



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 2868/2
Permit holder:	AARNet Pty Ltd
Duration of Permit:	28 February 2009 – 28 February 2017

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

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of fibre optic cable installation.

2. Land on which clearing is to be done

Clearing authorised under this permit is to be done within multiple land parcels and road reserves within the Shires of Mullewa and Murchison.

3. Area of Clearing

(a) The Permit Holder must not clear more than 7 hectares of native vegetation within the areas hatched yellow on attached Plans 2868/2a, 2868/2b, 2868/2c, 2868/2d, 2868/2e, 2868/2f, 2868/2g, 2868/2h, 2868/2i, 2868/2j and 2868/2k.

(b) Any clearing undertaken in accordance with this Permit shall not exceed 10 metres in width.

4. Clearing authorised

(a) This Permit authorises the permit holder to clear native vegetation for activities to the extent that the permit holder has the power to clear native vegetation for those activities under the *Telecommunications Act 1997* or any other written law.

5. Clearing not authorised

This Permit does not authorise the permit holder to clear native vegetation where:

(a) it does not have lawful authority to access land; or

(b) it does not have the power to clear native vegetation under the *Telecommunications Act 1997* or any other written law.

6. Application

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

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

7. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

8. Weed control

(a) When undertaking any clearing or other activity pursuant to this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of weeds:

- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (ii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

(b) At least once in each 12 month period for the term of this Permit, the Permit Holder must remove or kill any weeds growing within areas cleared under this Permit.

9. Fauna management

(a) Prior to undertaking any clearing authorised under this Permit, the areas shall be inspected by a *fauna specialist* who shall identify habitats suitable to be utilised by fauna species listed below:

- (i) *Calyptorhynchus latirostris* (Carnaby's Black-Cockatoo);
- (ii) *Burhinus grallarius* (Bush Stone-curlew);
- (iii) *Idiosoma nigrum* (Shield-backed Trapdoor Spider);
- (iv) *Leipoa ocellata* (Malleefowl)

(b) Where *Calyptorhynchus latirostris* (Carnaby's Black-Cockatoo) nesting habitat is identified in relation to condition 9(a)(i) of this Permit, the Permit Holder shall ensure that no clearing of identified *Calyptorhynchus latirostris* (Carnaby's Black-Cockatoo) nesting habitat occurs, unless approved by the CEO.

(c) Where *Burhinus grallarius* (Bush Stone-curlew) nesting habitat is identified in relation to condition 9(a)(ii) of this Permit, the Permit Holder shall ensure that no clearing occurs within 50 metres of identified *Burhinus grallarius* (Bush Stone-curlew) nesting habitat, unless approved by the CEO.

(d) Where *Idiosoma nigrum* (Shield-backed Trapdoor Spider) burrows are identified in relation to conditions 9(a)(iii) of this Permit, the Permit Holder shall ensure that no clearing occurs within 20 metres of the identified *Idiosoma nigrum* (Shield-backed Trapdoor Spider) burrows, unless approved by the CEO.

(e) Where *Leipoa ocellata* (Malleefowl) mounds are identified in relation to conditions 9(a)(iv) of this Permit, the Permit Holder shall ensure that no clearing occurs within 50 metres of the identified *Leipoa ocellata* (Malleefowl) mounds, unless approved by the CEO.

PART IV – RECORD KEEPING AND REPORTING

10. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).

- (b) In relation to fauna management pursuant to condition 9 of this Permit:
 - (i) the location of each habitat identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; and
 - (ii) the species of fauna reasonably likely to utilise, or that have been observed utilising, the habitat/s.

11. Reporting

- (a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 10 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

- (b) Prior to 22 November 2016, the Permit Holder must provide to the CEO a written report of records required under condition 10 of this Permit where these records have not already been provided under condition 11(a) of this Permit.

Definitions

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

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the Agricultural and Related Resources Protection Act 1976.

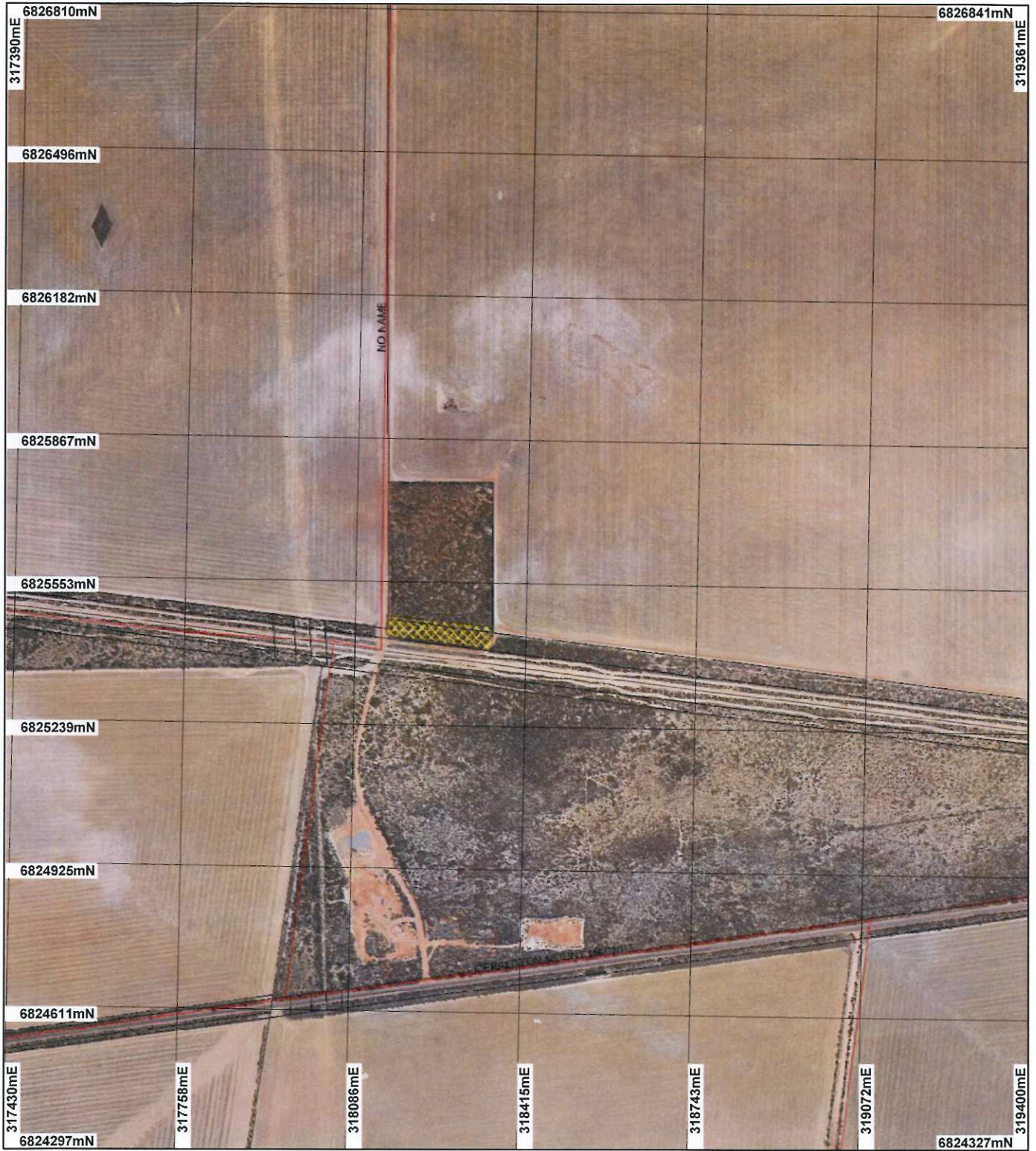


Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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

16 September 2010

Plan 2868/2a



LEGEND

Clearing Instruments

-  Areas Approved to Clear
-  Road Centrelines
-  Cadastre
-  Indarra 50cm Orthomosaic - Landgate 2007



Geocentric Datum Australia 1994

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

 Date 16/9/10

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

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



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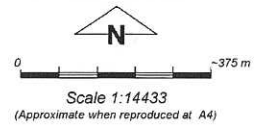
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Plan 2868/2b



LEGEND

- | | |
|-----------------------------|---|
| Clearing Instruments | Tallering 50cm Orthomosaic - Landgate 2005 |
| Areas Approved to Clear | Indarra 50cm Orthomosaic - Landgate 2007 |
| Road Centrelines | Mungo 50cm Orthomosaic - Landgate 2006 |
| Cadastre | |



Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

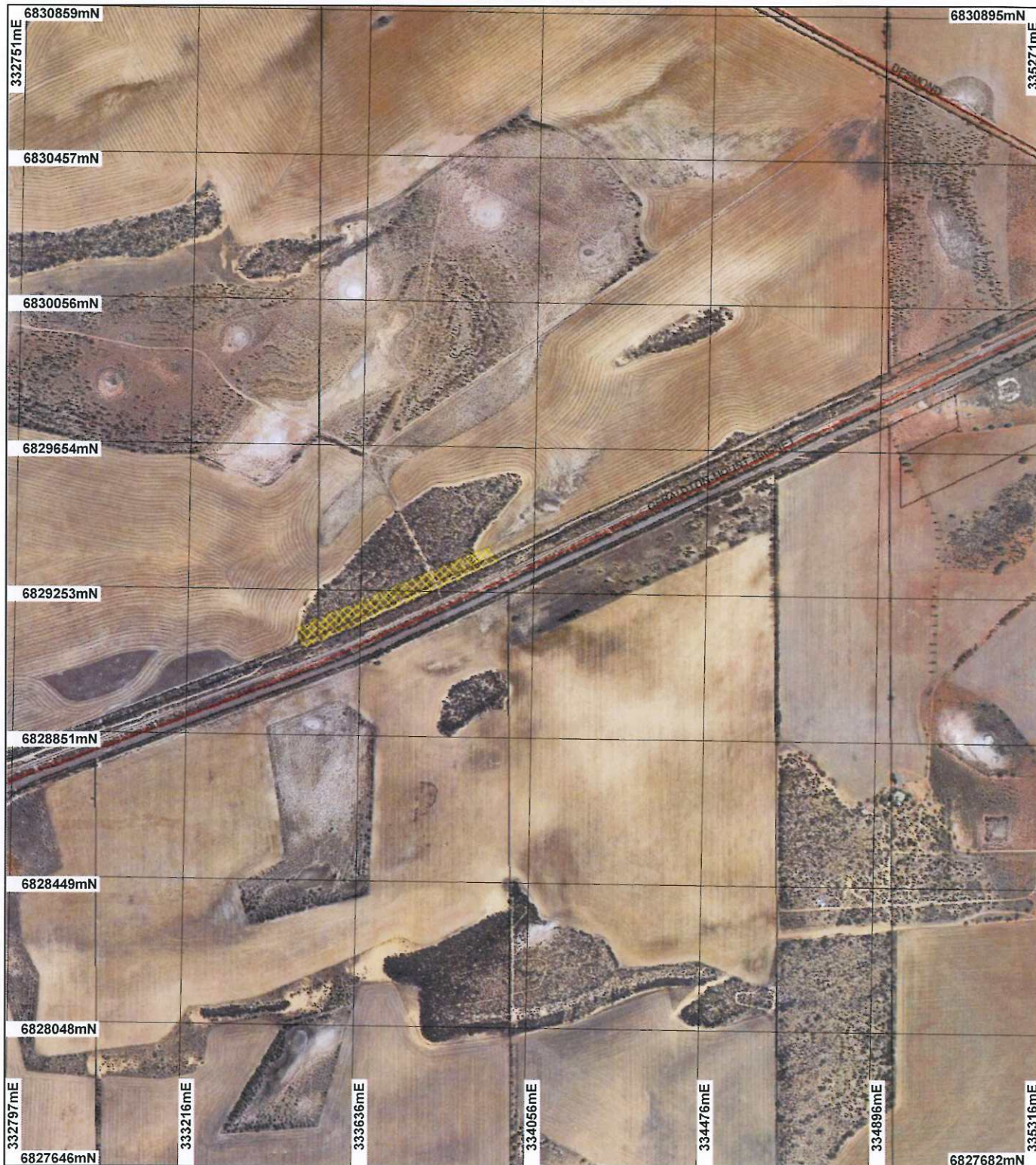
[Signature] Date 16/9/10
 K. Faulkner

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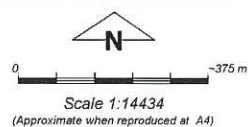
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Plan 2868/2c



LEGEND

- | | |
|-----------------------------|---|
| Clearing Instruments | Talling 50cm Orthomosaic - Landgate 2005 |
| Areas Approved to Clear | Indarra 50cm Orthomosaic - Landgate 2007 |
| Road Centrelines | Mungo 50cm Orthomosaic - Landgate 2006 |
| Cadastre | |



Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Date 16/9/10
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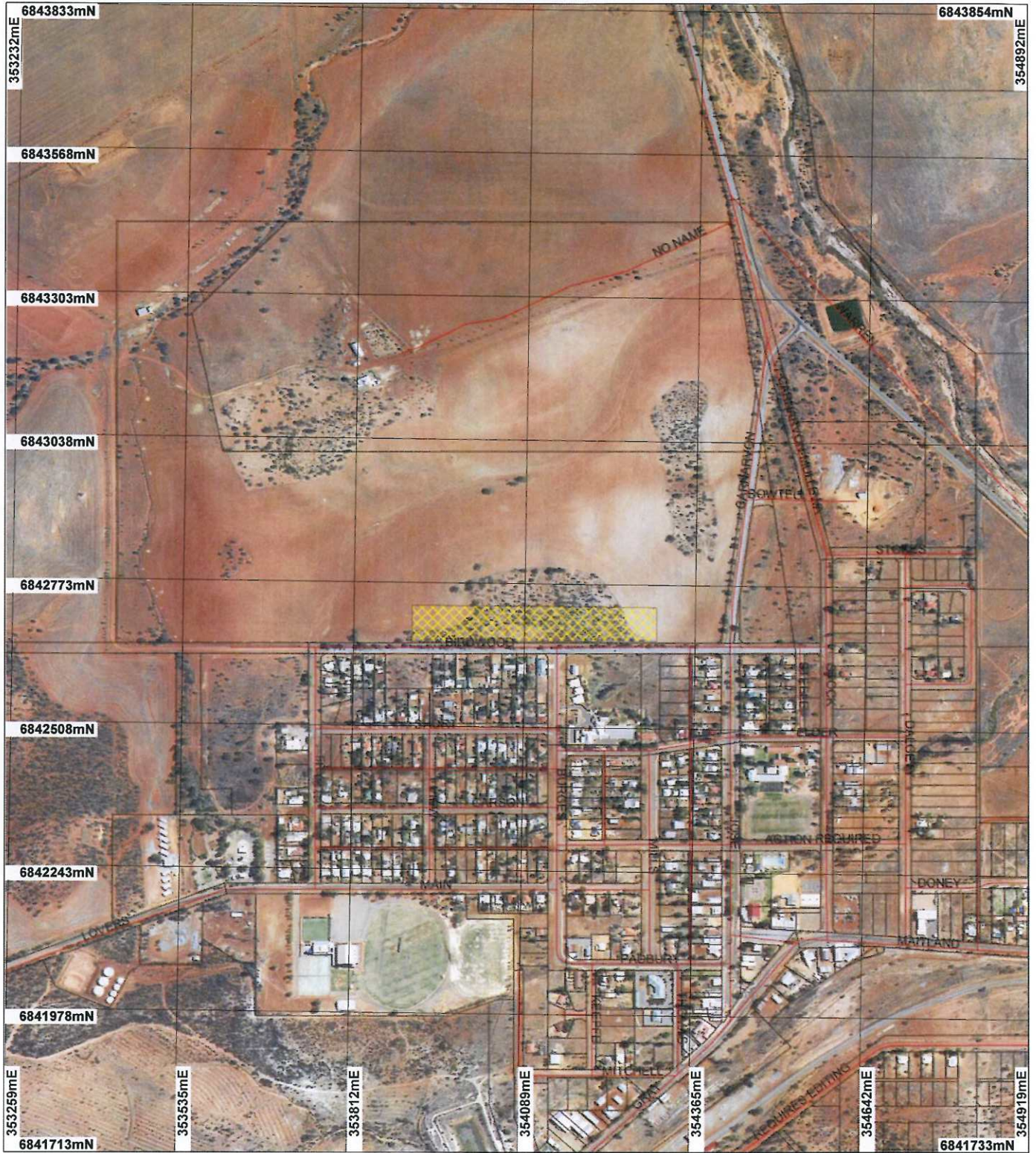
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Plan 2868/2d



LEGEND

Clearing Instruments

-  Areas Approved to Clear
-  Road Centrelines



0 ————— ~250 m

Scale 1:9505

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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K. Faulkner Date 16/9/10

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Environment and Conservation

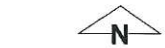
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Plan 2868/2e



LEGEND

- | | |
|-----------------------------|---|
| Clearing Instruments | Tallering 50cm Orthomosaic - Landgate 2005 |
| Areas Approved to Clear | Indarra 50cm Orthomosaic - Landgate 2007 |
| Road Centrelines | Mungo 50cm Orthomosaic - Landgate 2006 |
| Cadastre | |



0 ————— 2.5 km

Scale 1:92122
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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Plan 2868/2f



LEGEND

- | | |
|-----------------------------|--|
| Clearing Instruments | Mungo 50cm Orthomosaic - Landgate 2006 |
| Areas Approved to Clear | Muggamurra 80cm Orthomosaic - Landgate |
| Road Centrelines | |



0 ————— 5 km

Scale 1:193080

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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Date 16/7/10

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Plan 2868/2g



LEGEND

- | | |
|---|---|
| <p>Clearing Instruments</p> <ul style="list-style-type: none"> Areas Approved to Clear Road Centrelines | <p>Mungo 50cm Orthomosaic - Landgate 2006</p> <p>Muggamurra 80cm Orthomosaic - Landgate</p> |
|---|---|



Scale 1:193298
 (Approximate when reproduced at A4)
 Geocentric Datum Australia 1994

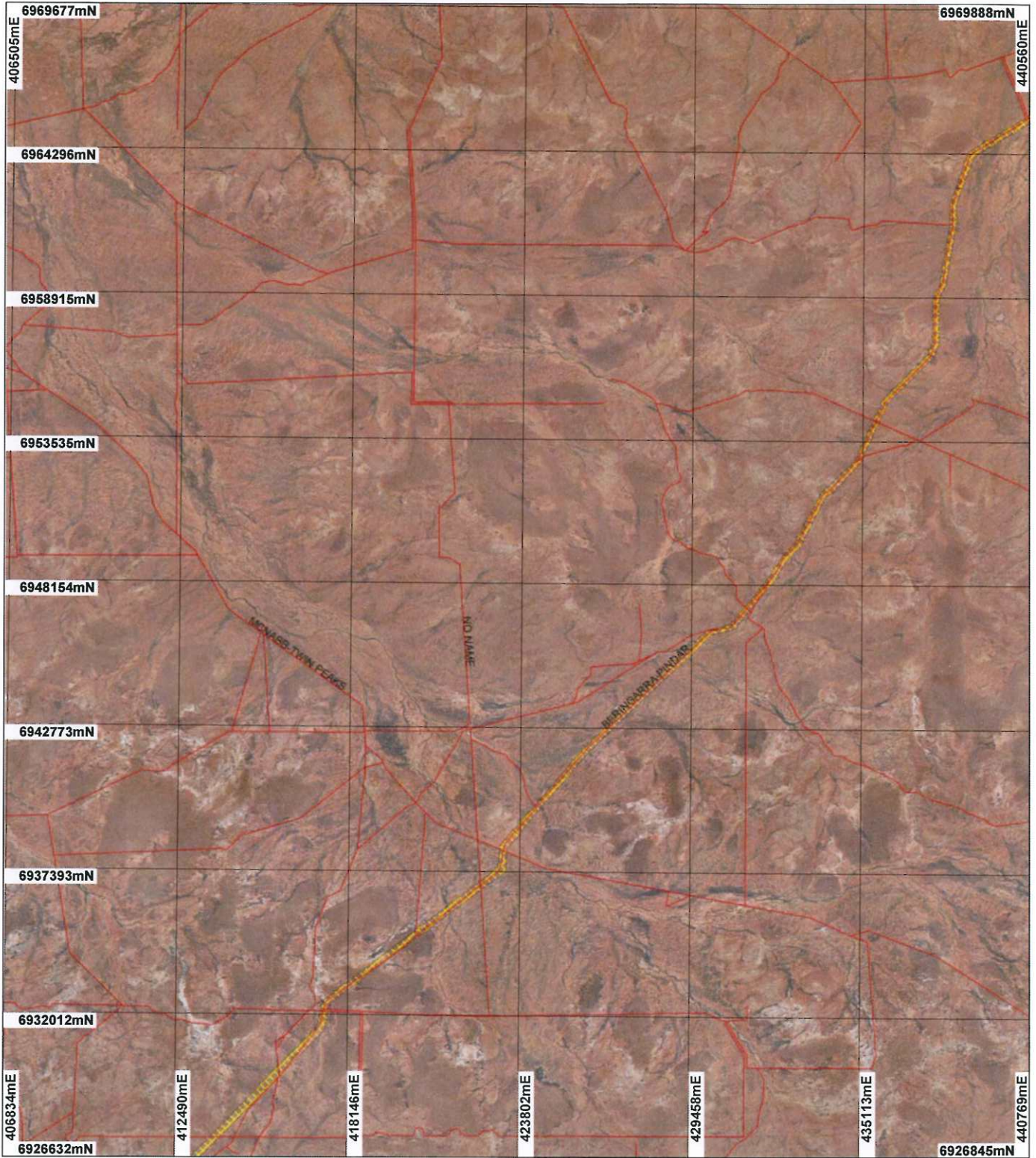
Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

K. Faulkner Date 16/9/10

K. Faulkner
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Plan 2868/2h



LEGEND

Clearing Instruments

-  Areas Approved to Clear
-  Road Centrelines



0  5 km

Scale 1:193617

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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

 Date 16/9/10

K. Faulkner

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

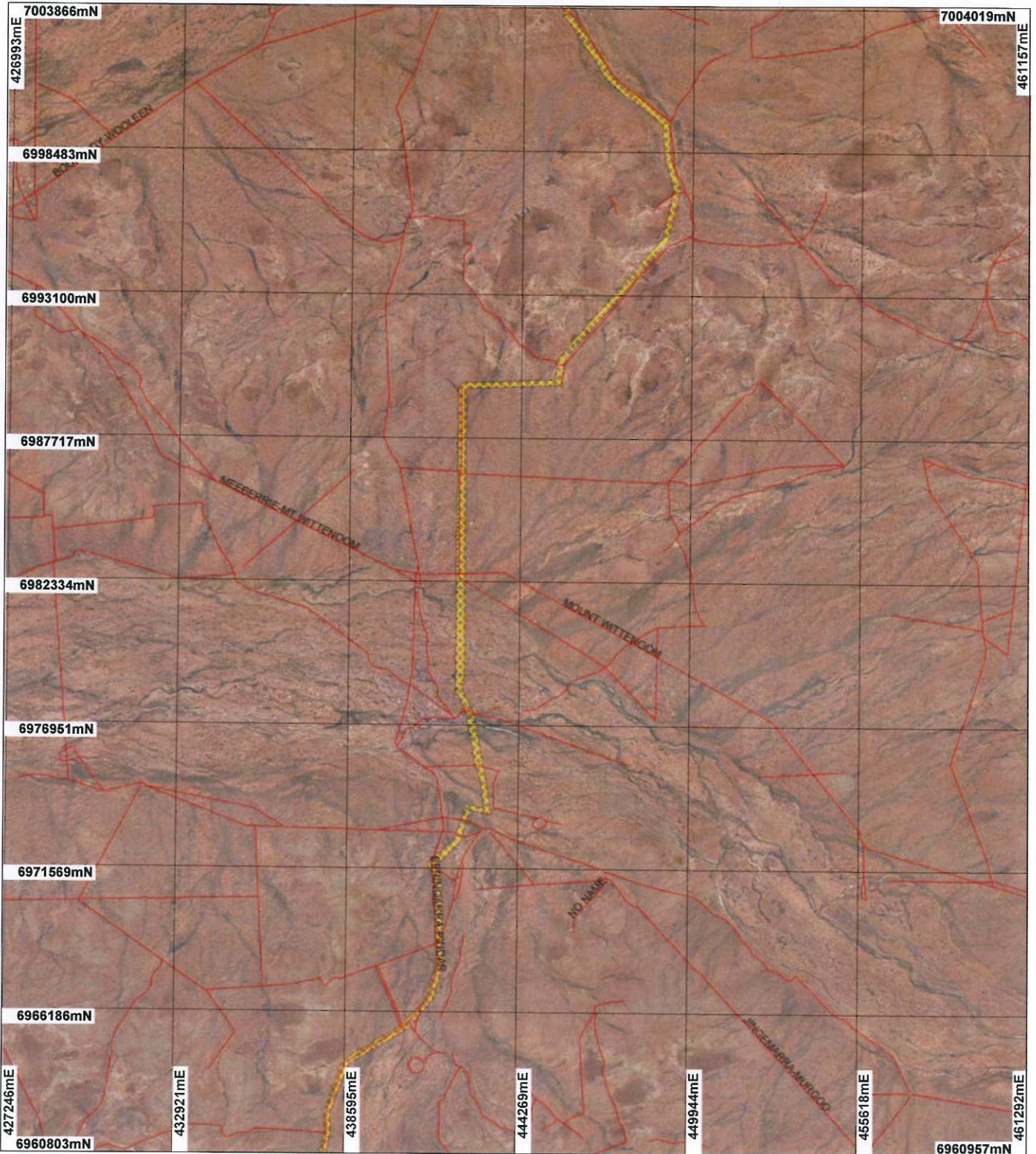
Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



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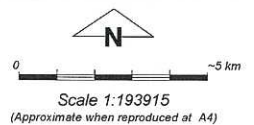
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Plan 2868/2i



LEGEND

- Clearing Instruments
- Areas Approved to Clear
- / Road Centrelines



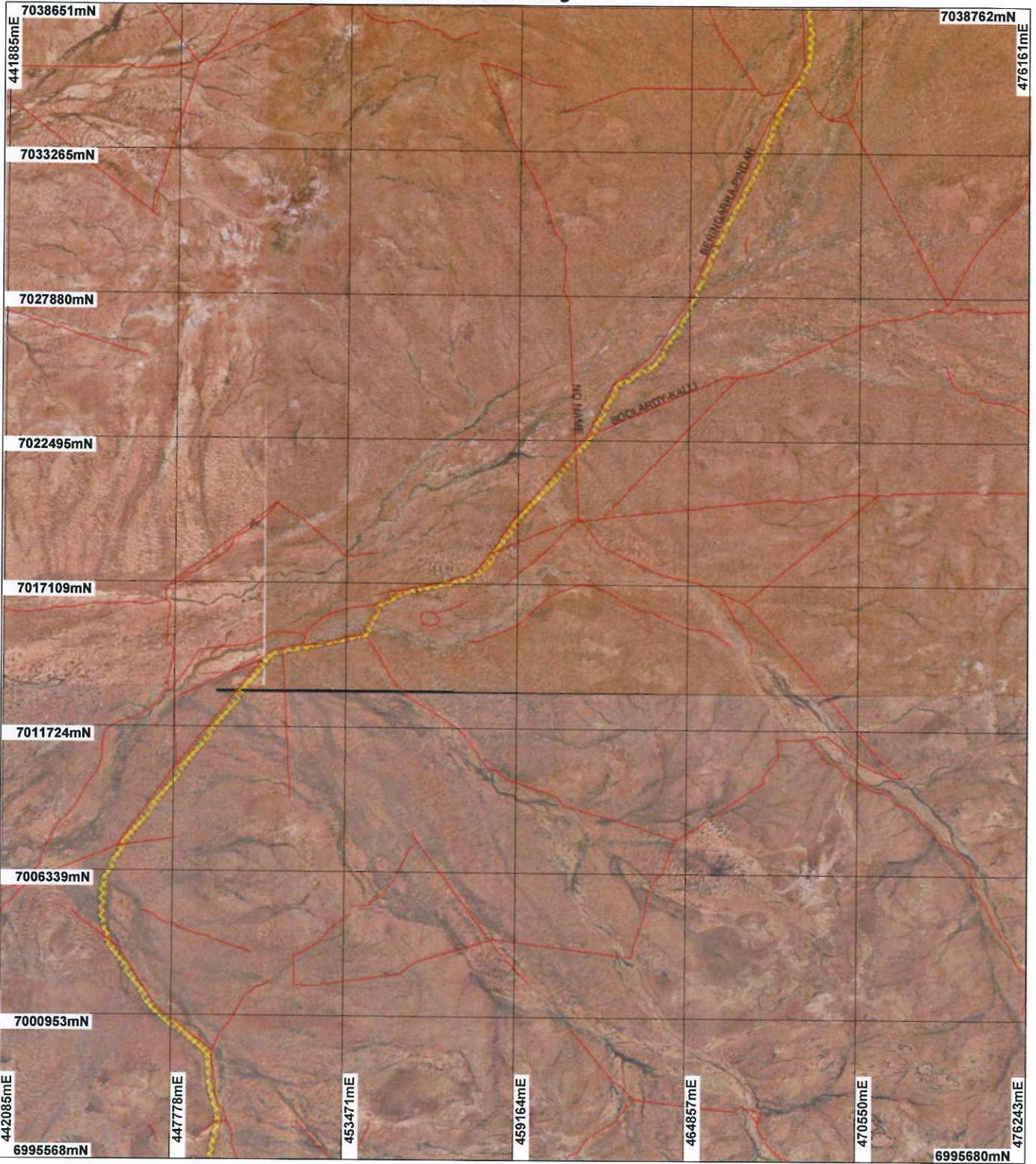
Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

[Signature] Date 16/9/10

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

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Plan 2868/2j



LEGEND

- | | |
|---|---|
| <p>Clearing Instruments</p> <ul style="list-style-type: none"> Areas Approved to Clear / Road Centrelines | <p>Boolarly 50cm Orthomosaic - Landgate 2005</p> <p>Chulyawarra 50cm Orthomosaic - Landgate</p> |
|---|---|



0 ~5 km

Scale 1:194216

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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

[Signature] Date 14/9/00

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

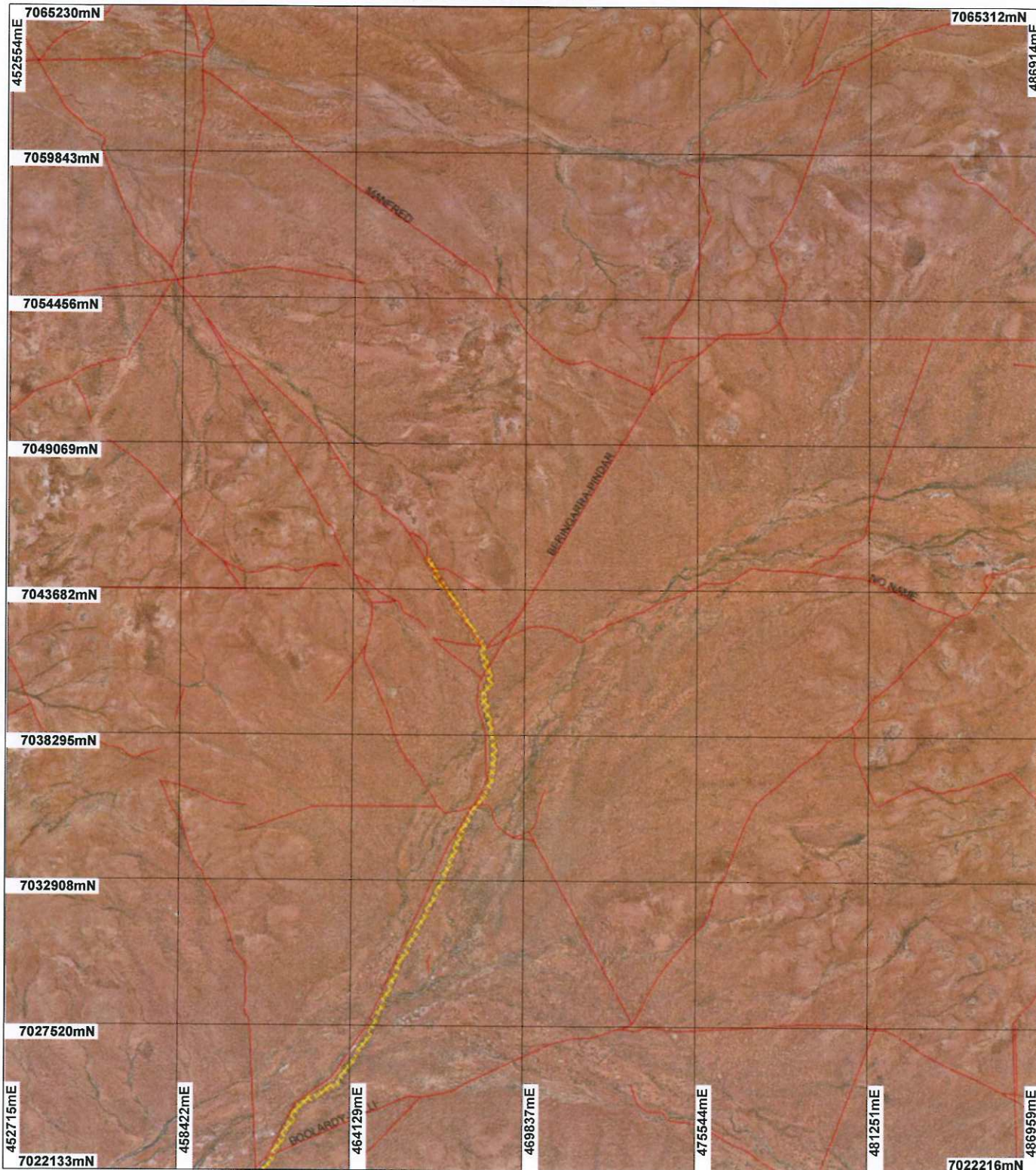
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Plan 2868/2k



LEGEND

Clearing Instruments
 □ Areas Approved to Clear
 - Road Centrelines

Boolarly 50cm Orthomosaic - Landgate 2005
 Chulyawarra 50cm Orthomosaic - Landgate



Scale 1:194444

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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

K. Faulkner Date 16/9/10

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1. Application details

1.1. Permit application details

Permit application No.: 2868/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: AARNet Pty Ltd

1.3. Property details

Property: Multiple land parcels and road reserves
Local Government Area: Shires of Mullewa and Murchison

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
7		Mechanical Removal	Building or Structure

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Units*:			
29 - Sparse low woodland; mulga, discontinuous in scattered groups	The proposal is to clear 7 ha of native vegetation for the purpose of installing a fibre optic cable for the SKA telescope facility at Boolardy Station for CSIRO.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The vegetation condition was determined using aerial photography (Western Australian Landsat Mosaic 25m AGO 2006, Geraldton 50cm Orthomosaic Landgate 2006, Boolardy 50cm Orthomosaic Landgate 2005).
35 - Shrublands; jam scrub with scattered York gum		To	
39 - Shrublands; mulga scrub	The application covers various properties with most of the cable being installed within road reserve and the majority.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).	
40 - Shrublands; acacia scrub, various species			
204 - Succulent steppe with open scrub; scattered mulga & Acacia sclerosperma over saltbush & bluebush	Vegetation condition will vary however as most of the applied area is within highly disturbed road reserve the overall condition of the vegetation is expected to be degraded (Keighery, 1994).		
240 - Succulent steppe with open scrub; scattered Acaica sclerosperma & bowgada over saltbush & bluebush			
268 - Succulent steppe with open scrub; scattered Acacia sclerosperma over saltbush & bluebush			
326 - Low woodland over scrub; mulga over bowgada & minnieritchie scrub			
372 - Mosaic: Shrublands; scrub-heath on deep sandy flats / Shrublands; thicket, acacia-casuarina alliance			
379 - Shrublands; scrub-heath on lateritic sandplain in the central Geraldton Sandplain Region			
380 - Shrublands; scrub-heath on sandplain			
404 - Shrublands; bowgada & Acacia murrayana scrub			

420 - Shrublands; bowgada & jam scrub

687 - Shrublands; bowgada & jam scrub
with scattered *Allocasuarina heugelliana*
& York gum

1125 - Succulent steppe with scrub;
Acacia victoriae & snakewood over
saltbush & bluebush

2081 - Shrublands; bowgada and
associated spp. scrub

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 amended proposal is for the clearing of up to 7 hectares of native vegetation for the purpose of installing a fibre optic cable. The vegetation under application ranges in condition from degraded to very good (Keighery, 1994).

The proponent has aligned the cable route to minimise the amount of vegetation to be cleared, by utilising cleared track and road reserves reducing the total amount of clearing by 23 hectares and has avoided clearing any native vegetation within the Shire of Geraldton - Greenough.

Ngh Environmental (2010) surveyed the original cable route and identified eleven species of Declared Rare and Priority Flora. The proposed cable route has since been realigned to avoid the identified areas of remnant vegetation containing conservation significant flora (ngh environmental, 2010).

A desktop assessment identified six threatened, seven priority and one other specially protected fauna species along the length of the proposed cable route. In response to this DEC placed a fauna management condition on the Clearing Permit 2868/1. Ngh environmental (2010) conducted a field survey and did not identify any of the target species within the study area however it was acknowledged that the site may contain suitable breeding habitat for some of these species.

The amended cable route passes through Urawa and Twin Peaks Nature Reserves. Within Urawa Nature Reserve cleared tracks will be utilised so no clearing will be required however, there were no cleared tracks available for use within Twin Peaks Nature Reserve so clearing will be required (ngh environmental, 2010).

Based on the information above the proposed clearing is not likely to be at variance to this principle. Avoid, minimise conditions will also reduce any impact on areas of high biodiversity.

Methodology

References:

Keighery (1994)
ngh environmental (2010)

GIS Databases:

- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 27 July 2010

(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

Six threatened, seven priority and one other specially protected fauna species have been recorded along the length of the cable route (20km radius):

- *Egernia stokesii badia* (Western Spiny-tailed Skink - VU)
- *Burhinus grallarius* (Bush Stonecurlew - P4)
- *Petrogale lateralis lateralis* (Black-flanked Rock Wallaby - VU)
- *Clyclodomorphus branchialis* (VU)
- *Pezoporus wallicus flaviventris* (Western Ground Parrot - CR)
- *Oreocitta gutturalis gutturalis* (Crested Bellbird Southern - P4)
- *Idiosoma nigrum* (Shield-backed Trapdoor Spider - VU)
- *Pomatostomus superciliosus ashbyi* (White Browed Babbler - western wheatbelt - P4)
- *Lerista yuna* (P3)

- *Ardeotis australis* (Australian Bustard - P4)
- *Calyptorhynchus latirostris* (Carnaby's Black Cockatoo -EN)
- *Falco peregrines* (Peregrine Falcon - Other specially protected fauna)
- *Macropus irma* (Western Brush Wallaby - P4)
- *Psacodonotus seriatus* (P1)

DEC placed a fauna management condition on Clearing Permit 2868/1, which required the clearing area to be inspected to identify habitat suitable to be utilised by; *Calyptorhynchus latirostris* (Carnaby's Black-Cockatoo), *Burhinus grallarius* (Bush Stone-curlew), *Egernia stokesii badia* (Western Spiny-tailed Skink) and *Idiosoma nigrum* (Shield-backed Trapdoor Spider). Ngh environmental (2010) conducted a targeted fauna survey along the proposed cable route and did not identify any of the target species. Although, none of the target species were observed ngh environmental (2010) acknowledged that the site may contain suitable breeding habitat for some of these species. A fauna management condition will manage these impacts.

While surveying the project area ngh environmental (2010) observed two conservation significant species; *Ardeotis australis* (Australian Bustard) and *Leipoa ocellata* (Malleefowl). The Malleefowl is listed as vulnerable due to declining populations. Loss of habitat through vegetation clearing has been identified as a contributing factor to the decline of the Malleefowl. A fauna management condition will manage this impact.

Given the application area is linear, approximately 4 metres wide and is surrounded by vegetation it is not likely that the proposed clearing will cause the loss of ecological corridors within the natural landscape.

Given the project area may contain suitable breeding habitat for fauna indigenous to Australia this proposal may be at variance to this principle.

Methodology References:
ngh environmental (2010)

GIS Database:
NLWRA, Current Extent of Native Vegetation 20 Jan 2001
Pre European Vegetation - DA 01/01
SAC Biodatasets - accessed 27 July 2010

(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 large number of rare and priority flora species have been recorded within the local area (20km radius) of the cable route.

Ngh Environmental (2010) surveyed the original cable route and identified eleven species of Declared Rare and Priority Flora. The proposed cable route has since been realigned to avoid the identified areas of remnant vegetation containing conservation significant flora (ngh environmental, 2010).

Therefore, this proposal is not likely to be at variance to this principle.

Methodology References:
ngh environmental (2010)

GIS Database:
Pre European Vegetation - DA 01/01
SAC Biodatasets - accessed 27 July 2010
Soils, Statewide DA 11/99

(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 is one known Threatened Ecological Community (TEC) within the local area (20km radius), Greenough River Flats (Critically Endangered) approximately 13.5km south of the proposed cable route.

Given the distance between the proposed cable route and the TEC the clearing as proposed is not likely to be necessary for the maintenance of any known TEC occurrence.

Therefore, the clearing as proposed is not likely to be at variance to this principle.

Methodology GIS Database:
- SAC Biodatasets - accessed 27 July 2010
- Pre European Vegetation - DA 01/01

(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 likely to be at variance to this Principle

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The clearing as proposed under the new alignment will not exceed 7 hectares. Of this 7 hectares only 0.136 hectares falls within areas that retain less than 30 % of their pre European extent. This 0.136 hectares occurs within 4 different areas over 3 vegetation types (379, 380 and 687). The vegetation to be cleared within these three vegetation complexes ranges in condition from good to very good (Keighery, 1994).

The proponent has avoided clearing any vegetation within the Shire of Geraldton Greenough as it retains less than this 30% threshold.

The narrow, linear nature of the application area is unlikely to cause any further fragmentation of the natural landscape.

The vegetation to be cleared under this new alignment is not considered to be a significant remnant in an area that has been extensively cleared. Therefore, the proposed clearing is not at variance to this principle.

Methodology

References:

Commonwealth of Australia (2001)
Keighery (1994)

GIS Database:

- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Local Government Authorities - DLI 8/07/04
- Mattiske Vegetation - CALM 1/03/1998
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 27 July 2010
- NLWRA, Current Extent of Native Vegetation 20 Jan 2001

(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

The application area intersects numerous major and minor watercourses. As such, parts of the vegetation under application are growing in association with a watercourse.

Therefore, the clearing as proposed is at variance to this principle. However given the small linear area of clearing across a large area the proposed clearing is not likely to have a detrimental impact on watercourses or wetlands within the landscape.

Methodology

GIS database:

- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC 11/04/07
- Hydrography linear - DOW 13/7/06
- Hydrography linear (hierarchy) - DoW 13/7/06

(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 clearing as proposed may cause some short term wind and water erosion issues however given the long linear nature of the application area (7ha of clearing over approximately 340km), it is unlikely that appreciable land degradation will result.

Therefore, the proposed clearing is not likely to be at variance to this principle.

Methodology

GIS database:

- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide DA 11/99
- Topographic contours statewide - DOLA and ARMY 12/09/02
- Hydrogeology, Statewide 05 Feb 2002

(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 may be at variance to this Principle

The amended cable route passes through Urawa and Twin Peaks Nature reserve. Forty-Mile Nature reserve has been avoided under the new alignment.

Disturbance within Urawa Nature reserve will be minimised as the cable will be laid within existing boundary tracks, cleared fire breaks and other cleared trails (ngn environmental, 2010).

There are no access tracks or cleared corridors available for use within the Twin Peaks Nature reserve.

The clearing may impact on environmental values of, and increase the intrusion of weed species into, these conservation areas, (DEC, 2008). A weed management condition will reduce the potential impact of clearing on these conservation areas.

Therefore, the clearing as proposed may be variance to this principle.

Methodology

References:

DEC (2008)

ngn environmental (2010)

GIS Databases:

- CALM Managed Lands and Waters - CALM 01/06/05

(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 clearing application passes through the Greenough River and Murchison River Catchments.

The proposed clearing may cause some short term water quality issues in terms of localised surface water sedimentation during works. However, these impacts will be minimal and are not expected to have any lasting impact on water quality.

Due to the linear nature of the areas proposed to be cleared, it is unlikely that the clearing of native vegetation will cause significant deterioration in the quality of surface water or groundwater within the local area.

Therefore the clearing as proposed is not likely to be at variance to this principle.

Methodology

GIS database:

- Hydrographic catchments, catchments - DoW 01/06/07

- Hydrographic catchments, subcatchments - DoW 01/06/07

(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

Due to the narrow linear nature (7 hectares along 340km) of the proposed clearing it is unlikely to cause or exacerbate flooding.

The proposal is not likely to be at variance to this proposal.

Methodology

GIS database:

- Hydrography, linear - DoW 13/7/06

- Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05

- Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The clearing as proposed is for activities consistent with the applicants rights under the Telecommunications Act (1997) and therefore granting a permit to clear native vegetation is a secondary approvals process.

The applied area is within Rights in Water Irrigation Act 1914 areas for groundwater protection. As the clearing will intersect multiple watercourses the proposal requires a Beds and Banks licence from the Department of Water.

Methodology

4. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
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- ng environmental (2010) Flora and Fauna Habitat Assessment, Proposed Optic Fibre Cable Geraldton to Boolardy Station, Western Australia (TRIM Ref: DEC9878).
- Shepherd, D.P. (2007) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
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5. Glossary

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