



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3802/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Chevron Australia Pty Ltd**

1.3. Property details

Property: Petroleum Production Licence L 1H R2
Local Government Area: Ashburton
Colloquial name: Barrow Island infill drilling – Wells S87 and T82

1.4. Application

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

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>The vegetation of Barrow Island has been mapped as two broad vegetation types: Beard Vegetation Associations 117 and 667 (GIS Database). Beard Vegetation Association 117 occurs at the southern end of the island and covers approximately 5% of the 23,000 hectare island. The remainder of the island (approximately 22,000 hectares), is recorded as Beard Vegetation Association 667: Hummock grasslands; shrub steppe; scattered shrubs over <i>Triodia wiseana</i> and <i>T. sp. indet. aff. angusta</i> (GIS Database; Shepherd, 2007).</p> <p>The area proposed to clear is located in approximately the middle of the island, within the area mapped as Beard Vegetation Association 667.</p> <p>A vegetation survey conducted by Astron Environmental Services (Astron) in late March 2009 identified five vegetation associations within the area applied to clear:</p> <p>1. L1b1: Scattered low <i>Ficus brachypoda</i> and <i>Pittosporum phylliraeoides</i> var. <i>phylliraeoides</i> trees to open low woodland over low scattered <i>Stylobasium spathulatum</i> and <i>Petalostylis labicheoides</i> shrubs over hummock grassland of <i>Triodia wiseana</i> with occasional <i>Cymbopogon ambiguus</i>, <i>Tephrosia rosea</i> var. <i>clementii</i> and <i>Triodia angusta</i>.</p> <p>2. L1b8: Scattered <i>Ficus brachypoda</i> trees over scattered shrubs to open shrubland of <i>Petalostylis labicheoides</i> over low scattered shrubs to low shrubland of <i>Diplopeltis eriocarpa</i> over hummock grassland to closed hummock grassland of <i>Triodia wiseana</i>.</p> <p>3. L1b29: Scattered <i>Ficus brachypoda</i> over low open shrubland of <i>Tephrosia rosea</i> var. <i>clementii</i> over hummock grassland of <i>Triodia wiseana</i>. Sometimes</p>	<p>Chevron Australia Pty Ltd (Chevron) has applied to clear up to a total of 2.26 hectares of native vegetation, within an application area of approximately 18.27 hectares, for the installation of two new production wells within the existing operational oilfield on Barrow Island. The two new wells are part of an ongoing infill drilling programme within the existing oilfield, aimed at maximising oil production, and will be located immediately adjacent to existing wells S88 and T81 (Chevron, 2010).</p> <p>The proposed clearing is for the construction of two new drill pads for the proposed 'S87' and 'T82' wellsites, and for associated infrastructure including flowlines, powerlines and access roads. The drill pads will be completely cleared of vegetation, in order to safely accommodate the drill rig and other equipment during the drilling operation and to minimise any fire risk. Access to the two drill pads will be via existing access roads, however some minor road widening may be required for drill rig access (Chevron, 2010).</p> <p>The two new wells will be tied into the existing oilfield infrastructure by the installation of above-ground water and oil pipelines (Chevron, 2010). The new pipelines are expected to total approximately 2.25 kilometres in length, and will follow existing pipeline routes wherever possible. Pipelines will be laid by hand or by four wheel drive vehicle, and the vegetation along the pipeline routes will not be completely cleared but will be damaged by the movement of people and vehicles. Some localised slashing of vegetation may be required, to minimise fire risk (Chevron, 2010).</p>	<p>Pristine: No obvious signs of disturbance (Keighery 1994)</p>	<p>The Barrow Island oilfield has been producing oil since 1967. There are currently more than 400 production wells on Barrow Island. The S87 and T82 wells are located on the northern boundary of the existing oilfield (Chevron, 2010).</p> <p>The drilling programme will utilise water-based drilling muds (Chevron, 2007). Environmental management of the drilling programme will be conducted in accordance with the Chevron Vegetation Management Plan for Barrow Island.</p> <p>Barrow Island is an A Class Nature Reserve, managed for the purposes of conservation by the Department of Environment and Conservation (DEC). Chevron operations on Barrow Island are conducted in consultation with the DEC.</p> <p>Please note: This project is not related to the Gorgon gas development project under construction on Barrow Island.</p>

with scattered to open *Sarcostemma viminale* subsp. *australe* and scattered *Pentalepis trichodesmoides*.

4. L3a1: Hummock grassland to closed hummock grassland of *Triodia wiseana*.

5. L13e1: Mixed shrubland of *Stylobasium spathulatum* and *Petalostylis labicheoides* over mixed hummock grassland of *Triodia wiseana* and *T. Angusta* (Astron, 2010).

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposal is at variance to this Principle

Barrow Island is approximately 23,000 hectares in size, and is the largest island in the Barrow group and the second largest island in Western Australia. The island is located approximately 55 kilometres off the Pilbara coast, however the vegetation of Barrow Island is unlike that of any other island off the Pilbara coast, and is more closely related to that of the Cape Range area (Conservation Commission, 2003). The Biodiversity Audit of Western Australia (CALM, 2002), classified Barrow Island as part of the Cape Range subregion of the Carnarvon Bioregion. The flora of the island has been extensively surveyed over many years, and a recent review of previous surveys has determined that a total of 377 plant taxa have been recorded over the island, including 28 introduced species (Astron, 2010; Chevron, 2010).

Barrow Island is an A Class Nature Reserve that has been recognised internationally for its extremely high biodiversity conservation values (Conservation Commission, 2003). It is an important refuge for marsupials, subterranean fauna and sea turtles (CALM, 2002). Barrow Island is best known for its abundant mammals, including several species that have either declined in numbers or become extinct on the mainland (Conservation Commission, 2003).

The waters adjacent to Barrow Island are listed on the Register of National Estate, for their natural values. The listed area also includes the shoreline and beach slopes of the island (DEH, 2006).

However, Barrow Island is also the site of a large on-shore oilfield, operational since the 1960's. The island is criss-crossed by numerous seismic lines from previous petroleum exploration activities, and by pipelines carrying oil from more than 400 oil wells operating on the island, to the storage tanks located on the eastern side of the island (Chevron, 2007).

Despite the existing oilfield development on the island, the biodiversity of Barrow Island has survived relatively intact, due in large part to the lack of introduced fauna species and comparatively few species of introduced flora (Conservation Commission, 2003). Quarantine procedures will be applied to the drilling rig and all other materials and equipment transported to the island for the Infill Drilling Programme (Chevron, 2007).

To date, approximately 5.4% of the vegetation on Barrow Island has been disturbed for the development and operation of existing oilfield activities (Chevron, 2010). The Conservation Commission of WA (2003), considered that the extent of the existing clearing on the island was significant, and that the cumulative impacts of successive instances of clearing would, in the longer term, substantially diminish the biodiversity conservation values of Barrow Island Nature Reserve and the surrounding marine ecosystems.

The proposed clearing will occur on the northern boundary of the existing oilfield area, approximately halfway along the length of the island and approximately 2.5 kilometres from the western coast of the island. Each vegetation unit on Barrow Island has been assigned a priority category (from 1 to 4) and listed accordingly in the Barrow Island Vegetation Management Plan (Astron, 2010; Chevron, 2010), which aims to ensure appropriate management of the native vegetation and biodiversity of the island. Priority 1 has been assigned to the rarest or most restricted vegetation associations on the island, while Priority 4 has been assigned to the most common and widespread vegetation associations (Astron, 2010). A flora and vegetation survey conducted during March 2009 recorded five vegetation associations within the application area, all of which were classified as Priority 4 vegetation units, as described in the Barrow Island Vegetation Management Plan (Astron, 2010).

The survey conducted over the area applied to clear recorded a total of 39 plant taxa from 23 families and 36 genera (Astron, 2010). None of the flora species recorded within the application area were considered to have restricted distributions on the island (Astron, 2010). One Priority Flora species, *Corchorus congener* (P3) was recorded within the application area, occurring within all five vegetation associations. However this species is known to have a wide distribution across the island (Astron, 2010).

Twenty eight species of introduced flora have been recorded on Barrow Island, however no introduced flora species were recorded within the current clearing permit application area. Astron (2010) reported that the vegetation within the application area was in "very good" to "excellent" condition with minimal or no signs of disturbance. The presence of weeds can adversely impact on biodiversity, and appropriate management measures should be implemented to prevent the spread of weeds from elsewhere on the island into the areas proposed to clear.

Astron (2010) reported that the vegetation types and fauna habitats found within the application area are all well represented on the island. The survey report concluded that the proposed clearing is not expected to have any significant impact on any flora or fauna of conservation significance or any critical fauna habitats (Astron, 2010).

An Environmental Management Plan (EMP) for the Barrow Island infill drilling programme was developed in consultation with DEC and approved by the Department of Mines and Petroleum (DMP) in 2007. Subsequent revisions to the EMP to incorporate additional wells must be approved by DMP prior to the commencement of drilling.

Based on the above, the proposed clearing is at variance to this Principle. However, it is considered that the potential impacts of the proposed clearing on the biodiversity values of Barrow Island can be effectively managed through the conditions imposed on the clearing permit and the management measures outlined in the EMP.

Methodology Astron (2010)
CALM (2002)
Chevron (2007)
Chevron (2010)
Conservation Commission (2003)
DEH (2006)

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments Proposal is not likely to be at variance to this Principle

Barrow Island supports a large number of fauna species, including several threatened species, and is widely recognised as an important refuge for terrestrial mammals which are either no longer found or are greatly reduced in numbers on the mainland (CALM, 2002; Conservation Commission, 2003). Five of the 14 terrestrial mammal species found on Barrow Island are listed in Schedule 1 - Fauna that is rare or is likely to become extinct, of the *Wildlife Conservation (Specially Protected Fauna) Notice 2010(2)*, and are protected under the *Wildlife Conservation Act 1950*. These are the Burrowing Bettong (Boodie), (*Bettongia lesueur* ssp. (WAM M10733)); Barrow Island Golden Bandicoot, (*Isodon auratus barrowensis*); Spectacled Hare Wallaby, (*Lagorchestes conspicillatus conspicillatus*); Barrow Island Euro, (*Macropus robustus isabellinus*); and the Black-flanked Rock Wallaby, (*Petrogale lateralis lateralis*). Boodies, Golden Bandicoots, Spectacled Hare Wallabies and Euros are all widely distributed on the island. The Black-flanked Rock-Wallabies are largely restricted to the west coast of the island, where they shelter in rock-piles, cliffs and caves (Chevron, 2010). The proposed clearing is located away from coastal areas, and the small area of the proposed clearing is unlikely to have any significant impact on the habitats of any of the above species.

The beaches of Barrow Island are a significant nesting site for marine turtles, in particular the Green Turtle, (*Chelonia mydas*) and the Flatback Turtle, (*Natator depressus*) (CALM, 2002), both of which are listed in Schedule 1 - Fauna that is rare or is likely to become extinct, of the *Wildlife Conservation (Specially Protected Fauna) Notice 2010(2)*. However, the proposed clearing is located in the middle of the island, and will not impact on any beach areas.

Other fauna known to occur on Barrow Island include more than 120 bird species including the rare Barrow Island Black and White Fairy-wren (*Malurus leucopterus edouardi*); more than 40 reptile species including one endemic lizard species (*Ctenotus pantherinus acripes*); and a rich subterranean fauna (troglifauna and stygofauna) of conservation significance (Chevron, 2010).

Subterranean fauna are considered unlikely to be impacted by the proposed vegetation clearing, however they may be impacted by the actual drilling activities proposed.

Any potential impacts from the drilling activities fall outside the scope of the clearing permit process and will be addressed by the proponent in their Environmental Management Plan (EMP) for the drilling programme, which has been developed in consultation with the DEC, and must be approved by DMP, prior to commencement of any project works.

Only fauna habitats that are site restricted, for example pockets of dense vegetation, burrows, caves, termite mounds, are considered to be at risk from the proposed clearing. Chevron has an Environmental Sensitivity Mapping Database for the island which records the locations of all known significant fauna habitats. This database is continually updated with new survey information.

Astron Environmental Services (Astron) conducted an environmental assessment of the application area and surrounding areas in March 2009. The habitat type within the application area was described as: limestone ridges, slopes and small rises. No fauna of conservation significance or restricted habitat features were recorded either within or in close proximity to the application area (Astron, 2010). Several specimens of the small tree *Ficus brachypoda*, an important fauna habitat species, were recorded within the application area (Astron, 2010). Further surveys prior to the commencement of clearing will pinpoint the location of these trees and final drill pad locations will be selected to minimise impacts to this species (Chevron, 2010). From the initial survey of the application area conducted in March 2009 Astron (2010) concluded that all the fauna

habitats found within the application area were well represented on the island, and that no fauna species were expected to be restricted to the application area.

Intensive, site specific surveys of the areas to be cleared will be conducted prior to the commencement of vegetation clearing to ensure that no boodie warrens or other significant fauna habitat features will be disturbed by the clearing (Chevron, 2010). It is considered that the potential impacts on fauna habitats can be adequately managed through the conditions imposed on the clearing permit and the management measures outlined in the EMP, and that the proposed clearing is unlikely to have any significant impact on the fauna habitats of the island.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

It is considered that the potential impacts on fauna habitats can be adequately managed through the conditions imposed on the clearing permit and the management measures outlined in the EMP, and that the proposed clearing is unlikely to have any significant impact on the fauna habitats of the island.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Astron (2010)
CALM (2002)
Chevron (2010)
Conservation Commission (2003)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposal is not likely to be at variance to this Principle

There are no known populations of Declared Rare Flora on Barrow Island (Chevron, 2010; GIS Database). Three species of Priority Flora occur on the island: *Corchorus congener* (P3), *Cucumis* sp. Barrow Island (P2), and *Helichrysum oligochaetum* (P1) (Chevron, 2010; GIS Database).

The vegetation survey recorded one Priority Flora species, *Corchorus congener* (P3), occurring within all five vegetation associations (Astron, 2010). However this species has a wide distribution across the island and is known to regenerate well following disturbance. The removal of some plants of this species in a localised area, which represents a small proportion of its known distribution, is not considered to be a threat to the overall population of *C. congener* on Barrow Island (Astron, 2010).

No other Priority Flora species were found during the vegetation survey (Astron, 2010).

Chevron have developed a Vegetation Management Plan and an Environmental Sensitivity Mapping Database for Barrow Island, which identifies vegetation associations that are considered to be of particular conservation significance due to their unique species composition or restricted distribution (Chevron, 2007).

Astron (2010) concluded that the proposed clearing would not result in a detrimental impact on any vegetation type of either high conservation significance or restricted distribution on Barrow Island.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Astron (2010)
Chevron (2007)
Chevron (2010)
GIS Database:
- Declared Rare and Priority Flora List

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments Proposal is not likely to be at variance to this Principle

There are no known Threatened Ecological Communities (TEC's) on Barrow Island (Chevron, 2010; GIS Database).

DEC has listed two Priority Ecological Communities (PEC's) occurring on Barrow Island (Chevron, 2010). The PEC's include subterranean fauna (stygo fauna and troglo fauna) and a creekline vegetation association. A PEC buffer zone covers part of the clearing permit application area (GIS Database). A PEC buffer zone is an indicator that the PEC may occur within that area, however vegetation associations found within the application area are not representative of the creekline vegetation association (Astron, 2010), and subterranean fauna is unlikely to be impacted by the proposed clearing.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Astron (2010)

Chevron (2010)
 GIS Database:
 - Threatened Ecological Communities Buffered

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal is not at variance to this Principle

Barrow Island lies off the Pilbara coast, however the vegetation of the island is more closely related to that of the Cape Range area. Accordingly, the Western Australian Biodiversity Audit (CALM, 2002), classified Barrow Island as falling within the Cape Range subregion of the Carnarvon Bioregion. Shepherd (2007) reports that approximately 99.8% of the pre-European vegetation still exists in the IBRA Carnarvon Bioregion. The vegetation in the application area is broadly mapped as Beard Vegetation Association 667: Hummock grasslands; shrub steppe; scattered shrubs over *Triodia wiseana* and *T. sp. indet. aff. angusta* (GIS Database; Shepherd, 2007). Shepherd (2007) reported that there was approximately 89.7% of this vegetation type remaining, with approximately 97.6% in reserves.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Carnarvon	8,382,606	8,368,970	~ 99.8	Least Concern	3.6
Beard vegetation associations - State					
667	22,861	20,500	~ 89.7	Least Concern	97.6
Beard vegetation associations - Bioregion					
667	21,832	20,347	~ 93.2	Least Concern	99.7

* Shepherd (2007)

** Department of Natural Resources and Environment (2002)

Barrow Island covers an area of approximately 23,000 hectares. To date, approximately 5.4% of the vegetation on Barrow Island has been disturbed for the development and operation of existing oilfield activities (Chevron, 2010). The proposed clearing will disturb a further 2.26 hectares of vegetation which represents a very small percentage of the remaining vegetation of the island.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology CALM (2002)
 Chevron (2010)
 Dept of Natural Resources and Environment (2002)
 Shepherd (2007)
 GIS Database:
 - Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal is not likely to be at variance to this Principle

There are no permanent watercourses or waterbodies on Barrow Island (Chevron, 2010; GIS Database).

There are no watercourses within the application area. However there is a minor seasonal watercourse (shallow drainage line) in close proximity to the western boundary (Chevron, 2010; GIS Database). This drainage line is dry for most of the year, only flowing briefly following significant rainfall events (Chevron, 2010). The vegetation immediately adjacent to this watercourse is different to the surrounding vegetation. However this vegetation association falls wholly outside of the application area.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Chevron (2010)
 GIS Database:
 - Hydrography, Linear

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposal is not likely to be at variance to this Principle

The majority of the application area occurs on gently sloping stony hill slopes, with a stony mantle over red skeletal red silts (Astron, 2010). The small areas of the proposed clearing for two wellsites, and the linear clearing for pipelines and power cables are unlikely to cause appreciable land degradation.

Under the terms of the EMP for the infill drilling programme, the proponent is required to implement appropriate erosion control measures to minimise erosion within the application area and surrounding areas. The proposed erosion control measures for the two new wellsites will be described by the proponent in their revised EMP, which must be approved by DMP, prior to commencement of the project works.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Astron (2010)

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments Proposal is at variance to this Principle

Barrow Island is an A Class Nature Reserve managed for the purposes of conservation by the Department of Environment and Conservation (GIS Database). The reserve is recognised as having extremely high biodiversity conservation values (Conservation Commission, 2003).

The island and surrounding waters are also listed for their natural values on the Register of the National Estate (DEH, 2006; GIS Database). The Barrow Island Marine Park adjoins the western coastline of Barrow Island (GIS Database). The marine park will not be impacted by the proposed clearing, which is located in the middle of the island.

Based on the above, the proposed clearing is at variance to this Principle. However, the Barrow Island Nature Reserve covers approximately 23,000 hectares (Chevron, 2010; GIS Database), and the area of proposed clearing (2.26 hectares) represents a very small percentage of the total area of the nature reserve. It is considered that the proposed clearing can be adequately managed to minimise impacts on the environmental values of any conservation areas.

Methodology Chevron (2010)
Conservation Commission (2003)
DEH (2006)
GIS Database:
- DEC tenure
- Register of National Estate

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments Proposal is not likely to be at variance to this Principle

Barrow Island has an arid subtropical climate, with an average annual rainfall of 320 millimetres (Chevron, 2007). Rainfall is highly variable and frequently associated with cyclones, which occur between November and March (Chevron, 2007).

There are no permanent watercourses or waterbodies within the application area (GIS Database), and the proposed clearing is unlikely to significantly alter surface water flows.

The groundwater level over most of the island is close to sea level (Chevron, 2007). Hence the groundwater depth ranges from nil at the coast, up to approximately 50 metres on higher landforms in the centre of the island. An extensive brackish to saline shallow aquifer is known to exist in the limestone karst system of the island (above the watertable) (Chevron, 2007). The proposed clearing of 2.26 hectares of vegetation is unlikely to have any impact on groundwater levels or quality.

The proposed clearing is unlikely to cause deterioration in the quality of any surface or underground water.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Chevron (2007)
GIS Database:
- Hydrography, Linear

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments Proposal is not likely to be at variance to this Principle

Barrow Island has an arid, sub-tropical climate, and receives variable summer and winter rainfall (CALM, 2002; Chevron 2007). The region is prone to seasonal cyclones and natural flooding may occur occasionally during the wet season (November to March). There are several minor seasonal drainage lines located within the application area (GIS Database), however these drainage lines only flow temporarily following significant rainfall events.

The small area of proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology CALM (2002)
Chevron (2007)
GIS Database:
- Hydrography, Linear

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

Comments

The proposed S87 and T82 wells are part of the ongoing Barrow Island Infill Drilling Programme (also known as the Windalia Infill Drilling Programme), which is establishing additional wells within the existing Windalia oilfield on Barrow Island, to maximise oil production. The infill drilling programme commenced in 2007 and proposed to establish approximately 50 water injection and production wells, to be drilled progressively over a period of approximately five years. Two previous clearing permits have been issued for the Barrow Island Infill Drilling Programme. The original clearing permit application (CPS 1422/1) was referred to the Environmental Protection Authority (EPA) in 2006. The EPA determined that the proposed clearing could be adequately managed by the Clearing Regulations under Part V of the *Environmental Protection Act 1986* (EP Act) (EPA, 2007). The EPA advertised the decision not to formally assess the clearing permit application, and the Minister for the Environment received an appeal against the EPA's decision. The Minister dismissed the appeal, and determined that the proposal did not require formal assessment under Part IV of the EP Act, as it could be the subject of appropriate examination through the clearing permit process administered by the then DoIR (now DMP) (Minister for the Environment, 2007). Clearing permit 1422/1 was granted in April 2007 and approved the clearing of up to 39.9 hectares of native vegetation within a total application area of approximately 9,662 hectares. Approximately 48 wells were planned to be drilled within the original permit area, over a five year period. Ten of these wells have been drilled to date, and another 14 wells are scheduled to be drilled during 2011 (Chevron, 2010). Chevron subsequently determined that two additional wells were required slightly outside of the northern boundary of the original clearing permit area, and the clearing of 2.1 hectares of native vegetation for the two additional wells (S88 and T81) was approved under clearing permit 1798/1 which was granted in May 2007. The current clearing permit application is for a further two wells located in close proximity to wells S88 and T81.

This clearing permit application was advertised on 28 June 2010 by the Department of Mines and Petroleum inviting submissions from the public. One submission was received stating no objection to the proposed clearing.

There are no known native title claims registered over Barrow Island (GIS Database).

There is one Aboriginal site of significance recorded as occurring over the clearing permit application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

A water licence will not be required for this project, as *The Rights in Water and Irrigation Act 1914* has no jurisdiction on offshore islands (DoW, 2006).

It is the proponent's responsibility to liaise with the Department of Environment and Conservation to determine whether a Works Approval or any other licences or approvals are required for the proposed works.

Please note: This project is related to the existing oilfield operation on Barrow Island and is not related to the Gorgon gas development project under construction on Barrow Island.

Methodology Chevron (2010)
DoW (2006)
EPA (2007)
Minister for the Environment (2007)
GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s. 51O of the *Environmental Protection Act 1986*, and the proposed clearing is at variance to Principles (a) and (h), is not likely to be at variance to Principles (b), (c), (d), (e), (f), (g), (i), and (j), and is not at variance to Principle (e).

5. References

- Astron (2010) Barrow Island Infill Drilling Program Flora and Vegetation Survey, May 2010. Astron Environmental Services, Western Australia.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
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- Chevron (2010) Barrow Island Infill Drilling Program Purpose Permit Application Supporting Documentation. Chevron Australia Pty Ltd, Western Australia.
- Conservation Commission (2003) Biodiversity values on Barrow Island Nature Reserve and the Gorgon Gas Development. Advice to the Government from the Conservation Commission of Western Australia. Perth, Western Australia.
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- DoW (2006) Water Allocation/Licence Advice. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Environment and Conservation, Western Australia.
- EPA (2007) Clearing of approximately 42 hectares of native vegetation - Windalia infill drilling Barrow Island. CRN 220514. Chairman's Determinations, 15 January 2007. Department of Environment and Conservation, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Minister for the Environment (2007) Appeal Decision Summary. Appeal Number 5 of 2007, 5 April 2007. Office of the Appeals Convenor, Western Australia.
- Shepherd, D.P. (2007) Adapted from: 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.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), Western Australia.
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia.
DMP	Department of Mines and Petroleum, Western Australia.
DoE	Department of Environment, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
IBRA	Interim Biogeographic Regionalisation for Australia.
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005. Department of Conservation and Land Management, Como, Western Australia*} :-

- P1 Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2 Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3 Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4 Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable):** taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1 Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2 Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3 Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4 Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna. Department of Conservation and Land Management, Como, Western Australia*} :-

- P1 Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2 Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3 Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4 Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5 Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999*)

- EX** **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)** **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR** **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN** **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU** **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD** **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.