



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

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| Purpose Permit number: | CPS 123/6 |
| Permit Holder: | Chevron Australia Pty Ltd |
| Duration of Permit: | 12 June 2006 – 12 June 2016 |

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The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of *infrastructure maintenance, pipelines, minor works and emergencies*.

2. Land on which clearing is to be done

Barrow Island Crown Reserve 11648
 Petroleum Production Licence L10 (R1)
 Petroleum Exploration Permit EP 62(7)
 Pipeline Licence TPL/9 (R1)

3. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

4. Clearing for Infrastructure Maintenance Authorised

In accordance with this Permit, the Permit Holder may clear previously disturbed vegetation without complying with Part II for the purposes of:

- (a) maintaining and operating existing production, waterflood and water source wells, cathodic cabinets and cables, roadside bollards, main camp infrastructure, sewer lines, airport perimeter beacons, airport perimeter fence lines and other similar infrastructure, other than *pipelines*¹;
- (b) providing safety buffers around the infrastructure referred to in 4(a);
- (c) replacing and upgrading infrastructure referred to in 4(a) in the same location;
- (d) maintaining and grading existing graded roads;
- (e) operating and carrying out works within *hardstand areas*;
- (f) driving on *access tracks*;
- (g) accessing power poles for repair and maintenance provided that the distance traversed from a graded road or *access track* to the power pole is less than 50 metres in total in one direction;
- (h) *active rehabilitation* carried out in accordance with condition 16;
- (i) assessing, monitoring and removal of dead vegetation at leak sites to allow for *regeneration*;
- (j) clearing areas for maintenance of conduits passing under road crossovers;
- (k) decommissioning and removal of redundant pipelines and road crossings; and

¹ See Part IV of this Permit.
 CPS 123/6, 16 May 2013

- (l) removing vegetation in areas previously cleared in order to maintain the effectiveness of a *pipeline* to the extent of 5 metres from the *pipeline*.

The clearing described in condition 4 is not subject to the 105 hectare limit on total clearing that otherwise applies to this Permit.

5. Clearing for Marine Activities Authorised

In accordance with this Permit, the Permit Holder may clear vegetation without complying with Part II for the purposes of:

- (a) inspecting, accessing, operating and maintaining existing *Marine Infrastructure*;
- (b) replacing and upgrading existing *Marine Infrastructure* in the same location;
- (c) environmental monitoring; and
- (d) activities associated with decommissioning, demolition and abandonment of infrastructure.

6. Other Clearing Authorised

In accordance with this Permit, the Permit Holder may clear up to 105 hectares of vegetation, whether *previously disturbed* vegetation or not, to the extent reasonably necessary (including necessary safety buffers) for the purposes of:

- (a) installing road side bollards;
- (b) exploring and taking material at borrow pits;
- (c) reducing fire risk around oilfield facilities;
- (d) installation and modification of infrastructure at the central processing facility for the *produced water reinjection project*;
- (e) accessing any infrastructure;
- (f) bore construction for carrying out environmental investigations and groundwater monitoring relating to environmental investigation activities and *remediation* and *rehabilitation* works;
- (g) environmental monitoring including biodiversity monitoring and soil and groundwater sampling associated with contamination assessment, *remediation* and *rehabilitation*;
- (h) *remediation*, including excavation of contaminated soil and installation of remedial devices;
- (i) *active rehabilitation* carried out in accordance with condition 16;
- (j) clearing from the base of overhead powerlines;
- (k) installing, constructing, replacing, maintaining and operating airport perimeter beacons, water source wells and other similar minor works necessary for the maintenance, operation or upgrade of existing infrastructure other than *pipelines*; and
- (l) activities associated with decommissioning, demolition and abandonment of infrastructure.

7. Emergencies

The Permit Holder may clear vegetation:

- (a) for the purpose of preventing danger to human life or health or irreversible damage to a significant portion of the environment;
- (b) to prevent or reduce imminent damage to infrastructure in response to the impact of a destructive natural event such as a storm, lightning strike, fire or flood;
- (c) where reasonably necessary to immediately respond to an accident such as a leak, fire or medical emergency or to repair damage caused by vandalism

and may carry out this clearing without complying with Part II and such clearing shall not be subject to the 105 hectare limit on total clearing that otherwise applies to this Permit.

8. General Restrictions on Clearing

The Permit Holder:

- (a) shall only clear for vehicle turnarounds where the extent of vegetation disturbance will be less by turning around and traversing back to the closet access road than proceeding forward to the closet access road;
- (b) shall not clear for temporary laydown areas;
- (c) shall not stockpile cleared vegetation on any other native vegetation;
- (d) is not authorised by this Permit to clear for any purposes related to the Gorgon Gas Development on Barrow Island and offshore North West Shelf (Shire of Ashburton) proposal, which was referred to the Environmental Protection Authority by ChevronTexaco Australia Pty Ltd on behalf of the Gorgon Joint Venture.

PART II: VEGETATION DISTURBANCE ASSESSMENT PROCEDURE

9. Assessment Procedure

The Permit Holder shall undertake the assessment procedure detailed in Part II for all clearing activities authorised under conditions 6 and 8, in order to minimise the amount and impacts of clearing within the permitted area.

10. Preparation of Permit to Work Certificate

- (a) Prior to carrying out any clearing, or any activity likely to involve clearing, a Permit to Work Certificate for Off Road Driving/Vegetation Disturbance ("*Permit to Work Certificate*") shall be prepared describing the proposed activity, the *location* of the proposed activity, and the kind of clearing that is likely to occur.
- (b) The *Permit to Work Certificate* shall be considered by an officer of the Permit Holder responsible for coordinating works and if it is reasonably likely that the proposed activity will involve or result in clearing of vegetation, the *Permit to Work Certificate*, together with information recorded on a global positioning system device relating to the *location* and extent of the proposed activity or clearing, shall be submitted to the *Environmental Specialist* or *Environmental Technician*.

11. Inspection and Survey by *Environmental Specialist* or *Environmental Technician*

- (a) Prior to the activity or clearing being undertaken an *Environmental Specialist* or *Environmental Technician* shall:
 - (i) refer to the *environmental sensitivity mapping database* and determine whether the area to be cleared is classified as P1, P2, P3 or P4 in **Annexure 2**; and
 - (ii) walk, inspect and survey locations (except those walked by a *qualified botanist*) classified as P1, P2 and P3 at which any proposed activity or clearing is to be undertaken or in respect of which a *Permit to Work Certificate* has been submitted.
- (b) document the inspection and survey including:
 - (i) the proposed activity and method of clearing;
 - (ii) the *location* and extent of the proposed activity and clearing on a global positioning system device;
 - (ii) whether the area is classified as P1, P2, P3 or P4 on the *environmental sensitivity mapping database*;

- (iii) the vegetation and fauna habitat present at the *location* of the proposed activity or clearing; and
 - (iv) observations about preferred routes or locations for the proposed clearing, taking into account information from the inspection and information on the *environmental sensitivity mapping database*.
- (c) record the data collected by the field inspection and survey required under this condition into the Permit Holder's *electronic geographic information system* incorporating the *environmental sensitivity mapping database*.

12. Assessment Process

The *Environmental Specialist* or *Environmental Technician* shall undertake an assessment of the proposed activity or clearing in each case taking into account:

- (a) the survey and inspection report and any *qualified botanist's* report that relates to the area to be cleared;
- (b) the information on the *environmental sensitivity mapping database*, including the proportion of each vegetation type set out in **Annexure 1** that remains prior to and after the proposed clearing, expressed as a percentage of the areal extent of these vegetation types as identified in Matiske (1993);
- (c) the nature and extent of the proposed activity or clearing;
- (d) the environmental implications of the proposed activity or clearing for vegetation and fauna habitat, taking into account the guidelines set out in condition 10 below;
- (e) any other relevant information; and

shall determine whether the vegetation or areas to be affected by the proposed activity or clearing is classified P1, P2, P3 or P4 as described in **Annexure 2**.

13. Guidelines for Assessment

The *Environmental Specialist* and *Environmental Technician* must follow the guidelines set out in this condition when assessing a *Permit to Work Certificate*:

- (a) Clearing of vegetation should occur in vegetation or areas classified as P4 in Annexure 2 in preference to P3, in P3 in preference to P2, and P2 in preference to P1.
- (b) A *Permit to Work Certificate* must not be issued if there is a reasonable alternative means to carry out the proposed activity or works that does not involve clearing vegetation.
- (c) Subject to condition 10(a) above, a *Permit to Work Certificate* must include conditions that minimise the overall extent of clearing.
- (d) In the event that the vegetation or area that is proposed to be cleared is classified as P1 in **Annexure 2**, any *Permit to Work Certificate* shall not be issued unless the clearing is absolutely necessary and no other practicable alternative to clearing the vegetation or area exists.
- (e) A decision to issue a *Permit to Work Certificate* shall be made, and any conditions on a *Permit to Work Certificate* shall be imposed, having regard to the following:
 - (i) clearing and activities in the area shall be restricted wherever possible to existing tracks and or *previously disturbed* areas;
 - (ii) disturbance to topsoil or rootstock shall be avoided wherever possible;
 - (iii) blading outside areas required to be *hardstand areas* shall be avoided wherever possible;
 - (iv) no slashing of *known priority flora*, *significant vegetation communities* (**Annexure 3**), *additional significant vegetation communities* (**Annexure 4**), or *flora of conservation significance* (**Annexure 5**) shall be undertaken, unless there is no other practicable alternative; and

- (v) where off road vehicle access is approved, significant occurrences of trees, shrubs or habitat must be avoided and the number of vehicle movements along the off road alignments must be restricted to the absolute minimum necessary for the approved purpose.

14. Assessment Report

The *Environmental Specialist* or *Environmental Technician* shall document the assessment undertaken in making the decision to grant or refuse a *Permit to Work Certificate*, including:

- (a) whether or not any vegetation or areas classified as P1, P2, P3 or P4 in **Annexure 2** is likely to be affected by the proposed activity or clearing;
- (b) whether or not any *identified priority flora*, *significant vegetation communities* (**Annexure 3**), *flora of significant conservation value* (**Annexure 5**) or *vegetation comprising significant or unique fauna habitat* is likely to be affected by the proposed activity or clearing;
- (c) the areal extent that the clearing of each vegetation type set out in **Annexure 1** would represent, expressed as a percentage of the areal extent of each vegetation type as identified in Mattiske (1993);
- (d) the areal extent that the vegetation remaining after the clearing would represent, in relation to each vegetation type set out in **Annexure 1**, expressed as a percentage of the areal extent of each vegetation type as identified in Mattiske (1993); and
- (e) information demonstrating consideration of the guidelines set out in condition 14 above.

15. Issuing Permit to Work Certificates²

- (a) A copy of the *Permit to Work Certificate* with any vegetation disturbance management conditions will be issued to the person carrying out the activity or clearing prior to the commencement of the activity or clearing.
- (b) The *Permit to Work Certificate* shall specify:
 - (i) the method of clearing approved;
 - (ii) the purpose for which the activity or clearing may be carried out;
 - (iii) the extent of the clearing approved;
 - (iv) the *location* of the approved activity or clearing; and
 - (v) other relevant conditions or restrictions regarding the carrying out of the proposed activity or clearing.
- (c) The Permit Holder shall comply with the conditions of the *Permit to Work Certificate* and any directions given by the *Environmental Specialist* or *Environmental Technician*.

PART III: ACTIVE REHABILITATION

16. Active Rehabilitation

- (a) Prior to carrying out clearing of vegetation for the purpose of *active rehabilitation*, the Permit Holder shall develop a rehabilitation plan which must include:
 - (i) *site preparation*;
 - (ii) *weed control*;
 - (iii) *regeneration, direct seeding or planting*;
 - (iv) a *vegetation establishment period*;
 - (v) ongoing maintenance and monitoring; and
 - (vi) timeframes for key stages.

² Note: A Permit to Work Certificate issued by an *Environmental Specialist* or *Environmental Technician* does not give any authorisation not given by this Permit or allow clearing that is otherwise restricted or prohibited by this Permit.

- (b) Prior to carrying out clearing of vegetation for the purpose of *active rehabilitation*, the Permit Holder must provide the rehabilitation plan to the CEO for the CEO's comment.
- (c) Prior to carrying out clearing of vegetation for the purpose of *active rehabilitation*, the Permit Holder must provide the approved rehabilitation plan to the CEO.
- (d) Subject to compliance with this Permit, the Permit Holder must implement and adhere to the approved rehabilitation plan.

PART IV: SPECIAL RESTRICTIONS AND CONDITIONS ON CLEARING FOR PIPELINES

17. Clearing for Pipelines Authorised

Subject to complying with Part I and Part II of this permit, the Permit Holder may clear for the installation, replacement, maintenance and decommissioning of *pipelines* in accordance with this Part IV of this Permit.

18. Special Restrictions and Conditions on Clearing for Pipelines

- (a) The Permit Holder shall not clear more than 20 metres in width for multiple parallel *pipelines*, except in areas within 20 metres of manifolds where *pipelines* converge;
- (b) The Permit Holder shall not remove root stock when clearing vegetation for *pipelines*, except where creating pipeline road crossings and installing pipe supports;
- (c) The Permit Holder shall not clear vegetation by driving vehicles over *known significant vegetation communities (Annexure 3)*, *additional significant vegetation communities (Annexure 4)*, or *flora of conservation significance (Annexure 5)* when installing, replacing or decommissioning *GRE pipelines*, except where such *GRE pipelines* are of 80 millimetres or more in diameter;
- (d) Where *GRE pipelines* are to be installed over a distance of less than 100 metres between two existing access tracks, the *GRE pipeline* shall be installed without using vehicles to drive along the route that that section of the pipeline will traverse, unless the pipes to be installed are 80 millimetres or more in diameter;
- (e) The Permit Holder shall not dispose of residual pipe contents on vegetation;
- (f) Prior to the installation of any *pipeline*, with the exception of electrical cables laid by hand, in an area that has not been previously cleared, a *qualified botanist* shall, having regard to the guidelines set out in condition 13 of this Permit:
 - (i) walk the proposed route for the new *pipeline*;
 - (ii) make and document recommendations for:
 - (A) preferred clearing methodology;
 - (B) preferred locations and route for any clearing;
 - (C) conditions or restrictions that should be imposed on the work or activity; and
 - (iii) record the location of the route on a global positioning system device.

PART V: RECORD KEEPING, REPORTING AND AUDITING

19. Electronic Geographic Information System and Environmental Sensitivity Mapping Database

- (a) The Permit Holder shall maintain an *electronic geographic information system* incorporating an *environmental sensitivity mapping database* of Barrow Island that stores and allows search and recovery of spatial environmental information in data layers which will include a visual representation overlaid on an electronic map of:

- (i) vegetation distribution (areal extent) of each vegetation type as set out in **Annexure 1**;
 - (ii) *previously disturbed* areas;
 - (iii) areas cleared that, at the date of issue of this Permit are not *previously disturbed*, and the method by which they were cleared;
 - (iv) landform, geomorphology (including caves) and topography;
 - (v) all recorded sites of *significant or unique fauna habitat*;
 - (vi) all recorded sites of *rare flora* and *priority flora*;
 - (vii) all recorded sites of *significant vegetation communities* (**Annexure 3**);
 - (viii) all recorded sites of additional *significant vegetation communities* (**Annexure 4**); and
 - (ix) all vegetation types containing *recorded flora of conservation significance* (**Annexure 5**).
- (b) The Permit Holder shall update the *electronic geographic information system* incorporating the environmental sensitivity database annually with the following information:
- (i) information contained in reports given by *qualified botanists* during the term of this Permit that identifies new locations of vegetation and any other features referred to in condition 19(a) above; and
 - (ii) all locations of vegetation communities identified in a *qualified botanist's* report provided during the term of this Permit which are identified in that report as suffering low *regeneration* rates after site disturbance.
- (c) The resulting disturbance approved under that *Permit to Work Certificate* shall be recorded and entered into the *electronic geographic information system* incorporating the *environmental sensitivity mapping database* and this shall include:
- (i) the method of clearing;
 - (ii) the area cleared in square metres (e.g. for vehicle tracks, length by width of the vehicle's tracks, and for *pipelines*, the length by width of the actual pipe plus other related clearing) by each clearing method and for each purpose;
 - (iii) the *location*, extent and method of clearing any *identified* vegetation of the vegetation types listed in **Annexure 3**, **Annexure 4**, or **Annexure 5**; and
 - (iv) the *location*, extent and method of clearing any *identified* vegetation or areas of the vegetation types or areas set out in **Annexure 2**.

20. Reporting

The Permit Holder shall provide to the CEO, by 30 September of each year, a report including:

- (a) for all clearing, other than clearing under condition 4 where the vegetation has been *previously disturbed*, a record of the extent, location and method of clearing carried out under this Permit;
- (b) for clearing under condition 6, an additional summary of the extent, location and method of this clearing by reference to vegetation or area types referred to in **Annexure 2**, **Annexure 3**, **Annexure 4** or **Annexure 5** and the reasons why such clearing was required;
- (c) in relation to clearing for *pipelines*,
 - (i) the type of *pipelines* involved;
 - (ii) the *location*, extent and method of clearing in each case;
 - (iii) the *location*, extent and method of clearing of any *identified* vegetation or areas of the vegetation types or areas described in **Annexure 2**, **Annexure 3**, **Annexure 4** or **Annexure 5** that were cleared;
 - (iv) the reasons why such clearing was required; and

- (d) the *location*, extent and method of any clearing carried out in accordance with condition 7;
- (e) the *location* and extent of any clearing carried out in accordance with condition 5; and
- (f) the areal extent of each vegetation type set out in **Annexure 1**, that has been:
 - (i) cleared in that year; and
 - (ii) that is remaining on Barrow Island;
 expressed as a percentage of the areal extent of those same vegetation types as identified in *Mattiske (1993)*;
- (g) a list of all reports provided by qualified botanists as required by this Permit in relation to Barrow Island;
- (h) the location, extent and method of any *active rehabilitation* carried out in relation to Barrow Island;
- (i) audit reports required under condition 22 below; and
- (j) a copy of the *environmental sensitivity mapping database* in an electronic form.

21. Permit holder to retain records

The Permit Holders shall retain a separate record of all documentation produced in relation to each *Permit to Work Certificate* including:

- (a) the *Permit to Work Certificate* and all supporting material;
- (b) a record of the relevant information obtained from the Environmental Sensitivity Database;
- (c) any reports from a *qualified botanist*;
- (d) documentation produced by the *Environmental Specialist* or *Environmental Technician* relating to the inspection, survey and assessment;
- (e) any *Permit to Work Certificate* issued; and
- (f) a written record that the *Permit to Work Certificate* was issued to the person undertaking the work.

22. Auditing

The Permit Holder shall conduct an audit of one new *Permit to Work Certificate* that has been issued in each two month period after the commencement of this Permit to determine whether the clearing carried out under the *Permit to Work Certificate* was in accordance with the *Permit to Work Certificate* and this Permit. The Permit Holder shall create a report detailing the findings of such an audit and the nature, extent and reason for any non-compliance and shall include the results of each audit in the annual report described in condition 20 above.

23. Records and reports to be made available to the CEO upon request

The Permit Holder shall, upon receipt of written request from the CEO, make all records and reports required by this Permit, all reports of *qualified botanists* required by the permit provided to the Permit Holder during the term of this Permit and the *electronic geographical information system* incorporating the *environmental sensitivity mapping database* available to the CEO for the purposes of auditing compliance with the conditions of this Permit.

PART VI: INTERPRETATION & DEFINITIONS

24. Interpretation

The following rules of interpretation apply to this Permit:

- (a) a reference to any *written law* includes a reference to that *written law* as amended, repealed or replaced from time to time; and

- (b) if a word or phrase is defined, other parts of speech and grammatical forms of that word or phrase have corresponding meanings.

25. Severance

It is the intent of these conditions that they shall operate so that, if a condition or part of a condition is beyond the CEO's power to impose, or is otherwise ultra vires or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the CEO's power to impose and are not otherwise ultra vires or invalid.

26. Inconsistency

- (a) The *EP Act* prevails to the extent of any inconsistency between its provisions and the conditions of this Permit.
- (b) Subject to condition 26(a), this Permit prevails to the extent of any inconsistency between its conditions (including its Schedules), and the provisions of any other document referred to in this Permit.

Definitions

The following meanings are given to terms used in this Permit:

access track/s means the track/s identified in Annexure 6 on the plan marked *BWI Road and Maintenance Track Network* attached to this Permit;

active rehabilitation means rehabilitation involving earthworks, clearing of vegetation to facilitate *regeneration*, erection of structures to facilitate *regeneration* of vegetation, applying soil conditions, seeding, planting and other similar works;

additional significant vegetation communities means vegetation types and associations on Barrow Island set out in **Annexure 4**;

Barrow Island Port Area means the area described as the Barrow Island Port Area in the Schedule to the proclamation under the *Marine and Harbours Act 1981* section 9 published in the *Government Gazette of Western Australia* of 5 February 1982 at page 410 (as varied by the proclamation under that section published in the *Government Gazette of Western Australia* of 19 February 1982 at page 584).

Barrow Tanker Loading Line means the pipeline authorised by Pipeline Licence TPL/9 granted under section 54 of the *Petroleum (Submerged Lands) Act 1982*.

Block means the blocks identified in Annexure 6 marked *BWI Road and Maintenance Track Network* attached to this Permit;

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

electronic geographic information system means Chevron Australia Pty Ltd's system required to store information, including an *environmental sensitivity mapping database* as outlined in condition 19 of this Permit;

Emergencies mean those activities described in condition 7 of this Permit;

environmental sensitivity mapping database means Chevron Australia Pty Ltd's database to store information gathered as required under this Permit;

Environmental Specialist means a person who is employed by the Permit Holder and who has an environmental qualification, diploma or degree and a capability, through specific training and access to on-site reference materials, to identify flora and fauna habitat of conservation significance on Barrow Island and assess environmental impacts of the Permit Holders activities;

Environmental Technician means a person who is employed by the Permit Holder and who has a capability, through specific training and access to on-site reference materials, to identify flora and fauna habitat of conservation significance on Barrow Island and assess environmental impacts of the Permit Holders activities;

EP Act means the *Environmental Protection Act 1986*;

flora of conservation significance means flora described in **Annexure 5**;

GRE pipeline means a pipe or pipeline constructed of glass reinforced epoxy;

hardstand areas means a graded road, well pad or other operational area that, at the time of granting this Permit, has been cleared of all vegetation (whether or not vegetation has regrown in the area) and which is required to be maintained for the safe operation of oilfield facilities;

identified in relation to vegetation or environmental features means vegetation or environmental features that are required by this Permit to be recorded on the Permit Holder's *electronic geographic information system* incorporating the *environmental sensitivity mapping database*;

infrastructure maintenance means those activities described in condition 4 of this Permit;

known means that which is known, or which should reasonably be known, by the Permit Holder;

local provenance means native vegetation seeds and propagating material from natural sources within 20 kilometres of the area cleared;

location means the location expressed and recorded using Geocentric Datum Australia 1994;

Marine Infrastructure means buoys, markers, licensed water discharge lines and other similar infrastructure and the Barrow Tanker Loading Line.

Mattiske (1993) means the vegetation types described in Flora and Vegetation of Barrow Island E.M. Mattiske & Associates November, 1993 WAP003/58/93;

Minor works means those activities described in conditions 5 and or 6 of this Permit;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

pipeline/s means pipeline/s (excluding the Barrow Tanker Loading Line) for the movement of oil, gas and water necessary for carrying out oilfield operations and operations incidental thereto and includes electrical cabling;

previously disturbed means, in relation to vegetation or an area, known to be previously cleared, driven over or otherwise impacted or interfered with by human activity;

priority flora means those plant taxa described as priority flora classes 1, 2, 3, 4 or 5 in the *Department of Environment and Conservation's Threatened and Priority Flora List for Western Australia* (as amended);

produced water reinjection project means the replacement and upgrade of the produced formation water processing facilities at the Central Processing Facility to provide for filtration of produced formation water and its recycling into the Permit Holder's waterflood system;

Permit to Work Certificate means the Permit Holder's application form for Offroad/Vegetation Disturbance;

qualified botanist means a person with a botanical qualification, diploma or degree and at least 5 years prior employment regularly identifying or surveying Western Australian flora;

rare flora means flora that have been declared to be rare flora under the *Wildlife Conservation Act 1950*;

recorded means identified in *Mattiske (1993)*;

regeneration means *revegetation* that can be established from in situ seed banks contained either within the topsoil or seed-bearing *mulch*;

remediation means action taken to eliminate, limit, correct, counteract, mitigate or remove any contaminant or the negative effects of the contaminant on the environment or human health. With respect to the *Contaminated Sites Act 2003* and a site that is contaminated, remediation includes:

- (a) the attempted restoration of the site to the state it was in before the contamination occurred
- (b) the restriction, or prohibition, of access to, or use of, the site
- (c) the removal, destruction, reduction, containment or dispersal of the substance causing the contamination, or the reduction or mitigation of the effect of the substance
- (d) the protection of human health, the environmental or any environmental value from the contamination.

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to surrounding vegetation types in that area;

significant or unique fauna habitat means a range of habitats and refugia important to the terrestrial fauna of Barrow Island and includes termite mounds, cliffs, gorges and rock piles, boodie warrens, caves and subterranean limestone cavities, dense vegetation, particularly of the higher profile shrubs such as clumps of *Ficus* and *Melaleuca*;

significant vegetation communities means vegetation types and associations on Barrow Island set out in **Annexure 3**.

site preparation means management of existing site topsoil and preparation of the finished soil surface;

vegetation establishment period means a period of at least two summers after the *revegetation* during which time replacement and infill *revegetation* works may be required for areas in which *revegetation* has been unsuccessful, and involves regular inspections of *revegetation* sites to monitor the success of *revegetation*;

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in the Department of Environment and Conservation Regional Weed Assessments, regardless of ranking; or
- (c) not indigenous to the area concerned; and

written law has the same meaning as it is given in section 5 of the *Interpretation Act 1984*.



M Warnock
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

16 May 2013

ANNEXURE 1

Mattiske Vegetation Units (1993)

- C1 Coastal complex dominated by *Spinifex longifolius* on white foredunes; including Coastal Complex of *Ipomoea pes-caprae* ssp. *brasiliensis* and *Spinifex longifolius* on strand line foredunes.
- C2 Open Shrub of *Acacia coriacea* - *Rhagodia preisii* ssp. *obovata* – *Olearia dampieri* ssp. *dampieri* on elevated dunes on fringes of island.
- C3 Hummock Grassland of *Triodia pungens* with dense shrubs, including *Acacia bivenosa* on back slopes of foredunes.
- C4 Mixed Hummock Grassland of *Triodia angusta* – *Triodia pungens* with dense shrubs, including *Acacia bivenosa* on back-slopes of foredunes.
- C5 Low Mixed Shrubland of *Frankenia pauciflora* and *Hedyotis crouchiana* on exposed cliff faces around edge of island.
- C6 Hummock Grassland of *Triodia pungens* with dense pockets of *Melaleuca cardiophylla* on sandy valley systems in south-western corner of island.
- C7 Hummock Grassland of *Triodia pungens* with dense pockets of *Olearia dampieri* ssp. *dampieri* on sandy soils behind foredunes in south-western corner of island.
- D1 Mixed Hummock Grassland of *Triodia angusta* with pockets of dense shrubs along major creek lines.
- D2 Hummock Grassland of *Triodia angusta* along minor creek lines and drainage lines.
- D3 Hummock Grassland of *Triodia angusta* along minor creek lines with emergent *Santalum murrayanum*.
- F1 Hummock Grassland of *Triodia angusta* on red earth flats and drainage lines.
- F2 Hummock Grassland of *Triodia angusta* with emergent *Acacia synchronicia* on red earth flats.
- F3 Hummock Grassland of *Triodia angusta* with emergent shrubs of *Gossypium robinsonii* on red earth flats.
- F4 Hummock Grassland of *Triodia angusta* – *Triodia* spp. with emergent pockets of *Erythrina vespertilio* on flats.
- F5 Mixed Hummock Grassland of *Triodia pungens* – *Triodia angusta* on fringes of main red earth flats and drainage lines.
- F6 Hummock Grassland of *Triodia pungens* on slopes of escarpments on fringes of red earth flats.

- F7 Hummock Grassland of *Triodia pungens* – *Triodia angusta* - *Triodia wiseana* on slopes of escarpments on fringes of red earth flats.
- L1 Hummock Grassland of *Triodia wiseana* with *Ficus platypoda* var. *platypoda* on central limestone ridges.
- L2 Hummock Grassland of *Triodia wiseana* with *Ficus virens* var. *virens* on escarpments on west coast and southern edge of limestone ridges.
- L3 Hummock Grassland of *Triodia wiseana* with low mixed shrubs including *Acacia gregorii* on limestone ridges.
- L4 Hummock Grassland of *Triodia wiseana* with dense emergent shrubs of *Acacia pyrifolia*, *Acacia gregorii* and *Petalostylis labicheoides* on limestone ridges.
- L5 Hummock Grassland of *Triodia wiseana* with emergent *Hakea suberea* on limestone ridges.
- L6 Hummock Grassland of *Triodia wiseana* with emergent *Grevillea pyramidalis* on limestone ridges.
- L7 Hummock Grassland of *Triodia wiseana* with dense pockets of *Melaleuca cardiophylla* on limestone ridges.
- L8 Hummock Grassland of *Triodia wiseana* with pockets of *Eucalyptus patellaris* on limestone ridges.
- L9 Hummock Grassland of *Triodia wiseana* – *Triodia angusta* with emergent *Sarcostemma viminali* ssp. *australe* and *Ficus platypoda* var. *platypoda* on coastal limestone flats and low ridges with localised pockets of *Frankenia pauciflora*.
- L10 Hummock Grassland of *Triodia pungens* – *Triodia angusta* with emergent *Hakea suberea* on exposed small limestone hills on southern coastal area.
- M1 Aquatic complex supporting stands of *Avicennia marina* and *Ruppia maritima* on the fringes of the island.
- S1 Mixed Herbfield and Grassland of *Eragrostis xerophila*, *Eriachne flaccida* and *Sporobolus virginicus* on clay pans.
- S2 Mixed Herbfields with *Streptoglossa bubakii* and *Pterocaulon sphacelatum* on fringes of tidal Halophytic areas and flood channels on clay soils near coast.
- T1 Halophytic Complex dominated by *Halosarcia halocnemoides* and *Halosarcia indica* on tidal flats.
- T2 Mixed Chenopod and Halophytic Complex with low *Frankenia pauciflora* shrubs on high tide areas usually associated with stands of *Avicennia marina*.
- V1 Hummock Grassland of *Triodia wiseana* with mixed emergent shrub species on valley slopes.
- V2 Hummock Grassland of *Triodia wiseana* with *Pentapeltis trichodesmoides* on southern escarpment.

ANNEXURE 2

Environmental Criteria for GIS Modelling of Priority Areas for Barrow Island

| Criterion | P1 | P2 | P3 | P4 |
|--|---|--|--|---|
| Vegetation Distribution, regenerative abilities and landform stability | Vegetation described in Annexures 3, 4 and 5 of this Permit, containing floristic components of particular vulnerability and/or with high sensitivity to disturbance (eg coastal dunes) | Vegetation described in Annexures 3, 4 and 5 of this Permit with lower sensitivity to disturbance, or where important floristic components are highly visible, widely distributed vegetation types containing components with particular importance to fauna and/or low ability to regenerate (eg Melaleuca) | Widely distributed vegetation not being vegetation described in Annexures 3, 4 and 5 of this Permit. | Very widely distributed vegetation or widely distributed vegetation and with high regeneration capacity, not being vegetation described in Annexures 3, 4 and 5 of this Permit. |
| Fauna Habitat and fauna susceptibility to impacts | Area immediately surrounding important habitat to protected fauna sensitive to disturbance, including Bettong warren polygon +100m Bettong warren point +150m Brahminy kite nest +50m Sea-eagle/Osprey nests + 70m Stygofauna in caves/sinkholes +100m | | | |
| Heritage Sites | Areas immediately surrounding important heritage sites: Anthropological sites +100m Fossil sites +100m | | | |

| | | | | |
|--|--|--|--|--|
| Landform Susceptibility to impacts | Areas at elevated risk from indirect impacts (leaks/spills); Caves, fissures soak wells +100m | | | |
|--|--|--|--|--|

ANNEXURE 3

Significant vegetation communities on Barrow Island

- C4 Mixed Hummock Grassland of *Triodia angusta* – *Triodia pungens* with dense shrubs, including *Acacia bivenosa* on back-slopes of foredunes.
- C5 Low Mixed Shrubland of *Frankenia pauciflora* and *Hedyotis crouchiana* on exposed cliff faces around edge of island.
- C6 Hummock Grassland of *Triodia pungens* with dense pockets of *Melaleuca cardiophylla* on sandy valley systems in south-western corner of island.
- C7 Hummock Grassland of *Triodia pungens* with dense pockets of *Olearia dampieri* ssp. *dampieri* on sandy soils behind foredunes in south-western corner of island.
- D1 Mixed Hummock Grassland of *Triodia angusta* with pockets of dense shrubs along major creek lines.
- D3 Hummock Grassland of *Triodia angusta* along minor creek lines with emergent *Santalum murrayanum*.
- F2 Hummock Grassland of *Triodia angusta* with emergent *Acacia synchronicia* on red earth flats.
- F3 Hummock Grassland of *Triodia angusta* with emergent shrubs of *Gossypium robinsonii* on red earth flats.
- F4 Hummock Grassland of *Triodia angusta* – *Triodia* spp. with emergent pockets of *Erythrina vespertilio* on flats.
- F6 Hummock Grassland of *Triodia pungens* on slopes of escarpments on fringes of red earth flats.
- L2 Hummock Grassland of *Triodia wiseana* with *Ficus virens* var. *virens* on escarpments on west coast and southern edge of limestone ridges.
- L5 Hummock Grassland of *Triodia wiseana* with emergent *Hakea suberea* on limestone ridges.
- L6 Hummock Grassland of *Triodia wiseana* with emergent *Grevillea pyramidalis* on limestone ridges.
- L8 Hummock Grassland of *Triodia wiseana* with pockets of *Eucalyptus patellaris* on limestone ridges.
- L10 Hummock Grassland of *Triodia pungens* – *Triodia angusta* with emergent *Hakea suberea* on exposed small limestone hills on southern coastal area.
- M1 Aquatic complex supporting stands of *Avicennia marina* and *Ruppia maritima* on the fringes of the island.

- S2 Mixed Herbfields with *Streptoglossa bubakii* and *Pterocaulon sphacelatum* on fringes of tidal Halophytic areas and flood channels on clay soils near coast.
- T1 Halophytic Complex dominated by *Halosarcia halocnemoides* and *Halosarcia indica* on tidal flats.
- T2 Mixed Chenopod and Halophytic Complex with low *Frankenia pauciflora* shrubs on high tide areas usually associated with stands of *Avicennia marina*.
- V2 Hummock Grassland of *Triodia wiseana* with *Pentapeltis trichodesmoides* on southern escarpment.

ANNEXURE 4

Additional significant vegetation communities on Barrow Island

Vegetation descriptions follow Mattiske 1993 and more recently described by Long 2001, 2002

- L7b Open Low Shrubland (2-10%; 0.5-1m) of *Melaleuca cardiophylla* over Dwarf Shrubland (10-30%; -0.5m) of *Acacia gregorii* and *Scaevola cunninghamii* over Hummock Grassland (30-70%) of *Triodia wiseana*.
- L11 Dwarf to semi-prostrate *Acacia bivenosa* (glabrous or pruinose) Shrubland (10-30%) to Heath (30-40%; 0-0.5m) over Closed Hummock Grassland (70-100%) of *Triodia wiseana* with scattered <2% *Petalostylis labicheoides*/*Stylobasium spathulatum*. Occurs on limestone valley or hill slopes.

A small community (not mapped individually) of *Scaevola aff. spinescens* with *Capparis spinosa* located near "B" Block, GPS 50K 0331748 7694946.

ANNEXURE 5

Flora of conservation significance on Barrow Island

As per Mattiske & Associates (1993) 'State of knowledge on vegetation, Barrow Island,' report prepared for West Australian Petroleum Pty Ltd, Perth.

Abutilon otocarpum

Acacia cowleana

Acacia inaequilatera (dwarf form)

Acacia synchronicia

Cassytha capillaris

Cullen patens

Dicanthium sericeum subsp. *humilius*

Dysphania kalpari

Erythrina vespertilio

Eucalyptus xerothermica ms

Euphorbia sp.A

Ficus opposita var. *aculeata*

Ficus virens var. *virens*

Gossypium australe

Grevillea pyramidalis var. *leucadendron*

Hakea lorea subsp. *lorea* (ex *suberea*)

Halosarcia indica subsp. *julacea*

Hibiscus sturtii var. *platychlamys*

Hybanthus aurantiacus

Isotropis atropurpurea

Mallotus dispersus

Melaleuca cardiophylla

Santalum murrayanum

Sida micracantha

Sporobolus mitchelli

Stemodia glabella

Whitechloa airoides

As per Chevron Texaco (2004) Environment Plan. Barrow Island Oilfield Production Flowlines Replacement Project. Report No. C04329 Rev. A.

Dolichandrone heterophylla

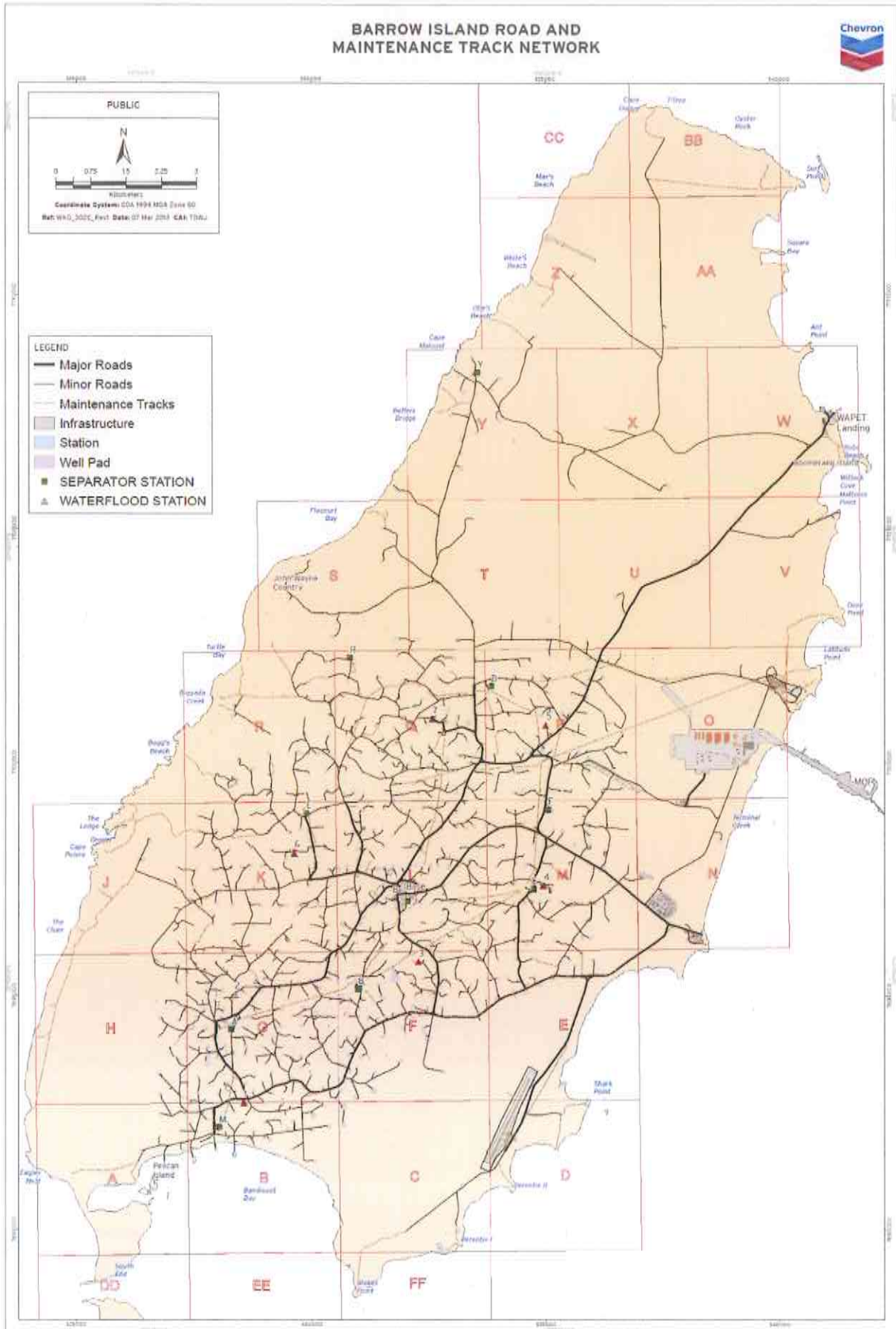
Clerodendrum tomentosum var. *lanceolatum*

Jasminum calcarium

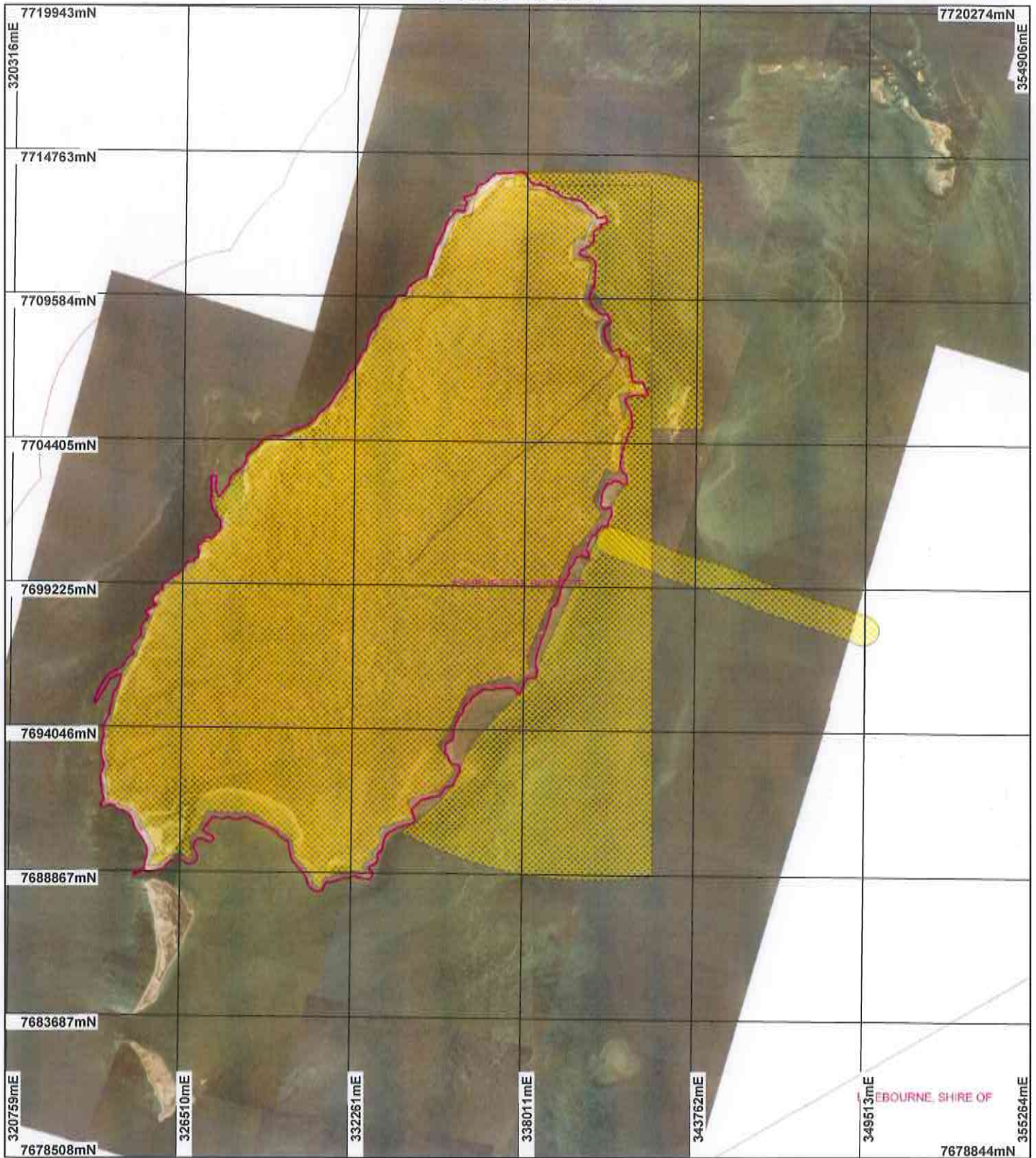
All species identified in a *qualified botanist's* report required by this Permit as suffering low regeneration rates after site disturbance influenced by soil availability, type of soil available, rainfall, exposure of disturbed area, presence of naturally invasive species in the surrounding area and whether the area has been cleared, bladed, crushed or compacted.

ANNEXURE 6

BWI Road and Maintenance Track Network



Plan 123/6



LEGEND

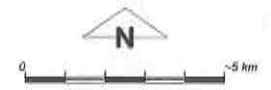
Clearing Regulations - Environmentally Sensitive Areas

Local Government Authorities

Barrow and Montebello Islands 80cm Orthomosaic - Landgate 10/01

Road Centrelines
Cadastre for labelling

Clearing Instruments
 Areas Approved to Clear
Badgingarra 50cm Orthomosaic - Landgate 2006



Scale 1:190385
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Date 16/5/13
M Warnock

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Department of Environment and Conservation

Our environment, our future
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* Project Data. This data has not been quality assured. Please contact map author for details.



1. Application details

1.1. Permit application details

Permit application No.: 123/6
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Chevron Australia Pty Ltd

1.3. Property details

Property: LOT 3000 ON PLAN 91514 (BARROW ISLAND 6712)
Local Government Area:
Colloquial name:

1.4. Application

| | | | |
|--------------------|-----------|--------------------|----------------------|
| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
| 105 | | Mechanical Removal | Petroleum Production |

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 16 May 2013

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

| Vegetation Description | Clearing Description | Vegetation Condition | Comment |
|---|---|--|--|
| <p>Beard vegetation units:</p> <p>- 667: Hummock grasslands, shrub-steppe: scattered shrubs over <i>Triodia wiseana</i> & <i>T. sp. indet.</i> Aff. <i>Angusta</i> over the majority of the island and</p> <p>- 117: Hummock grasslands, grass steppe, soft spinifex along the south coast and extending northwards (Hopkins et al. 2001, Shepherd et al 2001). E.M Mattiske & Associates (1993) identified 34 vegetation types</p> | <p>Description of the vegetation on the entire island generally is floral assemblages dominated by <i>Triodia</i> grasslands and shrubby <i>Acacia</i> and <i>Melaleuca</i> (Mattiske Consulting 1977). Vegetation has been disturbed historically for seismic activity and petroleum production. In areas other than these disturbed areas, vegetation is intact (Site visit : DoE Officer 18.10.04)</p> | <p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)</p> | <p>Site visit, DoE Officer (October 2004): Vegetation on the entire island has historically been disturbed for seismic and petroleum production activities. No information was supplied in terms of the number of hectares that have thus been disturbed for infrastructure, roads, access tracks, seismic activity, well lease areas and current pipeline footprint etc. Generally, extant vegetation in undisturbed areas appears to be in pristine condition, with introduced species (including weeds) restricted to established infrastructure such as buildings.</p> <p>Supporting documentation indicates that approx 20.4 ha of native vegetation are intended to be cleared in each of the five years of the purpose permit. Of these, more than 13.5 ha is to be cleared for offroad access, a majority of which (13+ha) is for flowline replacement. The remainder is primarily clearing of regrowth.</p> |

3. Assessment of application against clearing principles

Comments

CEO amendment to modify a number of permit conditions on clearing permit CPS 123/5 and extend the duration. A review of current environmental information reveals no new additional information. Therefore the assessment against the clearing principles has not changed and can be found in the Clearing Permit Decision Report CPS 123/4.

Methodology

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

The proposal is at variance with Principles a (biodiversity) and h (conservation area). Management strategies have been applied to the clearing of 105ha over five years. A series of conditions that establish a process to assess the impact of clearing, minimise or avoid the impact of clearing against an environmental sensitivity database developed for Barrow Island has been developed. In addition, the project replaces flowlines that are unable to meet future standards for leaks, and will include rationalisation and decommissioning of the existing carbon-steel pipeline network. The proponent has selected the route to minimise impacts on significant biodiversity, fauna and flora values.

Methodology

4. References

- Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

5. Glossary

| Term | Meaning |
|-------|--|
| BCS | Biodiversity Coordination Section of DEC |
| CALM | Department of Conservation and Land Management (now BCS) |
| DAFWA | Department of Agriculture and Food |
| DEC | Department of Environment and Conservation |
| DEP | Department of Environmental Protection (now DEC) |
| DoE | Department of Environment |
| DoIR | Department of Industry and Resources |
| DRF | Declared Rare Flora |
| EPP | Environmental Protection Policy |
| GIS | Geographical Information System |
| ha | Hectare (10,000 square metres) |
| TEC | Threatened Ecological Community |
| WRC | Water and Rivers Commission (now DEC) |