



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 7660/1  
Permit type: Purpose

### 1.2. Proponent details

Proponent's name: APA Operations Pty Ltd

### 1.3. Property details

Property: Mining Lease 38/435  
Mining Lease 38/436  
Mining Lease 38/437  
Mining Lease 38/438  
Mining Lease 38/439  
Mining Lease 38/841  
Mining Lease 38/1179  
Mining Lease 38/1255  
Mining Lease 38/1267  
Miscellaneous Licence 38/252  
Miscellaneous Licence 38/260  
Pipeline Licence No. 114  
Local Government Area: Shire of Laverton  
Colloquial name: Yamarna Gas Pipeline Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 9 November 2017

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

**Vegetation Description** Beard vegetation associations have been mapped for the whole of Western Australia. The clearing permit application area has been broadly mapped as the following five Beard vegetation association (GIS Database):

- 18: Low woodland; mulga (*Acacia aneura*);
- 24: Low woodland; *Allocasuarina cristata*;
- 84: Hummock grasslands, open low tree & mallee steppe; marble gum & mallee (*Eucalyptus youngiana*) over hard spinifex *Triodia basedowii* between sand hills;
- 1239: Hummock grasslands, open medium tree & mallee steppe; marble gum & mallee (*E. youngiana*) over hard spinifex *Triodia basedowii* on sandplain; and
- 1446: Succulent steppe with scrub; mulga over bluebush.

A flora and vegetation survey was undertaken over the application area by Botanica Consulting (Botanica) (2017) during 14 - 21 August 2015, 8 November 2015, 1 - 2 September 2016, 9 - 10 January 2017 and 6 - 8 April 2017 (Botanica, 2017). A total of 54 vegetation types were identified within the application area.

#### Casuarina Forests and Woodlands/Acacia Shrublands:

1. Low woodland of *Casuarina pauper* / *Acacia incurvaneura* over low scrub of *A. quadrimarginea* / *Dodonaea viscosa* and low heath of *Frankenia georgei* / *Prostanthera wilkieana* on breakaway,

#### Acacia Forests and Woodlands:

2. Low woodland of *Acacia aptaneura* over low scrub *Hakea preissii* / *A. colletioides* / *Atriplex bunburyana* and dwarf scrub *Maireana pyramidata* on clay-loam plain,
3. Low forest of *Acacia incurvaneura* over low scrub of *A. ramulosa* var. *ramulosa* / *Eremophila latrobei* subsp. *glabra* / *Senna artemisioides* subsp. x *artemisioides* / *Eremophila jucunda* and dwarf scrub of *Eremophila forrestii* subsp. *forrestii* on clay-loam plain,

#### Acacia Open Woodlands:

4. Low woodland of *Acacia caesaneura* / *A. incurvaneura* over heath of *Eremophila latrobei* subsp.

- filiformis*/*Senna artemisioides* subsp. *x artemisioides* and low grass of *Eragrostis eriopoda* on clay-loam plain,
5. Open low woodland of *Acacia incurvaneura*/*Hakea preissii* over low scrub *Eremophila pantonii*/*Maireana pyramidata*/*Maireana sedifolia*/*Maireana glomerifolia* and dwarf scrub *Maireana triptera* on clay-loam plain,
  6. Open low woodland of *Acacia aptaneura* over low scrub of *Eremophila pantonii*, *Atriplex bunburyana*, *Cratystylis subspinescens* and *Maireana pyramidata* on clay-loam plain,

**Acacia Open Woodlands:**

7. Open low woodland of *Acacia ayersiana*/*A.caesaneura* over low scrub of *A. ramulosa* var. *ramulosa*/*A. tetragonophylla*/*Eremophila* spp. and dwarf scrub of *Maireana triptera*/*Solanum lasiophyllum*/*Ptilotus obovatus* and open low grass of *Eragrostis eriopoda* on clay-loam plain,

**Acacia Shrublands:**

8. Scrub of *Acacia burkittii* over low scrub of *Senna artemisioides* subsp. *filifolia* and dwarf scrub of *Ptilotus obovatus*/low grass of *Aristida contorta* on clay-loam plain,

**Mallee Open Woodlands and Sparse Mallee Shrublands:**

9. Very open tree mallee of *Eucalyptus lucasii*/low woodland of *Acacia caesaneura*/*A. incurvaneura* over heath of *Eremophila latrobei* subsp. *glabra* and very open low grass of *Eragrostis eriopoda* on clay-loam plain,

**Mallee Woodlands and Shrublands/ Acacia Forests and Woodlands:**

10. Open tree mallee of *Eucalyptus lucasii*/Low woodland of *Acacia incurvaneura*/*A. caesaneura* over heath of *Eremophila latrobei* subsp. *filiformis* and very open low grass of *Eragrostis eriopoda* on clay-loam plain,
11. Open tree mallee of *Eucalyptus youngiana*/Forest of *Acacia incurvaneura* / *A. mulganeura* over heath of *Eremophila forrestii* subsp. *forrestii* and dense low grass of *Eragrostis eriopoda* on clay-loam plain,

**Acacia Forests and Woodlands:**

12. Low woodland of *Acacia aptaneura*/*Acacia caesaneura* over open low scrub of *Eremophila latrobei* subsp. *latrobei* and dwarf scrub of *Eremophila gilesii*/*Eremophila malacoides* with occasional *Eragrostis eriopoda* in drainage depression,

**Acacia Open Woodlands:**

13. Open low woodland of *Acacia incurvaneura* over dwarf scrub of *Maireana pyramidata*/Low heath of *Frankenia georgei* and *Sclerolaena densiflora* in drainage depression,
14. Open low woodland of *Acacia caesaneura*/*A. macraneura* /*A. ayersiana* over low scrub of *A. ramulosa* var. *ramulosa*/*Eremophila forrestii* subsp. *forrestii*/*Eremophila margarethae*/*Maireana triptera* and open low grass of *Eragrostis laniflora* in drainage depression,
15. Open low woodland of *Acacia aptaneura*/*A. incurvaneura* over low scrub of *A. craspedocarpa*/*A. tetragonophylla*/*Eremophila margarethae*/*Atriplex bunburyana* and dwarf scrub of *Cratystylis subspinescens* in drainage depression,

**Mallee Woodlands and Shrublands/ Acacia Forests and Woodlands:**

16. Very open tree mallee of *Eucalyptus lucasii*/Low forest of *Acacia burkittii*/*A. incurvaneura*/*A. caesaneura* over low scrub of *Eremophila latrobei* subsp. *latrobei*/*Senna artemisioides* subsp. *x artemisioides* and dwarf scrub of *Eremophila gilesii*/*Ptilotus obovatus* in drainage depression,

**Acacia Forests and Woodlands:**

17. Low woodland of *Acacia aptaneura*/*A. caesaneura* over heath of *Scaevola spinescens*/*Senna artemisioides* subsp. *x artemisioides*/*Senna artemisioides* subsp. *helmsii* and low heath of *Ptilotus obovatus*/*Maireana triptera* on quartz/rocky plain,
18. Low woodland of *Acacia incurvaneura* over heath of *Eremophila latrobei* subsp. *latrobei* and low heath of *Eremophila exilifolia* on quartz,rocky plain,
19. Low woodland of *Acacia aptaneura*/*A. incurvaneura* over low scrub of *Eremophila abietina* subsp. *ciliata*/*Senna artemisioides* subsp. *helmsii* and dwarf scrub of *Ptilotus obovatus* on quartz/rocky plain,
20. Low woodland of *Acacia aptaneura*/*A. caesaneura* over scrub of *A. burkittii*/*Senna artemisioides* subsp. *filifolia* and low scrub of *Ptilotus obovatus*/mid-dense hummock grass of *Triodia irritans* on quartz/rocky plain,
21. Low woodland of *Acacia burkittii* over low scrub of *Senna artemisioides* subsp. *x artemisioides* and mid-dense hummock grass of *Triodia irritans* on quartz/rocky plain,
22. Open low woodland of *Acacia caesaneura*/open scrub of *Eremophila oldfieldii* subsp. *angustifolia* over low scrub of *A. burkittii*/*Dodonaea lobulata* and dwarf scrub of *Ptilotus obovatus* on quartz/rocky plain,
23. Low forest of *Acacia caesaneura*/*A. quadrimarginea* over low scrub of *Senna artemisioides* subsp. *helmsii*/*A. tetragonophylla*/*A. burkittii*/*Eremophila margarethae*/*Ptilotus obovatus*/*Solanum lasiophyllum* and dwarf scrub of *Maireana triptera* on quartz/rocky plain,
24. Low woodland of *Acacia aptaneura*/*A. caesaneura*/*A. incurvaneura* over open low scrub of *A. ramulosa* var. *ramulosa*/*Senna artemisioides* subsp. *filifolia* and dwarf scrub of *Ptilotus obovatus*/open low grass of *Eragrostis eriopoda* on quartz/rocky plain,

**Acacia Open Woodlands:**

25. Open low woodland of *Acacia caesaneura* over low scrub of *Eremophila pantonii*/*Ptilotus obovatus* and dwarf scrub of *Maireana triptera* on quartz/rocky plain,

**Casuarina Forests and Woodlands:**

26. Low woodland of *Casuarina pauper* over heath of *Eremophila scoparia*/*Senna artemisioides* subsp. *x artemisioides* and low heath of *Ptilotus obovatus*/*Maireana triptera* on quartz/rocky plain,

**Eucalypt Woodlands:**

27. Open low woodland of *Eucalyptus gypsophila* over low scrub of *Eremophila scoparia* and dwarf scrub of *Ptilotus obovatus* on quartz/rocky plain,

**Acacia Forests and Woodlands:**

28. Open low woodland of *Acacia quadrimarginea* over heath of *Eremophila abietina* subsp. *ciliata* and dwarf scrub of *Ptilotus obovatus* on rocky hillslope,
29. Low woodland of *Acacia caesaneura/A. incurvaneura* over low scrub of *Scaevola spinescens/Senna cardiosperma* and dwarf scrub of *Ptilotus obovatus/Sida* sp. *excedentifolia* (J.L. Egan 1925) on rocky hillslope,
30. Low Forest of *Acacia caesaneura/A. incurvaneura* over low scrub of *A. ramulosa* var. *ramulosa/Dodonaea rigida/Senna* spp. and dwarf scrub of *Ptilotus obovatus* on Banded Ironstone Hill,

**Acacia Forests and Woodlands:**

31. Low forest of *Acacia caesaneura/A. incurvaneura* over dense hummock grass of *Triodia basedowii* in sandplain,
32. Low forest of *Acacia caesaneura/A. incurvaneura* over low scrub of mixed shrubs and dwarf scrub of *Eremophila gilesii*/mid-dense hummock grass of *Triodia irritans* in sandplain,
33. Forest of *Acacia aptaneura/A. caesaneura/A. incurvaneura* over low scrub of *A. ramulosa* var. *ramulosa* and dense tall grass of *Eragrostis eriopoda* in sandplain,
34. Forest of *Acacia caesaneura/A. incurvaneura* over low scrub of *A. ramulosa* var. *ramulosa/Eremophila forrestii* subsp. *forrestii* and mid-dense hummock grass of *Triodia irritans* in sandplain,
35. Low woodland of *Acacia aptaneura/A. caesaneura/A. incurvaneura* over open low scrub of *A. mulganeura/Eremophila latrobei* subsp. *latrobei* and dense hummock grass of *Triodia irritans* in sandplain,
36. Low woodland of *Acacia aptaneura/A. incurvaneura* over heath of *Cratystylis subspinescens* and dwarf scrub of *Frankenia setosa*/mid-dense hummock grass of *Triodia irritans* in sandplain,
37. Forest of *Acacia caesaneura* over scrub of *A. ramulosa* var. *ramulosa/Senna artemisioides* subsp. *filifolia* and low heath of *Ptilotus obovatus* in sandplain,

**Eucalypt Woodlands:**

38. Low woodland of *Eucalyptus gongylocarpa* over heath of *Acacia abrupta/A. ligulata* and dense hummock grass of *Triodia basedowii* in sandplain,

**Eucalypt Woodlands / Mallee Woodlands and Shrublands:**

39. Low woodland of *Eucalyptus gongylocarpa* over shrub mallee of *E. youngiana* and mid-dense hummock grass of *Triodia basedowii* in sandplain,

**Mallee Woodlands and Shrublands/ Acacia Forests and Woodlands:**

40. Open tree mallee of *Eucalyptus trivalva*/Low woodland of *Acacia craspedocarpa* over open low scrub of *A. desertorum* var. *desertorum/A. ligulata* and mid-dense hummock grass of *Triodia basedowii* in sandplain,
41. Very open tree mallee of *Eucalyptus youngiana*/Open low woodland of *Acacia caesaneura* over low scrub of *A. ligulata* and hummock grass of *Triodia basedowii* in sandplain,

**Mallee Woodlands and Shrublands:**

42. Open tree mallee of *Eucalyptus youngiana/E. trivalva* over heath of *Acacia abrupta* and dense hummock grass of *Triodia basedowii* in sandplain,
43. Open tree mallee of *Eucalyptus concinna/E. youngiana* over heath of *Acacia desertorum* var. *desertorum/A. grasbyi* and low heath of *Aluta maisonneuvei* subsp. *auriculata*/mid-dense hummock grass of *Triodia irritans* in sandplain,
44. Open tree mallee of *Eucalyptus concinna* over low scrub of *Eremophila latrobei* subsp. *filiformis* and mid-dense hummock grass of *Triodia irritans* in sandplain,
45. Open tree mallee of *Eucalyptus glomerosa/E. youngiana* over low scrub of *Acacia ligulata* and dense hummock grass of *Triodia irritans* in sandplain,
46. Open tree mallee of *Eucalyptus youngiana* over heath of *Acacia desertorum* var. *desertorum/A. grasbyi* and low heath of *Aluta maisonneuvei* subsp. *auriculata*/mid-dense hummock grass of *Triodia irritans* in sandplain,
47. Open tree mallee of *Eucalyptus youngiana* over low scrub of *Acacia desertorum* var. *desertorum* and mid-dense hummock grass of *Triodia irritans* in sandplain,
48. Tree mallee of *Eucalyptus youngiana* over low scrub of *Acacia ligulata* and dense hummock grass of *Triodia basedowii* in sandplain,
49. Open tree mallee of *Eucalyptus trivalva* over low scrub of *Acacia pachyacra/Senna artemisioides* subsp. *filifolia* and mid-dense hummock grass of *Triodia irritans* in sandplain,

**Regrowth, modified native vegetation:**

50. Regrowth open low scrub of *Acacia abrupta* over dense hummock grass of *Triodia basedowii* in sandplain,
51. Regrowth open tree mallee of *Eucalyptus youngiana* over low scrub of *Acacia desertorum* var. *desertorum/A. grasbyi* and low heath of *Aluta maisonneuvei* subsp. *auriculata*/mid-dense hummock grass of *Triodia irritans* in sandplain,
52. Regrowth low woodland of *Eucalyptus gongylocarpa* over shrub mallee of *E. youngiana* and mid-dense hummock grass of *Triodia basedowii* in sandplain,
53. Regrowth open tree mallee of *Eucalyptus trivalva* over very open shrub mallee of *E. youngiana* and low heath of *Alyogyne pinoniana/Sida calyxhymenia* in sandplain,

**Eucalypt Woodlands/Mallee Woodlands and Shrublands:**

54. Open low woodland of *Eucalyptus gongylocarpa* over open shrub mallee of *E. youngiana* and mid-dense hummock grass of *Triodia basedowii* on sand dune.

**Clearing Description**

Yamarna Gas Pipeline Project.

APA Operations Pty Ltd proposes to clear up to 770 hectares of native vegetation within an application area of approximately 4,633.38 hectares, for the purpose of a petroleum pipeline. The project is located approximately 20 kilometres south of Laverton, in the Shire of Laverton.

<b>Vegetation Condition</b>	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994);  to:  Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).
<b>Comment</b>	Clearing activities are needed to facilitate the construction and operation of a 198 kilometre gas pipeline from the existing Eastern Goldfields Pipeline to the delivery station at the Gruyere mine site.

### 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 not likely to be at variance to this Principle**

The application area is located within two Interim Biogeographic Regionalisation of Australia (IBRA) regions; the Great Victoria Desert and Murchison (GIS Database). The majority of the application area is located within the Great Victoria Desert bioregion. The vegetation of the Great Victoria Desert and Murchison bioregions are well represented in Western Australia and are considered to be of least concern with regards to conservation status (Department of Natural Resources and Environment, 2002; Government of Western Australia, 2016). The vegetation communities within the application area are typical of the local region and not considered to be unusually diverse (Botanica, 2017). The area proposed to be cleared is not considered to be a remnant of native vegetation (Botanica, 2017; GIS Database).

According to available databases, there are no Threatened Ecological Communities (TEC's) occurring within or near the application area (GIS Database). Botanica (2017) also reported no vegetation communities considered to be a TEC within or near the application area (Botanica, 2017). However, one Priority Ecological Community (PEC) known as the Priority 3 'Mount Jumbo Range Vegetation Complex, Banded Ironstone formation (BIF)' is located within the application area (Botanica, 2017; GIS Database). The Mount Jumbo Range PEC extends in a north-south direction over a large area (approximately 2,528.137 hectares) (GIS Database). According to Botanica (2017), one vegetation type recorded within the application area; Low Forest of *Acacia caesaneura*/*A. incurvaneura* over low scrub of *A. ramulosa* var. *ramulosa*/*Dodonaea rigida*/*Senna* spp. and dwarf scrub of *Ptilotus obovatus* on Banded Ironstone Hill (vegetation type 30), is representative of a BIF community (Botanica, 2017). Botanica (2017) report that approximately 56 hectares (or 1.2% recorded in two distinct areas) of the south-western extent of the flora survey area is representative of BIF associated vegetation assemblages (Botanica, 2017). However, the flora survey area covers a very large area of 4,644 hectares (inclusive of a large corridor width of 200 metres) and the application area is a much smaller area of 770 hectares (Botanica, 2017).

Botanica (2017) reported that vegetation type 30 does not contain a high level of biodiversity (total of 10 families, 14 genera and 20 taxa) and no Threatened or Priority flora. The flora within vegetation type 30 is not considered to be rare or endemic and the flora is considered to be common and widespread in the surrounding area (Botanica, 2017). The flora identified in vegetation type 30 were also recorded in several vegetation types within the proposal area (Botanica, 2017).

The Department of Biodiversity, Conservation and Attractions (DBCA) provided comments on the proposal and DBCA recommend that unless unavoidable, disturbance should remain outside the PEC boundary (DBCA, 2017). DBCA also recommend that where clearing within the PEC boundary is unavoidable then clearing should be minimised to that which is absolutely necessary (DBCA, 2017). APA Group advised that the pipeline corridor route was modified in order to minimise impacts on BIF assemblages (APA Group, 2017). APA Group advised that a much larger clearing area would be required to avoid the entire BIF vegetation assemblage and to realign the pipeline, which would result in additional environmental disturbance (APA Group, 2017). The current pipeline corridor route was therefore chosen to minimise the impacts on the environment (APA Group, 2017).

Botanica (2017) conducted a Level 2 flora and vegetation survey over the application area and identified 54 vegetation types with 325 flora taxa representing 49 families and 134 genera. A search of available databases was undertaken and no records of Threatened or Priority flora were recorded within the application area (GIS Database). The flora and vegetation survey of the application area did not record any Threatened flora species (Botanica, 2017). Four Priority flora species were recorded during the flora survey and these species include *Calytrix praecipua* (P3), *Calytrix warburtonensis* (P2), *Olearia arida* (P4) and *Thryptomene nealensis* (P3) (Botanica, 2017). A previous record of the Priority flora species, *Philotheca tubiflora* (Priority 1) was recorded 40 kilometres east of Laverton at Point Kidman and adjacent to White Cliffs Road (WA Herbarium, 1998-). However, *P. tubiflora* was recorded at this location more than 42 years ago and it is unknown whether or not this species has been verified at this location. There are 13 records of *P. tubiflora* recorded in the region (WA Herbarium, 1998-). According to Botanica (2017a), none of the Priority flora species are endemic to the survey area and all Priority flora species are distributed within the Great Victorian Desert IBRA sub-region and adjacent sub-regions

The Priority flora data recorded below is therefore inclusive of the entire flora survey (4,644 hectares) (Botanica, 2017a). However, not all of the application area will be cleared as part of the proposal. The pipeline

construction corridor right of way (ROW) is also large and up to 30 metres in width and approximately 185 kilometres in length (APA Group Pty Ltd). APA Group has developed a Construction Environmental Plan to manage potential or actual impacts on the environment (APA Group, 2017). Some of these strategies include; avoidance of Priority flora, demarcation of Priority flora as 'no – go' areas, reduction of the ROW to increase the buffer distance near Priority flora where practicable, demarcating and avoiding new locations of Priority flora if recorded and all new locations of Priority flora will be reported to DBCA (APA Group, 2017). If it is necessary to remove Priority flora, APA Group will record and report individuals to be cleared and their locations to DMIRS and DBCA (APA Group, 2017).

Botanica (2017) reported 896 individuals of *C. praecipua* occurring within the flora survey area within vegetation type 1. Vegetation type 1 covers less than 1% of the flora survey area (Botanica, 2017). area within vegetation type 1, which covers less than 1% of the flora survey area (Botanica, 2017). *C. warburtonensis* was recorded by Botanica (2017) at three locations within the flora survey area

None of the Priority flora species are endemic to the area and all Priority flora species were recorded within a 20 kilometre radius of the application area (Botanica, 2017). All of the Priority flora species are distributed within the Great Victoria Desert IBRA sub-region (Botanica, 2017). *C. praecipua* was recorded by Botanica (2017) at 252 locations within the flora survey area, with 896 individuals counted from these locations. Botanica (2017) estimated there are 985 *C. praecipua* individuals remaining from a population size of 1,880 within the local area. There are 28 known records of *C. praecipua* in Florabase, recorded within the Gascoyne, Great Victoria Desert, Little Sandy Desert and Murchison IBRA regions of WA (WA Herbarium, 2017).

Botanica (2017) reported 80 individuals of *C. warburtonensis* from three locations within the flora survey. There are 12 known records of *C. warburtonensis* in Florabase (WA Herbarium, 2017). *C. warburtonensis* is recorded within the Gibson Desert and Great Victoria Desert IBRA regions of WA (WA Herbarium, 2017).

*Olearia arida* was recorded by Botanica (2017) at 121 locations within the flora survey area. There were 176 individuals of the species recorded during the flora survey (Botanica, 2017). There are 12 known records of *O. arida* in Florabase, recorded within the Great Victoria Desert and Murchison IBRA regions of WA (WA Herbarium, 2017).

All of these three species were recorded from vegetation type 1 covers less than 1% of the flora survey area (Botanica, 2017).

Botanica (2017) reported 874 individuals of *T. nealensis* occurring within the flora survey area from 254 locations. This species was recorded within vegetation types 39, 49 and 52 (Botanica, 2017). There are 12 known records of *T. nealensis* in Florabase (WA Herbarium, 2017). *T. nealensis* is recorded within the Great Victoria Desert and Murchison IBRA regions of WA.

Advice was received from DBCA regarding potential impacts to Priority flora species. DBCA (2017). DBCA recommended avoidance of the rocky hill/breakaway habitats where feasible (DBCA, 2017). If clearing of the rocky hill/breakaway habitats could not be avoided, it is recommended that project specific management strategies are developed and implemented to avoid clearing Priority flora species (DBCA, 2017). The final pipeline route has been designed to avoid all Priority flora (APA Group, 2017).

Eleven (introduced) weed species were identified by Botanica (2017) within the application area. Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A search of biological databases revealed records of 161 fauna species within a 25 kilometre area. The fauna survey recorded 51 fauna species, comprising of 40 avifauna species, four reptiles and seven mammals, which included three introduced species. No species of conservation significance were identified during the fauna survey (Botanica, 2017). There are no known records of Threatened fauna within the application area (GIS Database).

The fauna habitats are widespread in the local area and region area and are not restricted to the application area (Botanica, 2017: GIS Database). No conservation significant fauna species are endemic to the region (GIS Database). There is a low probability of conservation significant species being present in the application area as the habitat is not suitable or large areas of suitable habitat are located nearby (Botanica, 2017; GIS Database). The faunal assemblages are unlikely to be different to those found in similar habitat located elsewhere in the region (Botanica, 2017; GIS Database).

The vegetation proposed to be cleared is well represented in the surrounding area and the biological surveys confirm the application area does not contain a high level of biological diversity (Government of Western Australia, 2016; GIS Database). For these reasons it is unlikely to the proposal will result in the clearing of native vegetation that has higher biodiversity values than surrounding, undisturbed vegetation.

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

**Methodology** APA Group (2017)  
Botanica (2017)  
CALM (2002)

DBCA (2017)  
Department of Natural Resources and Environment (2002)  
Government of Western Australia (2016)

GIS Database:

- Threatened Fauna
- Threatened and Priority Flora
- TEC/PEC – Buffer
- TEC/PEC – Boundaries

**(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**

A level 1 fauna survey was conducted over the application area during August and November 2015, September 2016, January and April 2017 by Botanica (2017). The fauna survey recorded 51 fauna species, comprising of 40 avifauna species, four reptiles and seven mammals, which included three introduced species. No species of conservation significance were identified during the fauna survey (Botanica, 2017). There are no known records of Threatened fauna within the application area (GIS Database).

The fauna survey recorded seven broad fauna habitats within the application area (Botanica, 2017). These fauna habitats include:

- Breakaways;
- Clay-Loam Plains;
- Drainage Depressions;
- Quartz/Rocky Plains;
- Rocky Hill Slopes;
- Sandplains; and
- Sand Dunes.

The seven fauna habitats present within the application area are considered to be well represented within the Murchison and Great Victoria Desert bioregions (Botanica, 2017). The majority of the fauna survey area (~50.6% or 2,352 hectares of the survey area) consists of sandplains habitat dominated by *Acacia* forests and woodlands, Eucalypt woodlands, Mallee woodlands and shrublands, regrowth or modified native vegetation (Botanica, 2017). Quartz/Rocky Plains habitat which supports *Acacia* forests and woodlands, *Acacia* open woodlands, *Casuarina* forests and woodlands or Eucalypt woodlands, mallee woodlands and shrublands are also prolific in the fauna survey area (~22.2% or 1,031 hectares of the survey area) (Botanica, 2017).

Although the drainage depression habitat was not extensive over the application area (~6.4 % or 294 hectares of the survey area), the vegetation is suitable habitat for bird species (Botanica, 2017). The main vegetation types which may be suitable for fauna habitat include Vegetation Types 13, 14, 15 and 16 (Botanica, 2017). Birds could potentially use the application area and adjoining areas for foraging, roosting and possibly breeding. However given the high mobility of bird species and the large amount of suitable habitat in the surrounding area, it is unlikely that the proposed clearing will impact avian species or available habitat. The application area does not contain habitats or faunal assemblages that are ecologically significant and the fauna assemblage of the survey area is considered common and typical of the region (Botanica, 2017; GIS Database).

Botanica (2017) report that Brush-tailed Mulgara (*Dasyercus blythii* - Priority 4) and the Long-tailed Dunnart (*Sminthopsis longicaudata* - Priority 4) have the potential to occur within the application. However, no individuals of either fauna species were reported during the fauna survey (Botanica, 2017). Potential foraging habitat recorded within the application area for the Brush-tailed Mulgara consists of sand plains, sand dunes and clay/loam plains (Botanica, 2017). Potential foraging habitat recorded within the application area for the Long-tailed Dunnart consists of breakaways, rocky hillslopes and quartz/rocky plains (Botanica, 2017). It is unlikely that either of these two species would depend on this area, given the large areas of suitable fauna habitat located nearby and in surrounding areas (Botanica, 2017; GIS Database).

The fauna survey did not record any Threatened fauna species within the application area and no fauna habitat in the application area is considered to be critical to the survival of conservation significant fauna species (Botanica, 2017). The linear nature of the clearing proposal is not likely to have significant local impacts, however, it will act as an invasion pathway for feral species such as cats and foxes. Given the linear nature of the clearing, the low probability of conservation significant species being present in the application area and that large areas of suitable habitat in good condition are located nearby, it is unlikely that the application area contains habitat critical for fauna species. The proposed clearing will not impact significant fauna habitat.

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

**Methodology** Botanica (2017)

GIS Database:

- Threatened Fauna

**(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**

A search of available databases was undertaken and no Threatened flora have been recorded in the application area (GIS Database). A flora survey was also undertaken by Botanica (2017) which did not record species of Threatened flora in the application area. The native vegetation proposed to be cleared is not likely to contain or is not necessary for the continued existence of rare flora.

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

**Methodology Botanica (2017)**

GIS Database:  
- Threatened and Priority Flora

**(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**

A search of the available databases showed that there are no known Threatened Ecological Communities (TEC's) located within the application area (GIS Database). Botanica (2017) reported no vegetation communities considered to be a TEC within or near the application area as a result of the flora survey (Botanica, 2017).

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

**Methodology Botanica (2017)**

GIS Database:  
- TEC/PEC - Buffers  
- TEC/PEC - Boundaries

**(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**

The application areas fall within the Murchison and Great Victoria Desert Interim Biogeographic Regionalisation of Australia (IBRA) bioregions (GIS Database). The vegetation within the application area is recorded as:

- 18: Low woodland; mulga (*Acacia aneura*);
- 24: Low woodland; *Allocasuarina cristata*;
- 84: Hummock grasslands, open low tree & mallee steppe; marble gum & mallee (*Eucalyptus youngiana*) over hard spinifex *Triodia basedowii* between sandhills;
- 1239: Hummock grasslands, open medium tree & mallee steppe; marble gum & mallee (*E. youngiana*) over hard spinifex *Triodia basedowii* on sandplain; and
- 1446: Succulent steppe with scrub; mulga over bluebush.

The above Beard vegetation associations retain approximately 99% or above of the pre-European extent at the state level and bioregional levels (Government of Western Australia, 2016). The areas proposed to be cleared are not a significant remnant of native vegetation.

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

**Methodology Government of Western Australia (2016)**

GIS Database:  
- IBRA WA (Regions - Sub Regions)  
- 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 at variance to this Principle**

According to the available databases, several, minor, ephemeral watercourses intersect the application area (GIS Database). The proposed pipeline route occurs over native vegetation associated with drainage depressions. Based on vegetation mapping by Botanica (2017), five vegetation types are identified as growing in association with a watercourse (Botanica, 2017). These vegetation types include type 12 (*Acacia* Forests and Woodlands; Low woodland of *Acacia aptaneura*/*Acacia caesaneura* over open low scrub of *Eremophila latrobei* subsp. *latrobei*), types 13, 14 and 15 (*Acacia* Open Woodlands; open low woodland of *Acacia incurvaneura* and open low woodland of *Acacia caesaneura*/*A. macraneura*/*A. ayersiana* and open low

woodland of *Acacia caesaneura/A. macraneura /A. ayersiana*) and type 16 (Mallee Woodlands and Shrublands/ *Acacia* Forests and Woodlands; very open tree mallee of *Eucalyptus lucasii*/Low forest of *Acacia burkittii/A. incurvaneura/A. caesaneura*). The proposed clearing is unlikely to have a significant impact on riparian vegetation within the application area.

However, the drainage depression vegetation types consist of a small proportion (295 hectares or 6.4%) of the application area (4,633.38 hectares) (Botanica, 2017). These watercourses are only likely to inundate following significant rainfall or cyclonic events. The proposed clearing is unlikely to result in any significant impact to any watercourse or wetland provided natural surface water flow patterns are not disturbed.

Based on the above, the proposed clearing is at variance to this Principle.

**Methodology** Botanica (2017)

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**

Northcote, et al. (1960-68) describes soils on plains in the application area as shallow, red earths and earthy loams underlain by a red-brown hardpan (GIS Database). Soils on gently undulating to low, hilly pediments and traversed by numerous seasonal streams as shallow, earthy loams with shallow red earths underlain by red-brown hardpan (GIS Database). These soils do not readily erode but may be subjected to minor wind erosion once vegetation has been cleared. Localised surface water run-off may occur following heavy rainfall events and if surface water drainage on-site is not managed. It is unlikely the proposal will change soil salinity levels or impact on-site or off-site nutrient export. Botanica (2017) have recommended a number of management measures to mitigate potential clearing impacts including maintaining surface water flows by using culverts, floodways, sediment fences and berms (Botanica, 2017). Botanica (2017) have also recommended that the construction corridor is rehabilitated as soon as practicable to stabilise disturbed areas (Botanica, 2017).

The pipeline location intersects several land systems (GIS Database). The majority of the application area lies within the Bullimore land system which is well vegetated and not subject to erosion (Pringle et al., 1994; GIS Database). The application area also intersects with a small portion of the Wilson land system (GIS Database). The Wilson land system consists of large creeks with extensive distributary fans supporting mulga and halophytic shrublands (Pringle et al., 1994). The vegetation of the Wilson land system has been severely degraded and eroded from grazing pressure (Pringle et al., 1994). However, the linear nature of the clearing required for the gas pipeline is unlikely to cause land degradation impacts to any of the land systems recorded in the application area.

It is unlikely that the amount of clearing required for the proposal (770 hectares) within a 4,633.38 hectare boundary area will cause adverse land degradation.

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

**Methodology** Botanica (2017)  
Northcote, et al. (1960-68)  
Pringle et al (1994)

GIS Database:  
-Groundwater Sallinity, Statewide  
- Hydrography, linear  
- Rangelands

**(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 not at variance to this Principle**

The application area does not lie within any conservation areas or DBCA managed lands (Botanica, 2017; GIS Database). The nearest conservation area is Yeo Lake Nature Reserve which is located approximately 13 kilometres east of the application area (GIS Database). As this conservation area is located a considerable distance from the application area, the proposed clearing is not likely to have any impacts on the environmental values of this or any other conservation area.

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

**Methodology** Botanica (2017)

GIS Database:  
- DPaW Tenure



**(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**

The application area is not located within a Public Drinking Water Source Area (GIS Database). The annual evaporation rate (2,400 millimetres) significantly exceeds the annual average rainfall (190 millimetres) for the local area (BoM, 2017; GIS Database). Any surface water within the application area is likely to only remain for short periods following significant rainfall events. The proposed clearing is not likely to cause deterioration in the quality of any surface water within or outside of the application area.

With high annual evaporation rates and low annual rainfall, there is little recharge into regional groundwater. The proposed clearing is unlikely to further deteriorate the quality of underground water (GIS Database).

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

**Methodology** BoM (2017)  
Botanica (2017)

GIS Database:  
- Groundwater Salinity, Statewide  
- Hydrography, linear  
- Public Drinking Water Source Areas

**(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**

With low average annual rainfall and a high average annual evaporation rate there is likely to be little surface flow during normal seasonal rains (BoM, 2017). Whilst large rainfall events may result in flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding. Botanica (2017) have recommended several surface water management measures to control potential flooding or runoff from cleared areas (Botanica, 2017).

Given the linear nature of the clearing and the proposed clearing area in relation to the size of the application area, the clearing is not likely to increase the potential for flooding on a local or catchment scale.

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

**Methodology** BoM (2017)  
Botanica (2017)

GIS Database:  
- Hydrography, linear

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

**Comments** Three Native Title claims have been lodged over the area under application (DPLH, 2017). However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act, 1993*.

There are two registered Aboriginal Sites of Significance within the application area (DPLH, 2017). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act, 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The application was advertised on 17 July 2017 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. There were no submissions received.

**Methodology** DPLH (2017)

**4. References**

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- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
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- Pringle, H. J. R, Van Vreeswyk, A. M. E and Gilligan, S. A (1994) An Inventory and Condition Survey of Rangelands in the North-eastern Goldfields, Western Australia, No. 87, Department of Agriculture, Government of Western Australia, Perth, Western Australia.
- WA Herbarium (2017) FloraBase - The Western Australian Flora. Flora Species Search, Department of Parks and Wildlife, Western Australian Herbarium. <http://florabase.dpaw.wa.gov.au/> (Accessed 4 September 2017).

## 5. Glossary

### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>DAA</b>	Department of Aboriginal Affairs, Western Australia (now DPLAH)
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia (now DPIRD)
<b>DBCA</b>	Department of Biodiversity Conservation and Attractions, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia (now DBOTANICAA and DWER)
<b>DotEE</b>	Department of the Environment and Energy, Australian Government
<b>DER</b>	Department of Environment Regulation, Western Australia (now DWER)
<b>DMIRS</b>	Department of Mines, Industry Regulation and Safety, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia (now DMIRS)
<b>DPIRD</b>	Department of Primary Industries and Regional Development, Western Australia
<b>DPLAH</b>	Department of Planning, Lands and Heritage, Western Australia
<b>DRF</b>	Declared Rare Flora
<b>DotEE</b>	Department of the Environment and Energy, Australian Government
<b>DoW</b>	Department of Water, Western Australia (now DWER)
<b>DPaW</b>	Department of Parks and Wildlife, Western Australia (now DBOTANICAA)
<b>DWER</b>	Department of Water and Environmental Regulation, Western Australia
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EP Act</b>	<i>Environmental Protection Act 1986</i> , Western Australia
<b>EPBOTANICA Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>PEC</b>	Priority Ecological Community, Western Australia
<b>RIWI Act</b>	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
<b>TEC</b>	Threatened Ecological Community

### Definitions:

{DPaW (2017) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

<b>T</b>	<p><b>Threatened species:</b> Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).</p> <p><b>Threatened fauna</b> is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.</p> <p><b>Threatened flora</b> is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.</p> <p>The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.</p>
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- CR Critically endangered species**  
Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EN Endangered species**  
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- VU Vulnerable species**  
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EX Presumed extinct species**  
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.
- IA Migratory birds protected under an international agreement**  
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD Conservation dependent fauna**  
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS Other specially protected fauna**  
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P Priority species**  
Species which are poorly known; or  
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.
- P1 Priority One - Poorly-known species:**  
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
- P2 Priority Two - Poorly-known species:**  
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
- P3 Priority Three - Poorly-known species:**  
Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
- P4 Priority Four - Rare, Near Threatened and other species in need of monitoring:**  
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special

protection, but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

**Principles for clearing native vegetation:**

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.
- (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.
- (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.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (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.
- (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.
- (j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.