wells are required for each CO_2 drill centre for the purposes of cathodic protection. Anode wells are also required for cathodic protection of pressure management wells and pressure management water injection wells (one anode well pair per water producer/injector pair). An anode well will also be required for each observation bore not on a drill centre. Total anode well count is up to 19 (subject to final cathodic protection design). Note: the final location of these wells is subject to ongoing technical assessment.
Monitoring	Monitoring activities, including the acquisition of seismic data, will be undertaken as part of ongoing reservoir performance management.
Greenhouse Gas Emissions Abatement	
Abatement actions below are anticipated to yield a greenhouse gas emissions intensity of 0.348 tonnes CO_2e per tonne of LNG shipped.	
"Beyond No Regrets Measures"	
Underground injection of reservoir carbon dioxide	
Improved LNG Technology	Adoption of a no routine venting or flaring policy. Use of dry compressor and hydrocarbon pump seals. Providing a cold recovery exchanger for the overhead gas from the Nitrogen Rejection Column to allow reuse of overhead gas in the high pressure (HP) fuel gas system.
"No Regrets Measures"	
Gas production via a sub-sea production system	
Improved LNG Technology	LNG processing trains increased to the maximum capacity that is practicable. A-MDEA selected as the carbon dioxide removal medium. Utilisation of waste heat, such that fired heaters are only required for plant start-up.
Wastewater	
Wastewater Treatment Plant (WWTP)	Wastewater treatment plant installed during pre-construction (with sufficient capacity for construction workforce) will be modified as

Element	Description
	necessary to support operations workforce.
Treated effluent disposal	Deep well injection of surplus treated effluent
Reverse osmosis (RO) brine disposal	Deep well injection or ocean outfall (east coast Barrow Island)
Contaminated wastewater disposal	Deep well injection of contaminated wastewater streams when practicable
Process water disposal	Deep well injection of process water
MARINE FACILITIES	
Materials Offloading Facility (MOF)	
Causeway design	Solid
MOF design	Solid with offloading facilities including wharf, dock, mooring dolphins, ramp and tug pens to support a range of vessel sizes and loads.
Causeway length /MOF length	Combined length from the nominated onshore set out point (E 340013.006 N 7700404.460 - approximately 250m inland from Town Point) to the top of batter at interface with start of the LNG Jetty is approximately 2120m. Note: for this component, "approximately" means ± 5%.
MOF access	Constructed channel approximately 750 m long x 165 m wide, Channel dredged to approximately 6.5 m (relative to chart datum), Berthing Pocket dredged to approximately 8 m (relative to chart datum).
LNG Jetty	
LNG jetty design	Open pile structure
LNG jetty length	LNG Jetty length from the end of the MOF to the end of the LNG Jetty, midway between the two LNG berths, is approximately 2.1 km. Note: for this component, "approximately" means ± 5%.
LNG and Condensate load-out	Via dedicated lines installed to the LNG Berth (eastern end of LNG Jetty)
Turning basin and access channel design	Turning basin shape shown in Figure 2. Dual Berth facility (designed to meet safety requirements). Turning Basin and Access Channel dredged to approximately 13.5 m (relative to chart datum), Berthing Pocket dredged to approximately 15 m (relative to chart datum).
Dredging	
MOF volume	1.1 million m^3 (nominal)
LNG Turning Basin and Shipping Channel volume	6.5 million m^3 (nominal, dual berth).
Dredge Spoil Disposal Ground	
Location	Closest point is approximately 10 km from the east coast of Barrow Island
Area	Approximately 900 ha. Note: for this component, "approximately" means ± 5%.
Drill and Blast	
Associated with the dredging component of the construction of the Causeway, MOF and LNG Jetty (access channels and berthing pockets).	50,000 m^3 (nominal)
Offshore Feed Gas Pipeline System	
Length in State waters	Approximately 5.6 km (3 nautical miles)

Element	Description
Marine component of the shore crossing	Offshore from North White's Beach
Offshore Domestic Gas Pipeline	
Length offshore	Approximately 70 km
Offshore route	East coast of Barrow Island to mainland shore crossing
Barge Landing	
Marine components of the Barge Landing (WAPET Landing) upgrade	Marine components of the upgrade of the existing WAPET Landing
Water Supply	
Source	Seawater intake will be required
Location	Preferred intake location under or adjacent to MOF structure
Volume	5,150 m^3/day (nominal) raw water supply
Applicable to the Entire Proposal	
Clearing	
All elements of the Proposal	Clearing of native vegetation for the purpose of implementing the Proposal.

Figure 1: Dredging and Spoil Disposal – Zones of High Impact, Zones of Moderate Impact and Zones of Influence – Regional Perspective

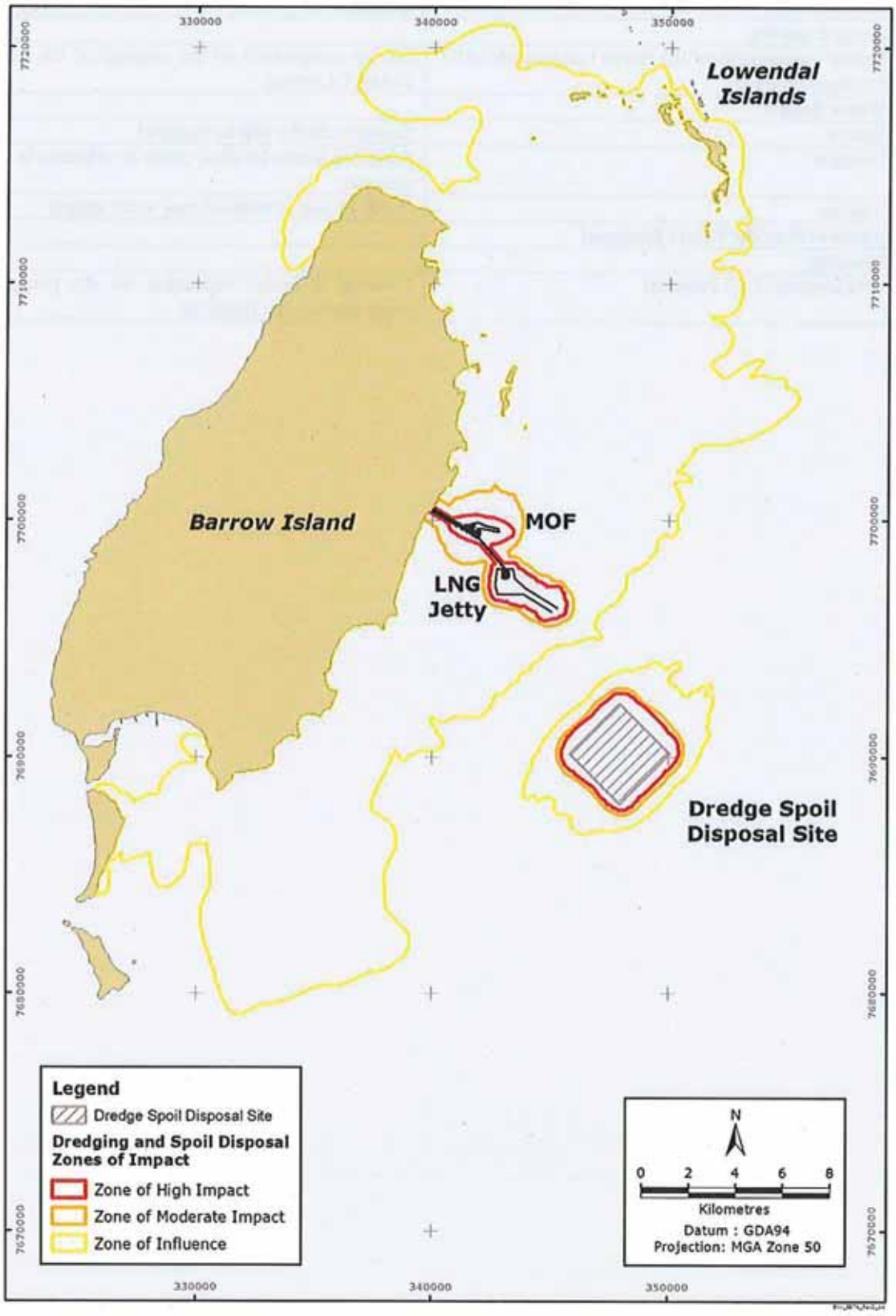
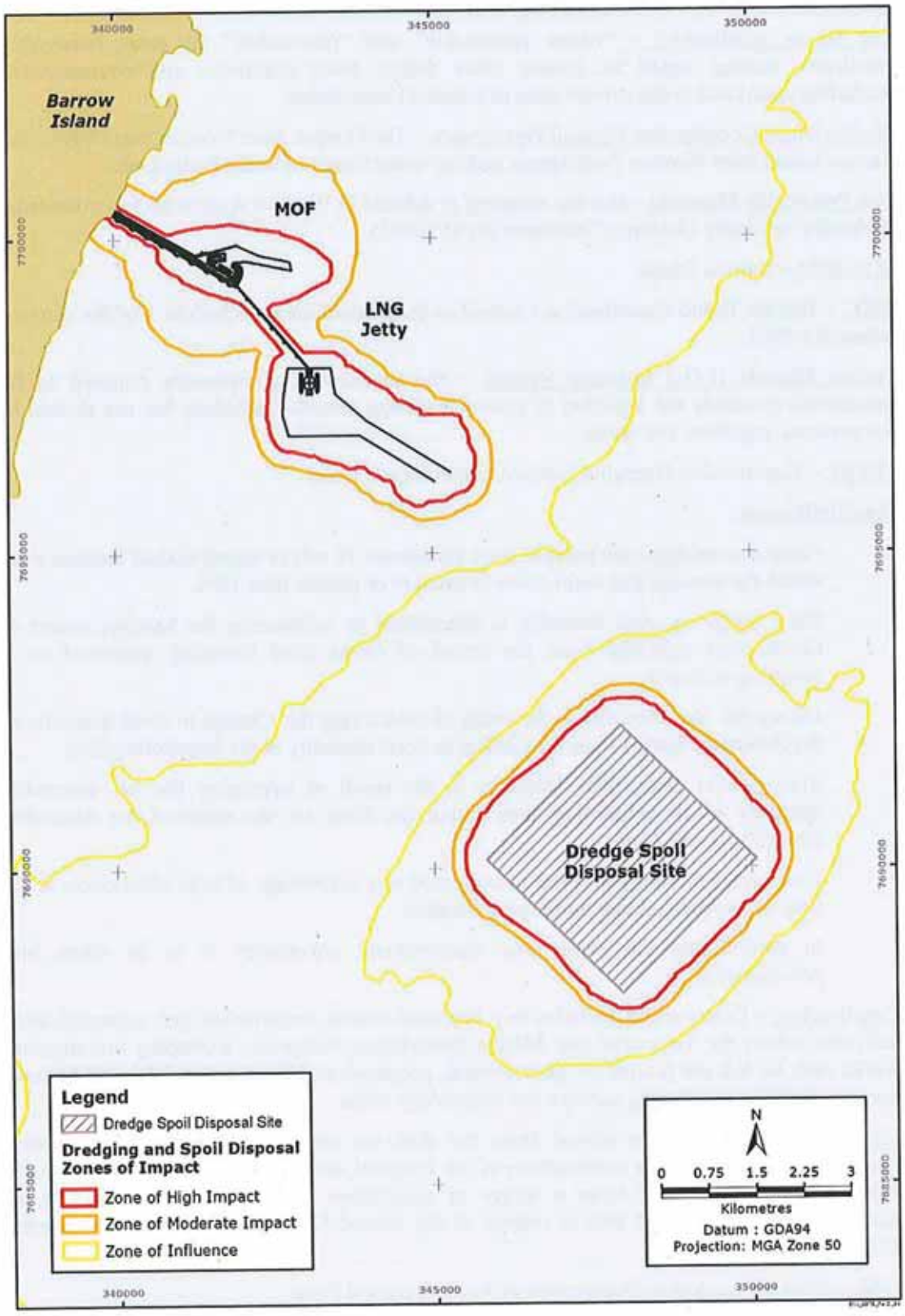


Figure 2: Dredging and Spoil Disposal – Zones of High Impact, Zones of Moderate Impact and Zones of Influence – Focus on Dredging and Spoil Disposal



NOTE: Refer to Schedule 5 for coordinates of the zones.

Schedule 2 – Terminology, definitions and acronyms

AQIS – Australian Quarantine Inspection Service

"As far as practicable" - "where practicable" and "practicable" all mean reasonably practicable having regard to, among other things, local conditions and circumstances (including costs) and to the current state of technical knowledge.

Barrow Island Coordination Council Participants – The Gorgon Joint Venture participants, the Barrow Island Joint Venture Participants and any other future Industry Participant.

Best Practicable Measures - Has the meaning as defined in Western Australian Environmental Protection Authority Guidance Statement No 55 (2003).

BI or BWI – Barrow Island

BICC – Barrow Island Coordination Council as established under Schedule 1 of the *Barrow Island Act 2003*.

Carbon Dioxide (CO_2) Injection System – the mechanical components required to be constructed to enable the injection of reservoir carbon dioxide, including but not limited to compressors, pipelines and wells.

CDEEP – Construction Dredging Environmental Expert Panel

Coral definitions:

Coral Assemblages are benthic areas (minimum 10 m^2) or raised seabed features over which the average live coral cover is equal to or greater than 10%.

The Change in coral mortality is determined by subtracting the baseline extent of Gross coral mortality from the extent of Gross coral mortality measured on a sampling occasion.

Detectable Net Mortality is the result of subtracting the Change in coral mortality at the Reference Site(s) from the Change in coral mortality at the Monitoring Site.

Average Net Detectable Mortality is the result of averaging the net detectable mortality of all monitoring sites within the Zone i.e. the mean of net detectable mortality of any Zone.

Gross coral mortality at a site is expressed as a percentage of total coral cover at the time of sampling at that monitoring location.

In determining the coral loss, measurement uncertainty is to be taken into consideration.

Construction – Construction includes any Proposal-related construction and commissioning activities within the Terrestrial and Marine Disturbance Footprints, excluding investigatory works such as, but not limited to, geotechnical, geophysical, biological and cultural heritage surveys, baseline monitoring surveys and technology trials.

Construction Period - The period from the date on which the Gorgon Joint Venture participants first commence construction of the Proposal until the date on which the Gorgon Joint Venture participants issue a notice of acceptance of work under the EPCM, or equivalent contract entered into in respect of the second LNG train of the Gas Treatment Plant.

DAF – Western Australian Department of Agriculture and Food

DEC – Western Australian Department of Environment and Conservation

Deep wells (in the context of liquid waste disposal) – refer to injection wells completed in the Barrow Group (a well defined geological formation approximately 1,000 – 1,800m below the surface).

DEWHA – Commonwealth Department of Environment, Water, Heritage and the Arts.

Disposal of carbon dioxide (CO2) underground – an activity conducted pursuant to Part 4 section 13 and Clauses 7, 8 and 9 of Schedule 1 of the *Barrow Island Act 2003*.

DMP – Western Australian Department of Mines and Petroleum.

DoF - Western Australian Department of Fisheries.

DoT – Western Australian Department of Transport.

DoW – Western Australian Department of Water

Dominant coral species – species with the highest relative percentage cover. Percentage cover is expressed as the proportion of total coral cover.

DRF – Declared Rare Flora has the meaning given by the *Wildlife Conservation Act 1950* (WA)

Dredge Management Areas – The Zone of High Impact, the Zone of Moderate Impact and areas in the Zone of Influence including those that contain significant benthic communities including Coral Assemblages.

DRF - Declared Rare Flora has the meaning given by the *Wildlife Conservation Act 1950*

DSD – Department of State Development.

Ecological Community – refers to all the interacting organisms living together in a specific habitat.

EIS/ERMP - the Environmental Impact Statement/Environmental Review and Management Programme for the Proposed Gorgon Development dated September 2005 as amended or supplemented from time to time.

Endemic – Unique to an area; found nowhere else.

Environmental Harm - has the meaning given by Part 3A of the *Environmental Protection Act 1986*

EP Act – *Environmental Protection Act 1986*

EPBC Act – *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

EPCM - Engineering, Procurement and Construction Management

EQC – Environmental Quality Criteria – Numerical values or narrative statements that serve as benchmarks to determine whether a more detailed assessment of environmental quality is required (the criteria are termed environmental quality guidelines), or whether a management response is required (termed environmental quality standards).

EQO – Environmental Quality Objective – A specific management goal for a part of the environment and is either ecologically based by describing the desired level of health of the ecosystem or socially based by describing the environmental quality required to maintain specific human uses.

EV – Environmental Value – Environmental value means as defined in the EP Act–

GIS – Geographic Information System

GJV – Gorgon Joint Venture

Greenhouse gas abatement 'Beyond No Regrets Measures' – are measures that involve additional costs to the Proposal which are unlikely to be recovered.

Greenhouse gas abatement 'No Regrets Measures' – are measures that are cost-neutral and do not add additional cost to the Proposal.

HDD – Horizontal Directional Drilling

Initial Water Quality Criteria – Numerical criteria, based on the link between water quality and coral health, for measurable water quality parameters that, if exceeded, indicate the potential for adverse impacts on coral heath.

Introduced Terrestrial Species - non-indigenous terrestrial species (including weeds).

LNG – Liquefied natural gas

Management Triggers – are quantitative, or where this is demonstrated to be not practicable, qualitative matters above or below whichever relevant additional management measures must be considered.

Marine Disturbance Footprint – the area of the seabed to be disturbed by construction or operations activities associated with the marine facilities listed in Condition 14.3 (excepting that area of the seabed to be disturbed by the generation of turbidity and sedimentation from dredging and spoil disposal).

Marine Pests – Species other than the native species known or those likely to occur in the waters of the Indo-West Pacific region and the Pilbara Offshore (PIO) marine bioregion in Interim Marine and Coastal Regionalisation for Australia: An Ecosystem Based Classification for Marine and Coastal Environments (IMCRA, 1997), of which Barrow Island is a part, that do or may threaten biodiversity in the Pilbara Offshore (PIO) marine bioregion. As a minimum, the National Introduced Pest Information System Database (NIMPIS, Dept Environment and Water Resources, Commonwealth Government), National Priority Pests listed in the document National Priority Pests, Part II, Ranking of Australian Marine Pests (CSIRO Marine Research, 2005) will guide the interpretation of this definition. Additional species may be added on the advice of experts from the WA Department of Fisheries and the Quarantine Expert Panel.

Marine Quarantine Controlled Access Zone – The zone that extends from 500m offshore from the Barrow Island MHHW mark and encapsulates the entire coastline of Barrow Island. The zone also extends 500m from all marine facilities contiguous with Barrow Island.

Marine Quarantine Limited Access Management Zone – The zone that commences at the outer boundary approximately 2.5 km from the Barrow Island shoreline (MHHW Mark) up to the 500 metre mark from the shoreline.

Marine Turtles – Refers to flatback, green and hawksbill turtles nesting on Barrow Island.

Material Environmental Harm – means environmental harm that is neither trivial nor negligible.

Modified Water Quality Criteria – Revised or amended Initial Water Quality Criteria that better represent the link between water quality and coral health.

MTEP – Marine Turtle Expert Panel

Nominal – representative value of a measurable property determined under a set of conditions, by which a product may be described. The actual value will be close to, but may not be exactly the same, as this representative value once real world factors have been taken into account in accordance with standard engineering practice.

Non-indigenous terrestrial species - Any species of plant, animal or micro-organism not native to Barrow Island. (Native - species that are native to (naturally occurring in) a region. (Reference: State of the Environment Advisory Council (1996). Australia: State of the Environment 1996).

Operations – for the respective LNG trains, this is the period from the date on which the Gorgon Joint Venture participants issue a notice of acceptance of work under the Engineering, Procurement and Construction Management (EPCM) contract, or equivalent contract entered

into in respect of that LNG train of the Gas Treatment Plant; until the date on which the Gorgon Joint Venturers commence decommissioning of that LNG train.

PER – Public Environmental Review for the Gorgon Gas Development Revised and Expanded Proposal dated September 2008 as amended or supplemented from time to time.

Performance Standards – are matters which are developed for assessing performance, not compliance, and are quantitative targets or where that is demonstrated to be not practicable, qualitative targets, against which progress towards achievement of the objectives of conditions can be measured.

Permanent Loss - in relation to Coral Assemblages, means loss that does not recover within 30 years of the completion of dredging and spoil disposal.

Porites – An important genus of long-lived, reef building corals.

QEP – Quarantine Expert Panel

QMS – Quarantine Management System

Reference Sites – specific areas of the environment, that are not at risk of being affected by the proposal or existing developments, that can be used to determine the natural state, including natural variability, of environmental attributes such as coral health or water quality.

Regionally Significant Areas – are the regionally significant areas outside the Zones of High Impact, Moderate Impact and Influence on the eastern margins of the Lowendal Shelf to the southern boundary of the Montebello Islands Marine Park, and Dugong Reef, Batman Reef and Southern Barrow Shoals.

Reservoir Carbon Dioxide - a gas stream that consists overwhelmingly of carbon dioxide and coming from the acid gas removal units of the Gas Treatment Plant to be located on Barrow Island. The carbon dioxide will contain incidental associated substances derived from the natural gas and the process used to separate the carbon dioxide from that natural gas.

Serious Environmental Harm - means environmental harm that –

a. is irreversible, of a high impact or on a wide scale; or
b. is significant or in an area of high conservation value or special significance and is neither trivial nor negligible.

Short-Range Endemics - Taxonomic group of invertebrates that are unique to an area; found nowhere else and have naturally small distributions (i.e. <10,000km^2)

Statistical Power - The probability of detecting a meaningful difference, or effect, if one were to occur.

Sub-dominant coral species – species, excluding Dominant coral species, which have greater than or equal to 5% cover. Percentage cover is expressed as the proportion of total coral cover.

Substantially Commenced - physical construction activities for, and progress of an important or essential element or elements of the Proposal scope.

Terrestrial Disturbance Footprint – the area to be disturbed by construction or operations activities associated with the terrestrial facilities listed in Condition 6.3.

Terrestrial Quarantine Controlled Access Zone – The zone encompassing the following points of entry to Barrow Island:

a. Quarantine Approved Premises (marine offloading facility, warehouse, remedial facility, quarantine washdown bay and first stage laydown);
b. Airport; and
c. WAPET Landing

Terrestrial Quarantine Limited Access Management Zone – The Zone encompassing areas of the Terrestrial Disturbance Footprint which are used for intensive, long-term development activities on Barrow Island:

a. Gas Treatment Plant
b. Construction Village and Barrow Island Oil Joint Venture Camp
c. Administration and Operations Complex
d. Onshore Feed Gas Pipeline System and Carbon Dioxide Injection System corridors

WAPET Landing. - Proper name referring to the site of the barge landing existing on the east coast of Barrow Island prior to the date of this Statement.

Waters Surrounding Barrow Island - refers to the waters of the Barrow Island Marine Park and Barrow Island Marine Management Area (approximately 4,169 ha and 114,693 ha respectively) as well as the port of Barrow Island representing the Pilbara Offshore Marine Bioregion which is dominated by tropical species that are biologically connected to more northern areas by the Leeuwin Current and the Indonesian Throughflow resulting in a diverse marine biota is typical of the Indo-West Pacific flora and fauna.

Schedule 3 – Details of Annual Environmental Performance Reporting

The annual Environmental Performance Report referred to in Condition 5.1 shall report on the following environmental aspects of the Proposal, relevant management and associated studies:

1. Terrestrial and subterranean environment state

i. Results of monitoring and any measurable impacts from Proposal including any changes from the baseline;

ii. Conclusions as to the Project stressors (if any) causing the impacts identified;

iii. Any mitigation measures applied and results of that mitigation; and

iv. Any changes to monitoring sites.

2. Terrestrial and marine quarantine (including weed management)

i. Results of the audits and monitoring programs;

ii. Detected introduction(s) of non-indigenous terrestrial flora or fauna and marine pest species, including procedure breaches and 'near misses' including special reference to weeds;

iii. Consequences of the introduction;

iv. Modification, if any, to the QMS because of:

  a. Audits and monitoring

  b. detected introductions;

  c. 'best practice' improvements

v. Eradication actions if any taken; reasons for any action or non-action; changes to improve procedures and outcomes and progress;

vi. Mitigation actions;

vii. Results of any QMS related studies, where conducted, to improve performance; and

viii. Weed management incidents;

  a. New infestations

  b. Proliferations

ix. Weed eradication performance; and

  a. Areas treated

  b. Results against measurable indicators and limits

x. Targets proposed for the next year.

3. Marine turtles (including light and noise management)

i. Results of all marine turtle monitoring carried out by the Proponent including any detected changes to the flatback turtle population;

ii. Reportable Incidents involving harm to marine turtles;

iii. Changes to the marine turtle monitoring program;

iv. Conclusions about the status of flatback and other marine turtle populations on Barrow Island;

v. Changes (if any) to the Long-Term Marine Turtle Management Plan required as part of Condition 16.1;

vi. Findings of the annual audit and review required by Condition 16.5 on the effectiveness of lighting design features, management measures and operating controls including details of light management initiatives and activities undertaken during the year;

vii. Results of studies undertaken, including as a requirement of Condition 16.4.v; and

viii. Noise monitoring results and a discussion on the success (or otherwise) in meeting noise emission targets.

4. Short range endemics and subterranean fauna

i. Results of survey and studies to locate outside of the Gas Treatment Plant footprint those remaining short range endemics and subterranean fauna species previously found only within the Gas Treatment Plant footprint (as required in Condition 11.1).

5. Fire management

i. incidence of fires caused by the Proposal, and fires that impact on the Proponent's facilities including details of cause, lesson learned and recommended actions;

ii. Material or Serious Environmental Harm caused by fire directly attributable to the Proposal ; and

iii. Changes to management plan including:

   a. management responses to address Material or Serious Environmental Harm caused by fire directly attributable to the Proposal; and

   b. improvement to fire management practices.

6. Carbon Dioxide Injection System

i. Volume of reservoir carbon dioxide and other acid gases removed from the incoming natural gas stream and available for injection;

ii. Volume of reservoir carbon dioxide and other gases injected;

iii. Results of environmental monitoring and identified Material or Serious Environmental Harm, if any, resulting from the seepage of injected carbon dioxide to the surface or near surface environments including those which may support subterranean fauna (including the Blind Gudgeon (*Milyeringa verita*);

iv. Reasons for shortfall between the volume of reservoir carbon dioxide extracted and injected;

v. In the event the amount of carbon dioxide injected falls significantly below the target levels set in Condition 26.2 the Proponent shall report on:

   a. measures that could be implemented that would ensure that target level set in Condition 26.2 is met or, if injection is not considered feasible for all or some of the gas, measures to otherwise offset

   b. which if any of these measures the Proponent intends to implement; and

vi. In the event that monitoring shows there is an elevated risk of Material or Serious Environmental Harm and/or risk to human health associated with the injection of reservoir carbon dioxide, the Proponent shall report to the Minister on the efficacy of continuing to geo-sequester and alternative offsets considered instead of continuing injection of reservoir carbon dioxide.

7. Air quality

i. Air quality monitoring results, with a discussion on the success (or otherwise) in meeting emissions targets.

8. Coastal stability

i. Results of beach and sediment monitoring; and

ii. Any mitigation measures applied in response to Proposal related impacts of beach profile.

9. Terrestrial rehabilitation

i. A description of rehabilitation activities undertaken;

ii. Results of the rehabilitation monitoring program including performance against completion criteria targets;

iii. Results of any studies to address knowledge gaps as referenced in Condition 32.5.x and proposals for further studies (if any); and

iv. Recommended changes to the Management Plan (if any).

10. Greenhouse Gas Abatement

i. Data on greenhouse gas emission intensity (defined as greenhouse gas emissions per tonne of LNG produced) averaged over one year and describe the methodology used;

ii. Trend of annually averaged greenhouse gas emission intensity and explain the reasons for any change;

iii. Recent advances in technology and/or operational processes for LNG processing facilities;

iv. Justification for the adoption or otherwise of the recent advances referred to in Schedule 3, Item 10iii; and

v. The actual energy efficiency of gas turbines in the Gas Treatment Plant.

Schedule 4 – Details of the Quarantine Management System

The Quarantine Management System required by Condition 10.1 shall include the following elements:

1. Risk Assessment, Supply Chain Management and Vessel Management and Inspection:

i. A qualitative risk assessment of all Proposal-attributable introduction pathways for entry of terrestrial non-indigenous species to Barrow Island and entry of marine pests to the Waters Surrounding Barrow Island;

ii. Procedures and barriers to be applied at each potential introduction pathway that is directly attributable to the Proposal to ensure that the risk of introducing species is consistent with the objectives of the QMS;

iii. Procedures and specification for the preparation, packing and shipment of all material destined for Barrow Island related to this Proposal;

iv. Procedures and checklists for the inspection of all material destined for Barrow Island related to this Proposal;

v. Procedures for ensuring that any item related to this Proposal which is not approved by an authorised inspector approved according to the procedures specified in the QMS is denied entry to Barrow Island unless remedial cleaning in the Quarantine Approved Premises have made such item/s quarantine compliant;

vi. An accreditation program that all Proposal related quarantine inspectors must complete before engaging in quarantine management activities related to this Proposal, in consultation with DEC, DAF and DoF (and AQIS in the event of Direct Shipments to the Quarantine Approved Premises on BI from overseas ports; and

vii. Procedures for when DEC officers require access to Proposal site.

2. Detection, Control, Eradication and Mitigation Program:

i. Identify and define the baseline location and extent of known, past and present, non-indigenous terrestrial species (including weeds) in the Terrestrial Quarantine Controlled Access Zone and the Terrestrial Quarantine Limited Access Management Zone;

ii. A detection program with the ability to detect at a statistical power of 0.8 or greater, or an alternative statistical power as determined by the Minister on advice of the QEP, detect the presence of non-indigenous species introduced to Barrow Island or proliferated within the terrestrial construction sites and marine pests in the waters surrounding the Proponent's marine facilities (as listed in Condition 14.3);

iii. NIS (including weeds) Management Procedure**(s)** which sets the management protocol for the development and implementation of specific actions that mitigate the risk of NIS (including weeds) detected from establishing on Barrow Island;

iv. Species Action Plans for all (unless otherwise determined by the Minister) detected terrestrial non-indigenous species on Barrow Island and marine pests in the waters surrounding Barrow Island that controls and, unless otherwise

determined by the Minister, eradicates any introduced or proliferated non-indigenous species on the advice of the QEP. These Species Action Plans to include:

a. Contingency measures that can be immediately implemented to control and eradicate detected terrestrial non-indigenous species on Barrow Island and marine pests in the waters surrounding Barrow Island; and

b. Management measures that can be implemented to mitigate impact caused by detected terrestrial non-indigenous species on Barrow Island and marine pests in the waters surrounding Barrow Island, and mitigate impact caused in the management of detected terrestrial non-indigenous species on Barrow Island and marine pests in the waters surrounding Barrow Island.

v. Emergency Response and Eradication Protocols to eliminate any Non-indigenous Species as determined by the Minister.

3. Reporting and Recording:

i. Procedures that will be used to maintain electronic records, including a geographic information system (GIS), of breaches of Proposal QMS procedures; quarantine incidents which resulted in the introduction of terrestrial non-indigenous species to Barrow Island and marine pests to waters surrounding Barrow Island; and corrective actions taken to rectify those breaches, close out incidents, and address introductions that are verifiably attributable to the Proposal;

ii. Procedures to make information covered in Schedule 4 3.i accessible to DEC;

iii. Provision for reporting detected terrestrial non-indigenous species on Barrow Island and marine pests in the waters surrounding the Proponent's marine infrastructure on Barrow Island to DEC; and

iv. Provisions for ensuring that any information regarding quarantine management is available and provided to the DEC in a timely manner.

4. Reviewing, audits and further studies:

i. Protocols for regular audits of the Proponent's quarantine management measures in place under the QMS to determine their effectiveness and to determine if any corrective actions are required;

ii. The regular audits shall be conducted at six monthly intervals during the construction phase and at least biennially upon commissioning;

iii. The Proponent shall prepare and submit a report to DEC and the Conservation Commission detailing the results and outcomes of the audits referred to in 4i. and 4ii.; and

iv. The Proponent will undertake quarantine studies from time to time on advice of the QEP when audits and performance monitoring indicate the need to do so.

Schedule 5 – Coordinates that define the Zones of High Impact, Zones of Moderate Impact and Zones of Influence (Table 1)

Reference "Gorgon Gas Development - Zones of High Impact Zones of Moderate Impact and Zones of Influence" Document Number: G1-NT-REPX0002292 Revision 0, dated 7 August 2009.