



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8146/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: APA Operations Pty Ltd

1.3. Property details

Property: Mining Lease 36/53
Mining Lease 36/62
Mining Lease 36/63
Mining Lease 36/273
Mining Lease 36/367
Mining Lease 36/384
Mining Lease 36/391
Miscellaneous Licence 36/224
Miscellaneous Licence 36/227
Local Government Area: Shire of Leonora
Colloquial name: Agnew Gas Pipeline Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
96		Mechanical Removal	Gas pipeline and associated activities.

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 20 September 2018

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description The vegetation of the application area is broadly mapped as the following Beard vegetation associations:

18: Low woodland; mulga (*Acacia aneura*);
39: Shrublands; mulga scrub; and
109: Hummock grasslands, shrub steppe; *Eucalyptus youngiana* over hard spinifex (GIS Database).

Flora and vegetation surveys were conducted over the application area by Astron during October 2012, and Stantec during May 2018. The following 17 vegetation associations were recorded within the application area (Astron, 2012; Stantec, 2018):

Low Hills (Astron, 2012)

Hi01: *Acacia ?sibirica* low open woodland over *Acacia ?fuscanaura* and *Acacia* sp. 'resinous margins' tall shrubland over *Acacia ?fuscanaura* shrubland over *Aristida contorta* very open tussock grassland;

Hi02: *Acacia ?fuscanaura* and *Acacia quadrimarginea* tall open shrubland over *Acacia ?fuscanaura* open shrubland over *Aristida contorta* open tussock grassland;

Plains (Astron, 2012)

PI01: *Acacia ?fuscanaura* (*Acacia caesaneura*) scattered low open woodland to scattered low trees over *Acacia ?fuscanaura* tall open shrubland over *Acacia ?fuscanaura*, *Acacia ?sibirica*, *Acacia ?macraneura*, and *Eremophila forrestii* subsp. *?forrestii* open shrubland *?Eriachne* sp. and *Aristida contorta* very open tussock grassland;

PI02: *Acacia ?macraneura* or *Acacia ?sibirica* low open woodland to scattered low trees to tall open shrubland to scattered tall trees over *Acacia ?macraneura*, *Acacia ?sibirica*, and *Acacia tetragonophylla* tall open shrubland over *Eremophila fraseri* subsp. *fraseri* open shrubland to scattered shrubs over *Aristida contorta* very open tussock grassland;

PI03: *Acacia ?fuscanaura* low woodland over *Eremophila ?forrestii* scattered shrubs over *Eremophila latrobei* subsp. *latrobei* scattered shrubs over *Acacia ?macraneura* and *Acacia* sp. 'resinous margins' open shrubland over *Aristida contorta* open tussock grassland;

PI04: *Acacia ?caesaneura* and *Acacia* sp. 'resinous margins' tall open shrubland over *Acacia ?sibirica* and *Eremophila forrestii* subsp. *?forrestii* open shrubland;

PI05: *Eucalyptus kingsmillii* subsp. *kingsmillii* scattered trees over *Acacia ?caesaneura* and *Acacia ?fuscaeneura* tall open shrubland over *Triodia basedowii* hummock grassland;

Shrubland (Stantec, 2018)

AiAspp.AsEfEeEm: *Acacia incurvaneura* (*Acacia craspedocarpa* (hybrid) and *Acacia caesaneura*) tall shrubland over *Acacia sibirica* open shrubland to shrubland over *Eremophila forrestii* low shrubland over *Eragrostis eriopoda* and *Eriachne mucronata* open tussock grassland;

Aspp.EoaDrSsPoAc: *Acacia quadrimarginea*, *Acacia aneura*, *Acacia macraneura* and *Acacia burkittii* tall open shrubland to tall shrubland over *Eremophila oldfieldii* subsp. *angustifolia*, *Dodonaea rigida* and *Scaevola spinescens* open shrubland over *Ptilotus obovatus* low open shrubland over *Aristida contorta* very open tussock grassland;

AiEsp.SsMPsEm: *Acacia incurvaneura* tall open shrubland over *Eremophila fraseri* subsp. *?fraseri*, *Senna* sp. Meekatharra, *Eremophila latrobei* subsp. *?latrobei*, *Ptilotus schwartzii* and *Eremophila ?margarethae* open shrubland over *Eriachne mucronata* very open tussock grassland;

AnEoaPoSIMtSeAcEc: *Acacia aneura* tall shrubland over *Eremophila oldfieldii* subsp. *?angustifolia* open shrubland to shrubland over *Ptilotus obovatus* and *Solanum lasiophyllum* low shrubland over *Maireana triptera* and *Sclerolaena eriacantha* low chenopods over *Aristida contorta* and *Enneapogon caeruleus* open tussock grassland;

AiArElEsEm: *Acacia incurvaneura* and *Acacia ramulosa* subsp. *linophylla* (*Acacia caesaneura* and *Acacia aneura*) tall shrubland to open scrub over *Eremophila latrobei* subsp. *latrobei* and *Eremophila spectabilis* low shrubland to open low heath over *Eriachne mucronata* open grassland;

EffAtEmPoAcCa: *Eremophila fraseri* subsp. *fraseri* and *Acacia tetragonophylla* open shrubland over *Eremophila ?margarethae* and *Ptilotus obovatus* open low shrubland over *Aristida contorta* and *Cymbopogon ambiguus* open tussock grassland;

Drainage Line (Stantec, 2018)

AsppEspSeEpAc?Ta: *Acacia quadrimarginea*, *Acacia caesaneura* and *Acacia tetragonophylla* tall open shrubland over *Eremophila fraseri* subsp. *fraseri* open shrubland over *Eremophila serrulata* and *Sida ?ectogama* low open shrubland over *Enneapogon polyphyllus* and *Aristida contorta* very open to open tussock grassland and *?Tragus australianus* very open grasses;

Rocky/Outcropping (Stantec, 2018)

AqAsppC?dEffAc: *Acacia quadrimarginea* open shrubland to tall shrubland over *Acacia sibirica*, *Acacia ayersiana* (narrow phyllode variant) and *Acacia ramulosa* subsp. *ramulosa* open shrubland over *Calytrix ?desolata* and *Eremophila forrestii* subsp. *forrestii* open low shrubland over *Aristida contorta* very open tussock grassland;

Acacia over spinifex (Stantec, 2018)

EkE?AsppTbMp: *Eucalyptus kingsmillii* and *Eucalyptus lucasii* very open shrub mallee over *Acacia caesaneura* (*Acacia ayersiana* (hybrid)) tall shrubland over *Acacia ramulosa* var. *linophylla* (*Acacia ramulosa* ?var.) open shrubland over *Triodia basedowii* hummock grassland and *Monacather paradoxus* very open tussock grasses; and

Open Plain (Stantec, 2018)

EffEm: *Eremophila fraseri* subsp. *fraseri* open shrubland over *Eremophila margarethae* open low shrubland.

Clearing Description

Agnew Gold Mine

APA Operations Pty Ltd proposes to clear up to 96 hectares of native vegetation within a boundary of approximately 514 hectares, for the purpose of a gas pipeline and associated activities. The project is located approximately 10 kilometres southwest of Leinster, within the Shire of Leonora.

Vegetation Condition

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994);

To

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

Comment

The vegetation condition was derived from a vegetation survey conducted by Astron (2012) and Stantec (2018).

The proposed clearing is for a new lateral gas pipeline approximately 25 kilometres in length, linking the Goldfields gas pipeline to the Agnew Gold Mine that is owned and operated Gold Fields Limited. The pipeline project will include a metering station, pressure regulation and heating, and ancillary infrastructure including access roads, truck turning areas, general laydown, and a temporary camp and offices.

Two biodiversity surveys have been carried out over the application area by Astron (2012) and Stantec (2018). The first survey that was undertaken by Astron (2012) covered the full extent of the proposed gas pipeline route. However, slight changes to the route have since been made. Stantec undertook an additional survey in 2018 to ensure that the entire application area has been surveyed (APA 2018b).

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 clearing permit application area is located within the Eastern Murchison subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Murchison Bioregion (GIS Database). The Eastern Murchison subregion is characterised by internal drainage and elevated red desert sandplains, dominated by Mulga Woodland with hummock grasslands and saltbush or *Halosarcia* (now known as *Tecticornia*) shrublands (CALM, 2002).

The vegetation present within the application area was considered to range from 'Excellent' to 'Completely Degraded'. The majority of the vegetation was in Excellent condition, with the Completely Degraded vegetation attributed to a small area (3.62 hectares) within the western portion of the application area that has previously undergone clearing for roads associated with the existing Agnew Gold Mine (Astron, 2012; Stantec, 2018).

The desktop study found no Threatened Flora or Threatened Ecological Communities (TECs) recorded within 20 kilometres of the application area (Stantec, 2018; GIS Database). No flora and vegetation relating to any TECs or Priority Ecological Communities (PECs) were present within the application area (Astron, 2012; Stantec, 2018; GIS Database).

The field surveys identified 118 flora species from 56 genera and 23 families within 17 vegetation associations (Astron, 2012; Stantec, 2018). The vegetation of the application area is common and widespread within the region and is not expected to comprise a higher level of diversity than adjacent areas (Astron, 2012; Stantec, 2018). Thirteen Priority flora species, including three Priority 4 species, eight Priority 3 species, and two Priority 1 species, were identified as potentially occurring within the application area from database searches (DBCA, 2018; Stantec, 2018). Two Priority flora species were recorded from within the application area (Stantec, 2018);

- *Eremophila pungens* (Priority 4) (between 152 to 401 plants); and
- *Grevillea inconspicua* (Priority 4) (between 82 to 222 plants).

Eremophila pungens is known from multiple records in the Murchison, Gascoyne and Great Victoria Desert bioregions, and *Grevillea inconspicua* is known from multiple records throughout the Murchison bioregion (Western Australian Herbarium, 2018). The alignment of the proposed gas pipeline does not intersect any individuals of either Priority species recorded during the field survey (APA, 2018a). Even if damage or mortality of some individuals do occur, it is unlikely that the proposed clearing will have a significant impact on these Priority flora species at the regional level.

One weed species, Buffell Grass (*Cenchrus ciliaris*), was recorded during the flora survey (Astron, 2012). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

During the field surveys, Astron (2012) identified three broad fauna habitat types, and Stantec (2018) identified six broad habitat types within the application area. The desktop study identified a total of 272 species of native vertebrate fauna that have the potential to occur within the application area. Of these 272 species, 28 are listed as conservation significant taxa. However, the majority of the fauna habitats identified are widespread in the region and is not likely to support a higher level of fauna diversity than adjacent areas (APA, 2018b; Astron, 2012).

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

Methodology

APA (2018a)
APA (2018b)
Astron (2012)
CALM (2002)
DBCA (2018)
Stantec (2018b)
Western Australian Herbarium (2018)

GIS Database:

- IBRA Australia
- Pre-European Vegetation
- Threatened and Priority Flora
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers
- Threatened Fauna

(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 may be at variance to this Principle

Level 1 fauna surveys were undertaken over the application area (Astron, 2012; Stantec, 2018). Astron (2012) recorded three broad fauna habitat types;

- Plain with *Acacia aneura* open woodland over tussock grassland on sandy clay or clay, with some gravelly sandy clay;
- Plain with *Acacia aneura* groves over hummock grassland on clay; and
- Breakaway/hill with very open *Acacia aneura* woodland over tussock grassland on loamy sandy clay.

Stantec (2018) recorded five broad fauna habitat types;

- Shrubland;
- Drainage line;
- Rocky/outcropping;
- *Acacia* over spinifex; and
- Open Plains.

The desktop survey identified the following conservation significant fauna to potentially occur within the application area (Astron, 2012; Stantec, 2018). These include;

- Malleefowl (*Leipoa ocellata*) – Vulnerable;
- Great desert skink (*Liopholis kintorei*) – Vulnerable;
- Striated Grasswren (Inland) (*Amytormis striatus* subsp. *striatus*) – Priority 4;
- Brush-tailed Mulgara (*Dasymercus blythii*) – Priority 4;
- Long-tailed Dunnart (*Sminthopsis longicaudata*) – Priority 4;
- Peregrine falcon (*Falco peregrinus*) – Schedule 7; and
- Fork-tailed swift (*Apus pacificus*) – Migratory.

Additionally, one conservation significant invertebrate species was identified during the desktop survey as potentially occurring within the application area, *Idiosoma clypeatum* (Priority 3; formerly considered analogous with the Shield-back Spider, *Idiosoma nigrum*) (Stantec, 2018).

However, none of the above conservation significant fauna species were identified during the field surveys (Astron, 2012; Stantec, 2018), and none have previously been recorded within a 20 kilometre radius of the application area (DBCA 2018; GIS Database).

Of the above fauna habitat types identified, the rocky/outcropping and *Acacia* over spinifex habitat types were considered to have the highest potential significance to native fauna (Stantec, 2018). The rocky/outcropping habitat type provides a limited, unique and complex structure within the local area. The outcropping crevices and pockets may provide shelter to the Great desert skink, Long-tailed Dunnart, Brush-tailed mulgara, and other small native fauna (Stantec, 2018). Potential impacts to the rocky/outcropping habitat type as a result of the proposed clearing may be minimised by a condition excluding a portion of this habitat type from the permitted area.

The *Acacia* over spinifex habitat type is characterised by a lack of disturbance, presence of hummocks and woody debris that may provide suitable habitat for a variety of small fauna species including the Brush-tailed Mulgara. The drainage line habitat is also considered to provide some shelter for a range of fauna, typically following significant rainfall events (Stantec, 2018). The remaining fauna habitat types identified are considered widespread and common throughout the region, and not restricted to the application area (Astron, 2012).

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.

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

Methodology Astron (2012)
Stantec (2018)

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

There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of the application area did not record any species of Threatened flora (Astron, 2012; Stantec, 2018).

The vegetation associations within the application area are common within the region (Astron, 2018; Stantec, 2018; GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened (rare) flora.

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

Methodology Astron (2012)
Stantec (2018)

GIS Database:
- Pre-European Vegetation
- 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**

There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the application area (GIS Database).

A flora and vegetation survey of the application area did not identify any TECs (Astron, 2012; Stantec, 2018).

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

Methodology Astron (2012)
Stantec (2018)

GIS Database:
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers

(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 area falls within the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Murchison Bioregion (Government of Western Australia, 2018). The application area is broadly mapped as Beard vegetation associations 18: Low woodland; mulga (*Acacia aneura*), 39: Shrublands; mulga scrub; and 109: Hummock grasslands, shrub steppe; *Eucalyptus youngiana* over hard spinifex (GIS Database). Approximately 99% of the pre-European extent of each of these vegetation associations remains uncleared at both the state and bioregional level (Government of Western Australia, 2018). The proposed clearing will not clear any vegetation that is considered a remnant (GIS Database). Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DBCA managed lands
IBRA Bioregion – Murchison	28,120,586	28,044,823	~99	Least Concern	7.78
Beard vegetation associations – WA					
18	19,892,306	19,843,729	~99	Least Concern	6.62
39	6,613,567	6,602,578	~99	Least Concern	12.02
109	949,306	948,337	~99	Least Concern	11.37
Beard vegetation associations – Murchison Bioregion					
18	12,403,172	12,363,252	~99	Least Concern	4.96
39	1,148,400	1,138,064	~99	Least Concern	3.56
109	310,285	309,324	~99	Least Concern	24.44

- * Government of Western Australia (2018)
- ** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Government of Western Australia (2018)

GIS Database:
- IBRA Australia
- Imagery
- 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 may be at variance to this Principle

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Numerous minor non-perennial waterlines dissect the application area and throughout the local area (GIS Database). These waterlines are expected to flow during high rainfall periods (APA, 2018b).

One vegetation association, AsppEsppSeEpAc?Ta, was described in the field survey as vegetation that could potentially be considered as growing in association with a watercourse (Stantec, 2018). This vegetation association covers approximately 3.26 hectares within the application area of approximately 514 hectares (Stantec, 2018).

This vegetation association may provide habitat for native fauna when seasonally flooded (Stantec, 2018). Whilst the proposed clearing will impact riparian vegetation, it is common in the local area and the vegetation is not likely to be significant for native fauna (GIS Database). Several of the minor waterlines have already been impacted by an existing road that runs through the application area (GIS Database). Potential impacts to riparian vegetation may be managed by a watercourse management condition.

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

Methodology APA (2012b)
Stantec (2018)

GIS Database:
- DoW Surface Water Lines
- Hydrography, Lakes
- 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 application area lies within the Bevon, Bullimore, Desdemona, Jundee, Tiger and Violet land systems; and to a lesser extent, within the Nubev land system (GIS Database). These land systems have been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Primary Industries and Regional Development).

The Bevon land system is described as irregular low ironstone hills with stony lower slopes supporting mulga shrublands. Minor areas with texture contrast on breakaway footslopes and narrow drainage tracts are susceptible to soil erosion, particularly if perennial shrub cover is substantially reduced or the soil surface is disturbed (Pringle et al., 1994).

The Bullimore land system is described as extensive sandplains supporting spinifex hummock grasslands. Wind erosion may occur after removal of vegetation, however, stabilisation is usually rapid following rain and consequent regeneration of vegetation (Pringle et al., 1994).

The Desdemona land system is described as extensive plains with deep sandy or loamy soils, supporting mulga and wanderie grasses. This land system is generally not susceptible to soil erosion (Pringle et al., 1994).

The Jundee land system is described as hardpan plains with ironstone gravel mantles, supporting mulga shrub lands. The gravel mantles provide effective protection against soil erosion (Pringle et al., 1994).

The Tiger land system is described as gravelly hardpan plains and sandy banks with mulga shrubland and wanderie grasses. This land system is generally not susceptible to soil erosion (Pringle et al., 1994).

The Violet land system is described as undulating stony and gravelly plains and low rises, supporting mulga shrublands. This land system is generally not susceptible to erosion. However, removal of the stony mantles can make soils moderately susceptible to water erosion (Pringle et al., 1994).

The Nubev land system is described as gently undulating stony plains, minor limonitic low rises and drainage floors, supporting mulga and halophytic shrublands. Drainage zones are moderately susceptible to soil erosion, particularly where perennial shrub cover is substantially reduced. Disturbance of the protective stone mantle on saline stony plains is also likely to initiate water erosion (Pringle et al., 1994).

Given that the majority of the application area lies within land systems that are generally not susceptible to erosion, the proposed clearing of up to 96 hectares of native vegetation within a boundary of approximately 514 hectares for the purpose of a gas pipeline, is unlikely to cause appreciable land degradation. The potential impacts from erosion on the above land systems that are susceptible to erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

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

Methodology Pringle et al. (1994)

GIS Database:
- Landsystem Rangelands
- Soils, Statewide

(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 likely to be at variance to this Principle**

There are no conservation areas in the vicinity of the application area. The nearest DBCA managed land is the Wanjarri Nature Reserve which is located approximately 58 kilometres north of the application area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any conservation area.

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

Methodology GIS Database:
- DBCA Legislated Lands and Waters

(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**

There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Numerous minor waterlines that occur within the region are dry for most of the year, only flowing briefly immediately following significant rainfall. Surface water run-off in these significant rainfall events is likely to be as sheet flow towards the existing natural drainage lines within the Lake Carey catchment area (GIS Database). Therefore, the proposed clearing is unlikely to result in significant changes to surface water flows.

The groundwater of the application area is fresh to brackish with 500 – 1,000 total dissolved solids (TDS). Given the small size of the area to be cleared (96 hectares) in relation to the size of the Lake Carey catchment area (11,378,092 hectares), the proposed clearing is unlikely to cause deterioration in the quality of groundwater.

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

Methodology GIS Database:
- Groundwater Salinity, Statewide
- Hydrography, Linear
- Hydrographic Catchments - Catchments
- 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**

The climate of the region is arid, with an average rainfall of approximately 266 millimetres per year and total evaporation rate of approximately 3,200 millimetres per year (BOM, 2018; Pringle et al., 1994). There are no permanent water courses or waterbodies within the application area, however numerous minor non-

perennial waterlines intercepts the application area (GIS Database).

Remnant tropical cyclones from the north-west can occasionally bring heavy rains to the region in the summer months (Pringle et al., 1994). Whilst temporary localised flooding may occur briefly following heavy rainfall events, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding in the region.

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

Methodology BOM (2018)
Pringle et al. (1994)

GIS Database:
- DoW Surface Water Lines
- Hydrography, linear

Planning Instrument, Native Title, previous EPA decision or other matter.

Comments

The clearing permit application was advertised on 20 August 2018 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. No submissions were received in relation to this application.

There is one native title determination (WC2011/007) and one native title claim (WC1999/010) over the area under application (DPLH, 2018). This claim has been registered with the National Native Title Tribunal on behalf of the claimant groups. 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 several registered Aboriginal Sites of Significance within the application area (DPLH, 2018). 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.

Methodology DPLH (2018)

4. References

- APA (2018a) Additional information received in relation to Clearing Permit Application CPS 8146/1. APA Operations Pty Ltd, Western Australia.
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- BOM (2018) Climate statistics for Australian Locations Leinster Aero. Bureau of Meteorology.
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- DPLH (2018) Aboriginal Heritage Enquiry System. Department of Planning, Lands and Heritage.
<http://maps.daa.wa.gov.au/AHIS/> (Accessed 4 September 2018).
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Government of Western Australia (2018) 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions.
<https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Pringle, H.J.R., Van Vreeswyk, A.M.E., Gillian, S.A. (1994) An Inventory and Condition Survey of Rangelands in the north-eastern Goldfields, Western Australia. Department of Agriculture, Western Australia.
- Stantec (2018) Flora and Fauna Survey: Agnew Gold Mine Camp, Power Plant, Airport, Wind Farm and Pipeline. Report prepared by Stantec Australia Pty Ltd, for Gold Fields Australia Pty Ltd, June 2018.
- Western Australian Herbarium (2018). FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (Accessed 5 September 2018).

5. Glossary

Acronyms:

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

Definitions:

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

T	Threatened species: 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). Threatened fauna is that subset of ‘Specially Protected Fauna’ declared to be ‘likely to become extinct’ pursuant to section 14(4) of the <i>Wildlife Conservation Act 1950</i> . Threatened flora 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 <i>Wildlife Conservation Act 1950</i> . 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.
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 <i>Wildlife Conservation Act 1950</i> , 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 <i>Wildlife Conservation Act 1950</i> , 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 <i>Wildlife Conservation Act 1950</i> , 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.