



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 6753/1
Permit Holder:	Commissioner of Main Roads Western Australia
Duration of Permit:	24 September 2016 to 24 September 2021

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 road upgrades, drainage, fencing, material pits and camps.

2. Land on which clearing is to be done

Lot 33 on Plan 220705, Wiluna
Lot 38 on Plan on Plan220383, Wiluna
Lot 46 on Plan 220406, Wiluna
Lot 47 on Plan 238630, Wiluna
Lot 57 on Plan 93377, Wiluna
Lot 136 on Plan 36742, Wiluna
Lot 1555 on Plan 33762, Wiluna
Lot 1558 on Plan 33762, Wiluna
Crown Reserve 9699, Wiluna
Crown Reserve 13096, Wiluna
Crown Reserve 29839, Wiluna
Goldfields Highway Road Reserve (PINs 1343845, 1343846, 1343847, 1343848, 1343855, 1345581, 11725127, 11725128, 11725129, 11725903), Wiluna
Lot 37 on Plan 91821, Meekatharra
Lot 40 on Plan 209469, Meekatharra
Lot 44 on Plan 209469, Meekatharra
Lot 53 on Plan 176277, Meekatharra
Lot 64 on Plan 184574, Meekatharra
Lot 105 on Plan 220383, Meekatharra
Lot 143 on Plan 238583, Meekatharra
Lot 144 on Plan 240311, Meekatharra
Lot 148 on Plan 238472, Meekatharra
Lot 151 on Plan 220519, Meekatharra
Lot 154 on Plan 240326, Meekatharra
Lot 159 on Plan 240311, Meekatharra
Lot 160 on Plan 240311, Meekatharra
Lot 161 on Plan 240311, Meekatharra
Lot 186 on Plan 92104, Meekatharra
Lot 196 on Plan 93513, Meekatharra
Lot 1033 on Plan 29717, Meekatharra
Lot 1035 on Plan 29717, Meekatharra
Unallocated Crown Land (PIN 1018559), Meekatharra

Goldfields Highway Road Reserve (PIN 11725138, 11725139, 11725140, 11725141, 11725142, 11725548, 11725903, 11725904, 11725905, 11725906, 12052624), Meekatharra

3. Area of Clearing

The Permit Holder must not clear more than 534 hectares of native vegetation within the area cross-hatched yellow on attached Plan 6753/1a-q.

4. 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.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the purpose described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for that purpose under the *Main Roads Act 1930* or any other written law.

PART II – MANAGEMENT CONDITIONS

6. 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.

7. Weed control

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*:

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

8. Environmental Management Plan

The Permit Holder must implement and adhere to the following documents:

- (a) “*Main Roads Western Australia: Goldfields Highway Wiluna to Meekatharra PortLink Project – Environment Impact Assessment and Management Plan, September 2014*”; and
- (b) “*Main Roads WA: Wiluna Meekatharra PortLink Project Fauna Management Plan, July 2016*”.

PART III - RECORD KEEPING AND REPORTING

9. Records to 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 or decimal degrees;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).
- (b) In relation to condition 8(a) and 8(b) of this Permit the Permit Holder must maintain records of activities undertaken in accordance with the documents “*Main Roads Western Australia: Goldfields Highway Wiluna to Meekatharra PortLink Project – Environment Impact Assessment and Management Plan, September 2014*” and “*Main Roads WA: Wiluna Meekatharra PortLink Project Fauna Management Plan, July 2016*”.

10. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 9 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
- (c) Prior to 17 June 2021, the Permit Holder must provide to the CEO a written report of records required under condition 9 of this Permit where these records have not already been provided under condition 10(a) of this Permit.

DEFINITIONS


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

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;

weeds means any Plant -

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

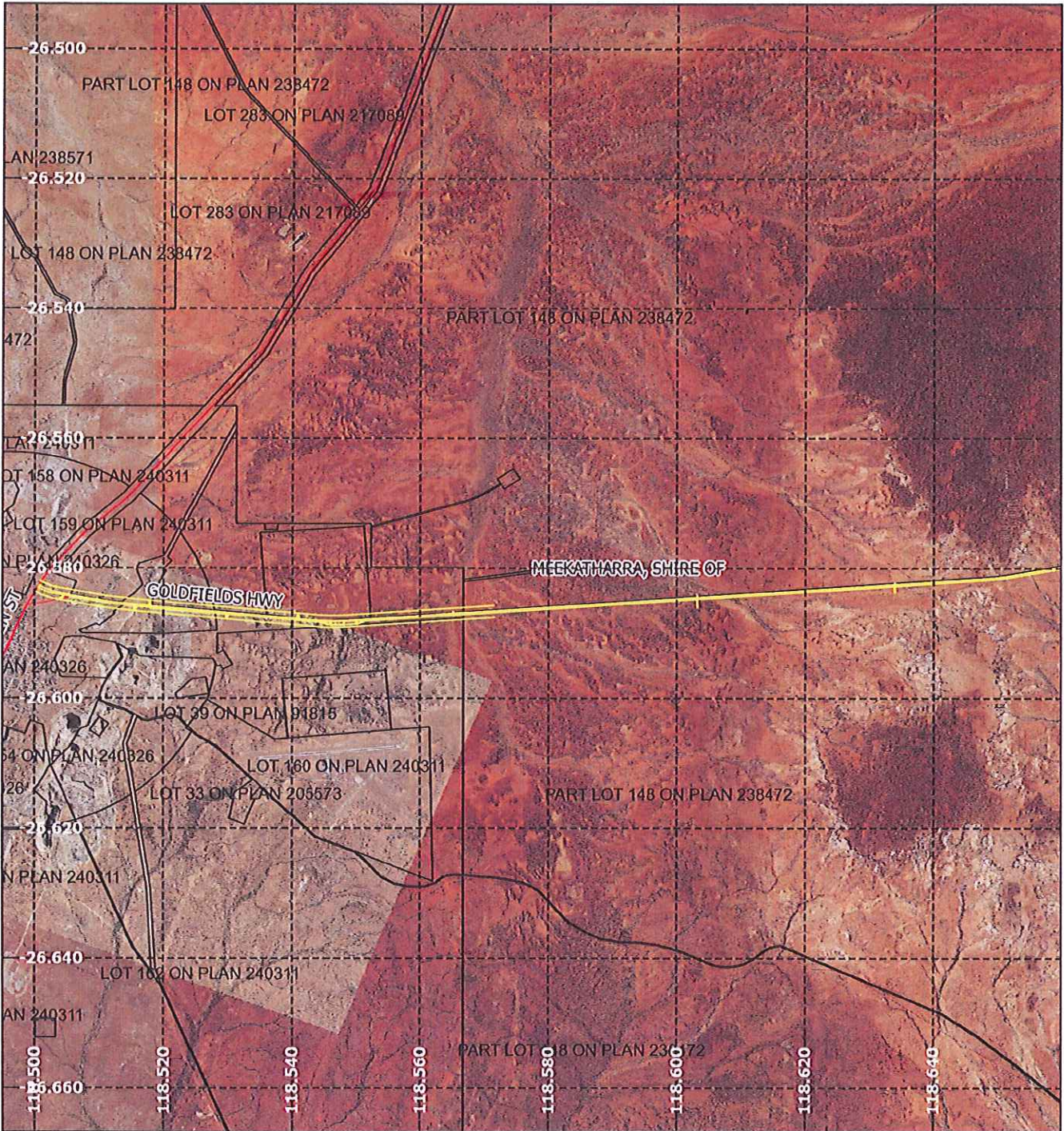


James Widenbar
MANAGER
CLEARING REGULATION

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

25 August 2016

Plan 6753/1a



Legend

-  Areas approved to clear
-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



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MGA 94

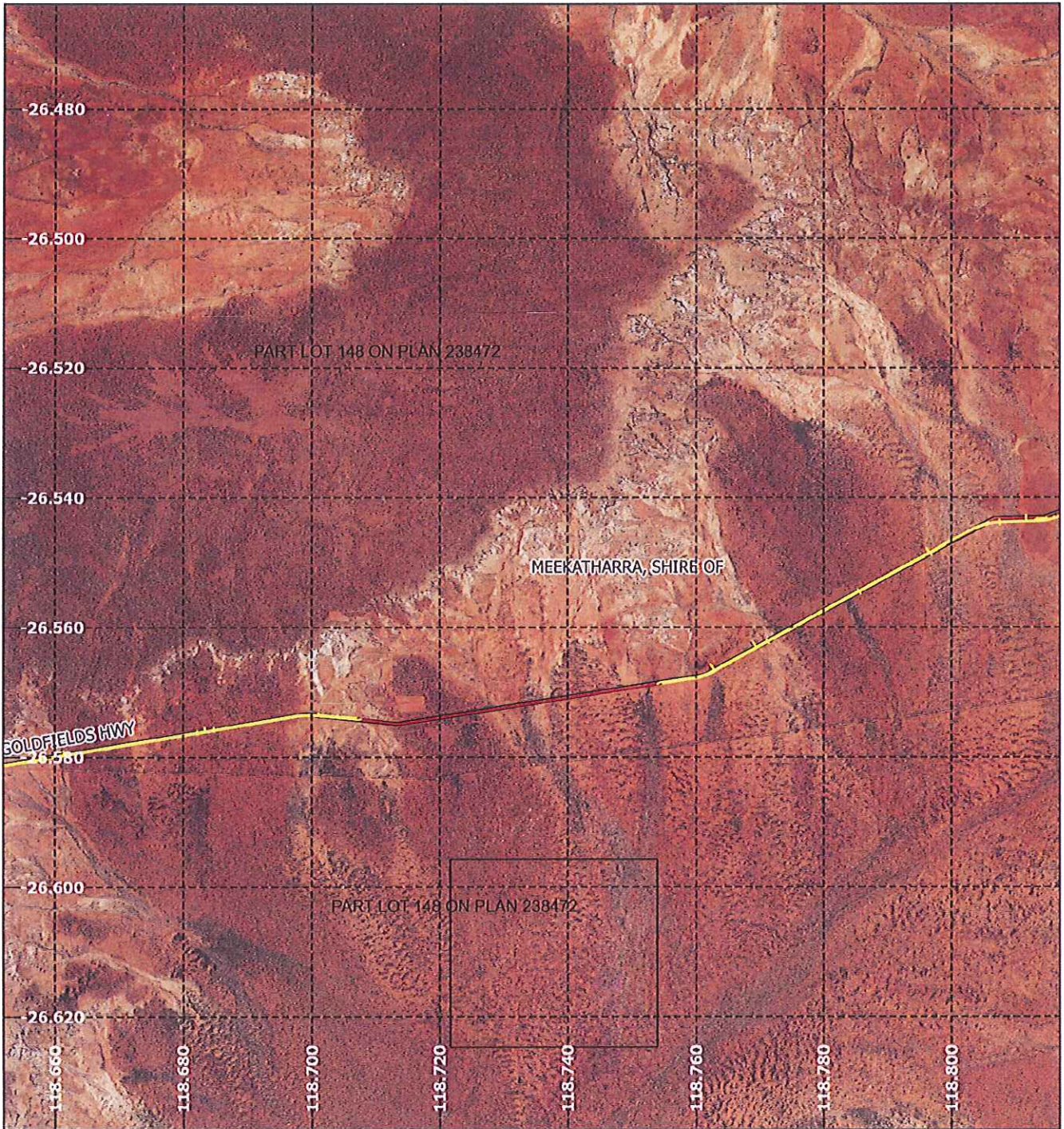
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[Signature] Date 25/8/16

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



Plan 6753/1b



Legend

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-  Roads
-  local_gov_authority
- Virtual Mosaic



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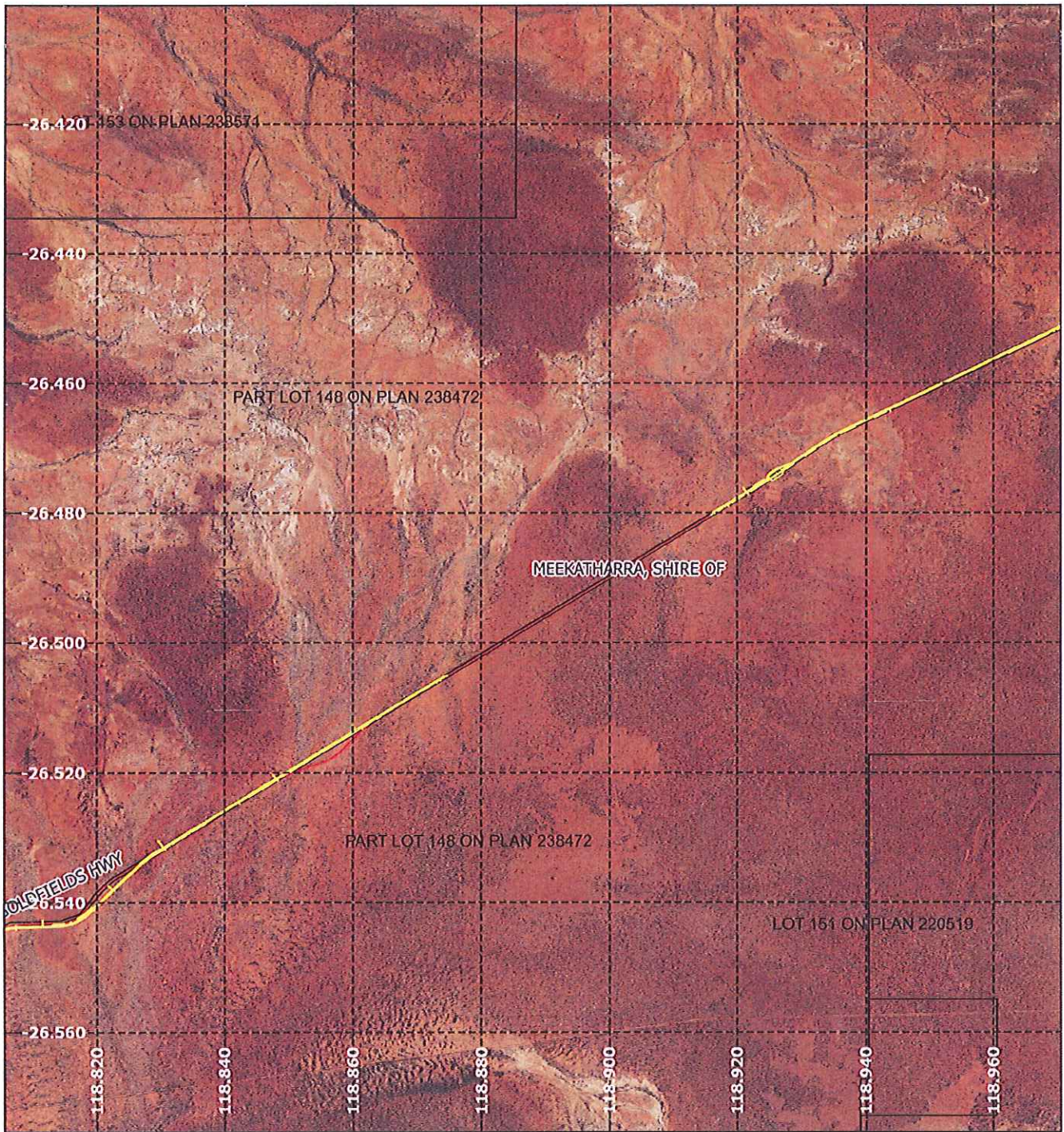
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S. Williams Date *25/8/16*

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Plan 6753/1c



Legend

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-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



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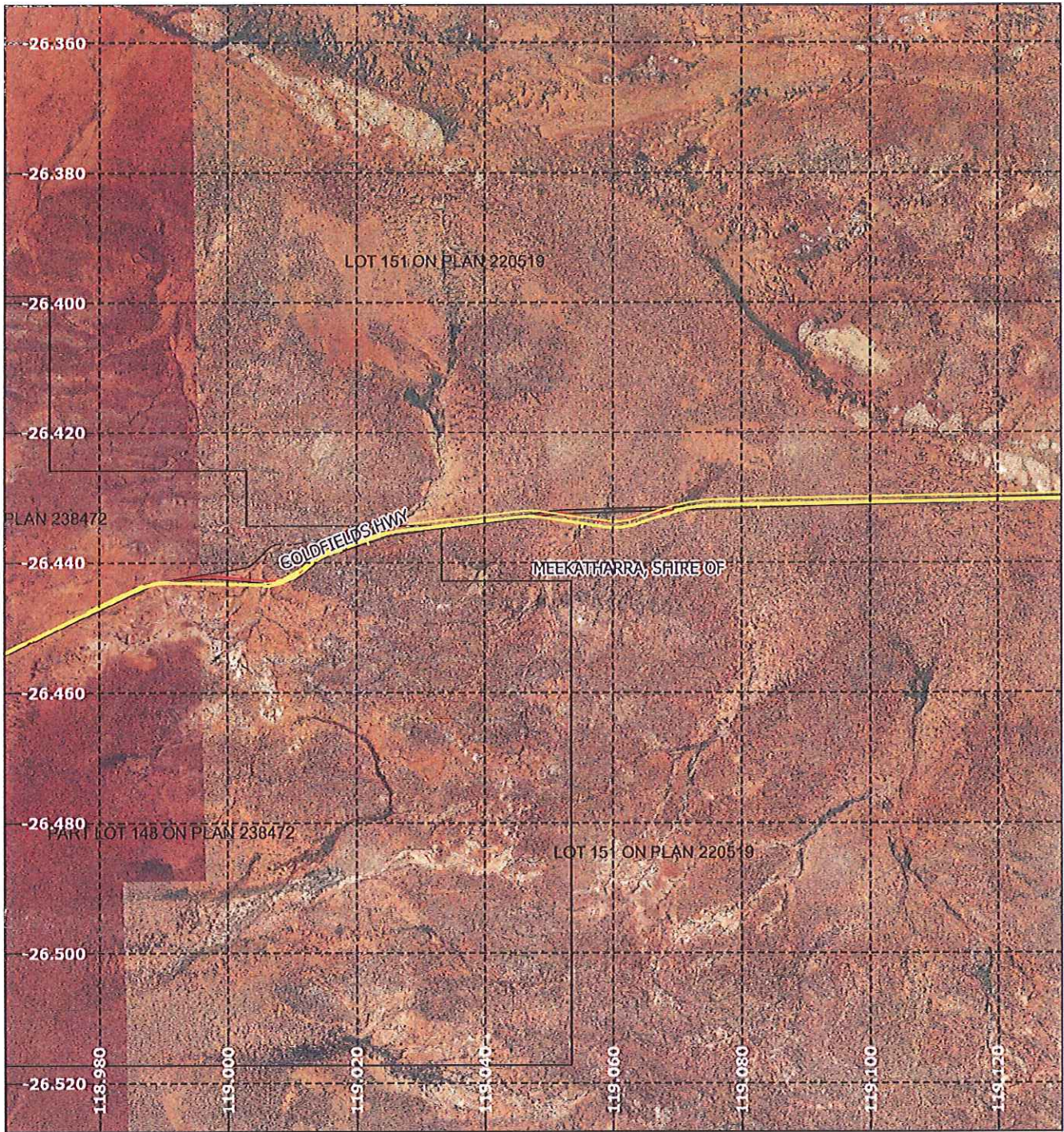
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Plan 6753/1d



Legend

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-  Roads
-  local_gov_authority
- Virtual Mosaic



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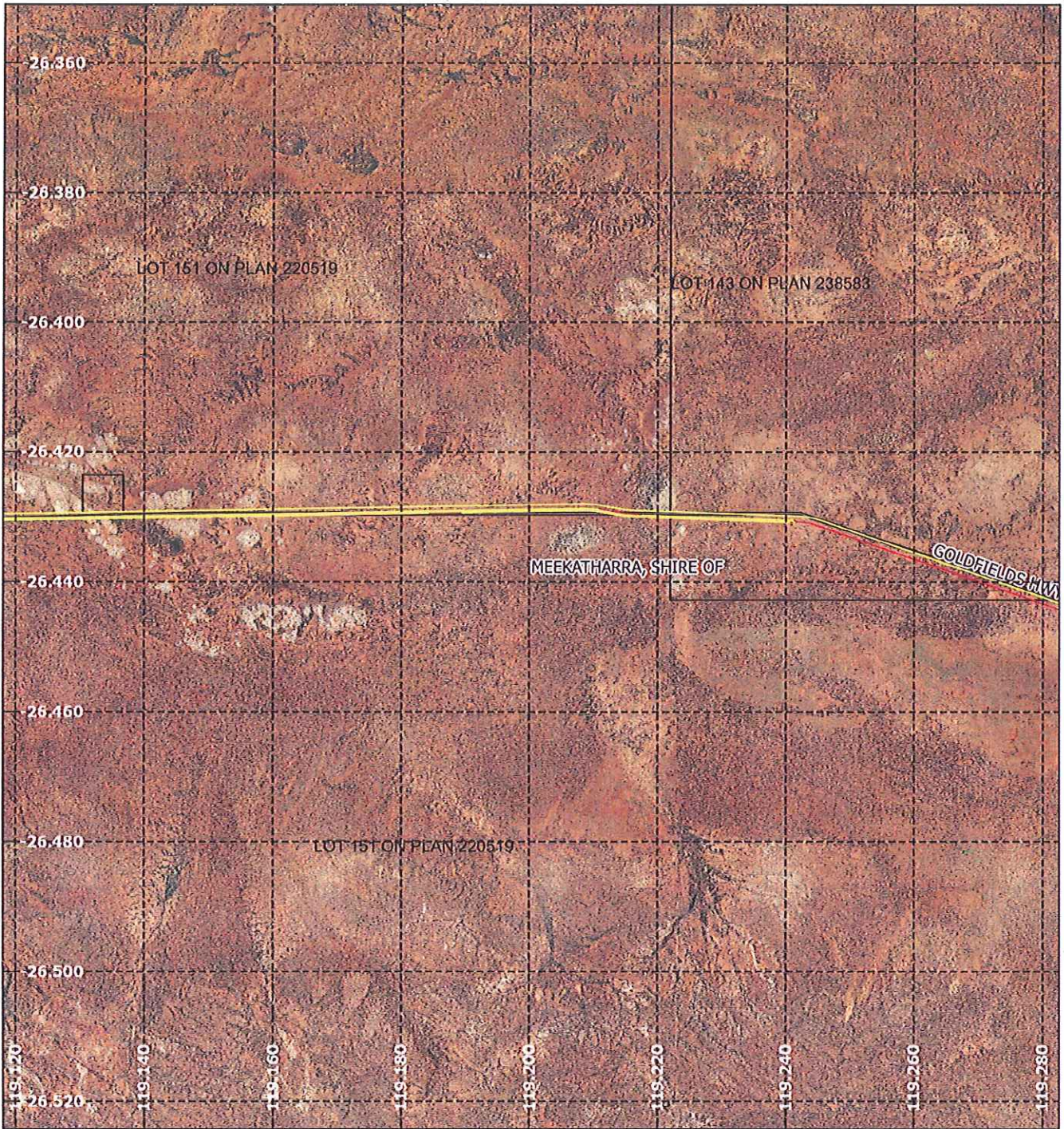
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J. W. Anderson Date 25/8/16

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of the Environmental Protection Act 1986



Plan 6753/1e



Legend

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-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



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Geocentric Datum of Australia 1994

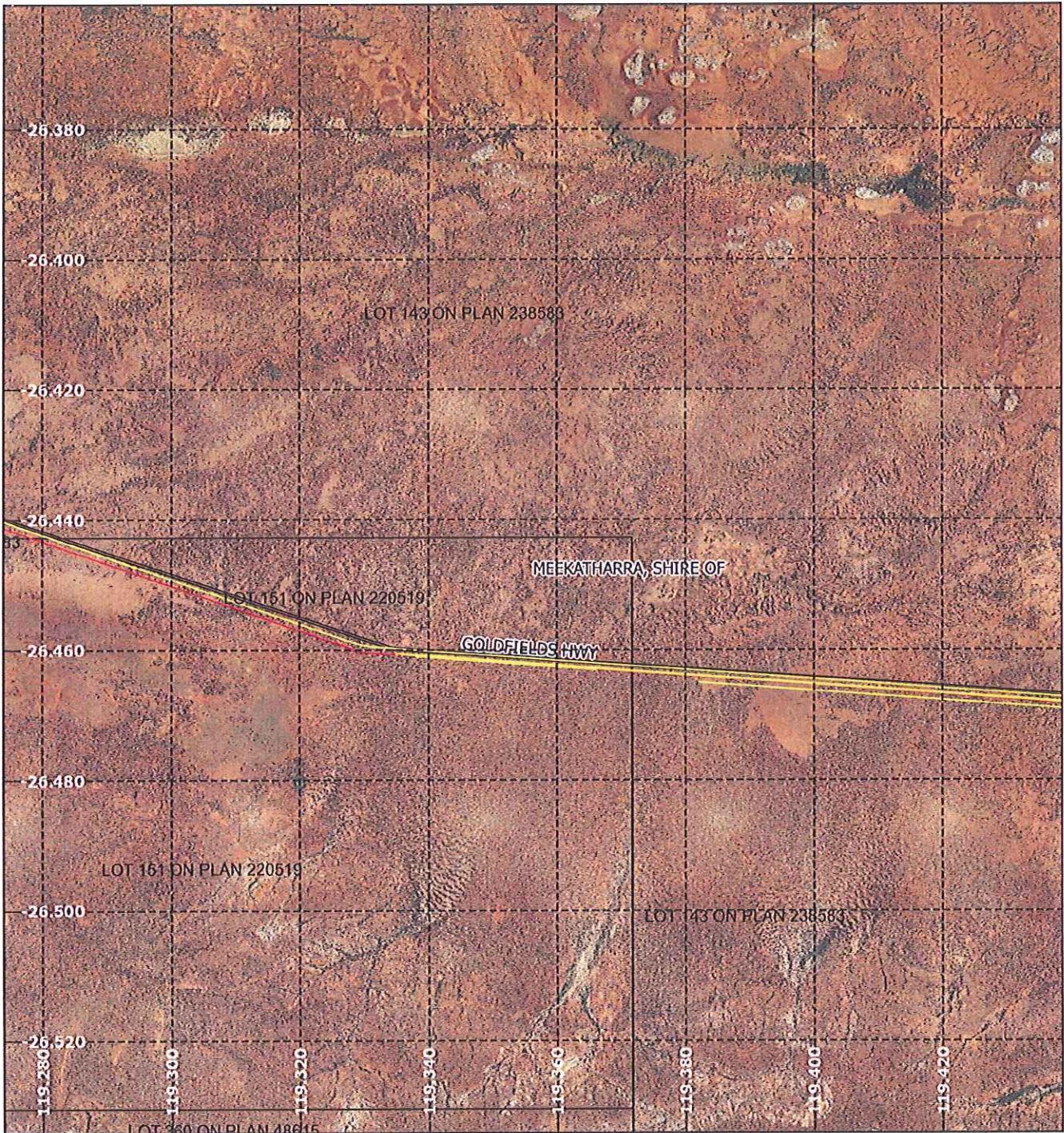
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Officer with delegated authority under Section 20
of the Environmental Protection Act 1988



GOVERNMENT OF
WESTERN AUSTRALIA

Plan 6753/1f



Legend

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-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



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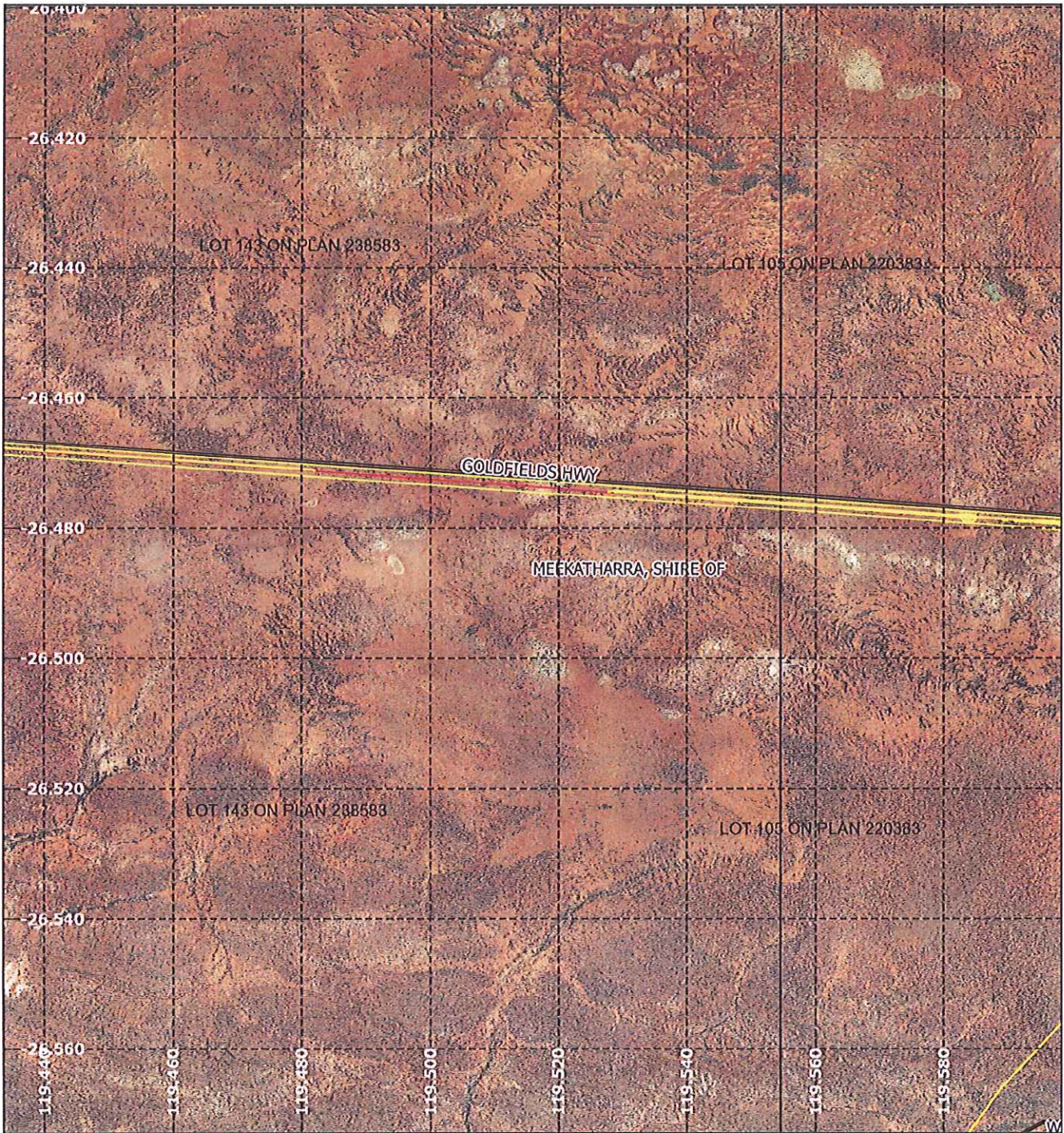
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[Signature] Date 25/8/16

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of the Environmental Protection Act 1986



Plan 6753/1g



Legend

-  Areas approved to clear
-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



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Geocentric Datum of Australia 1994

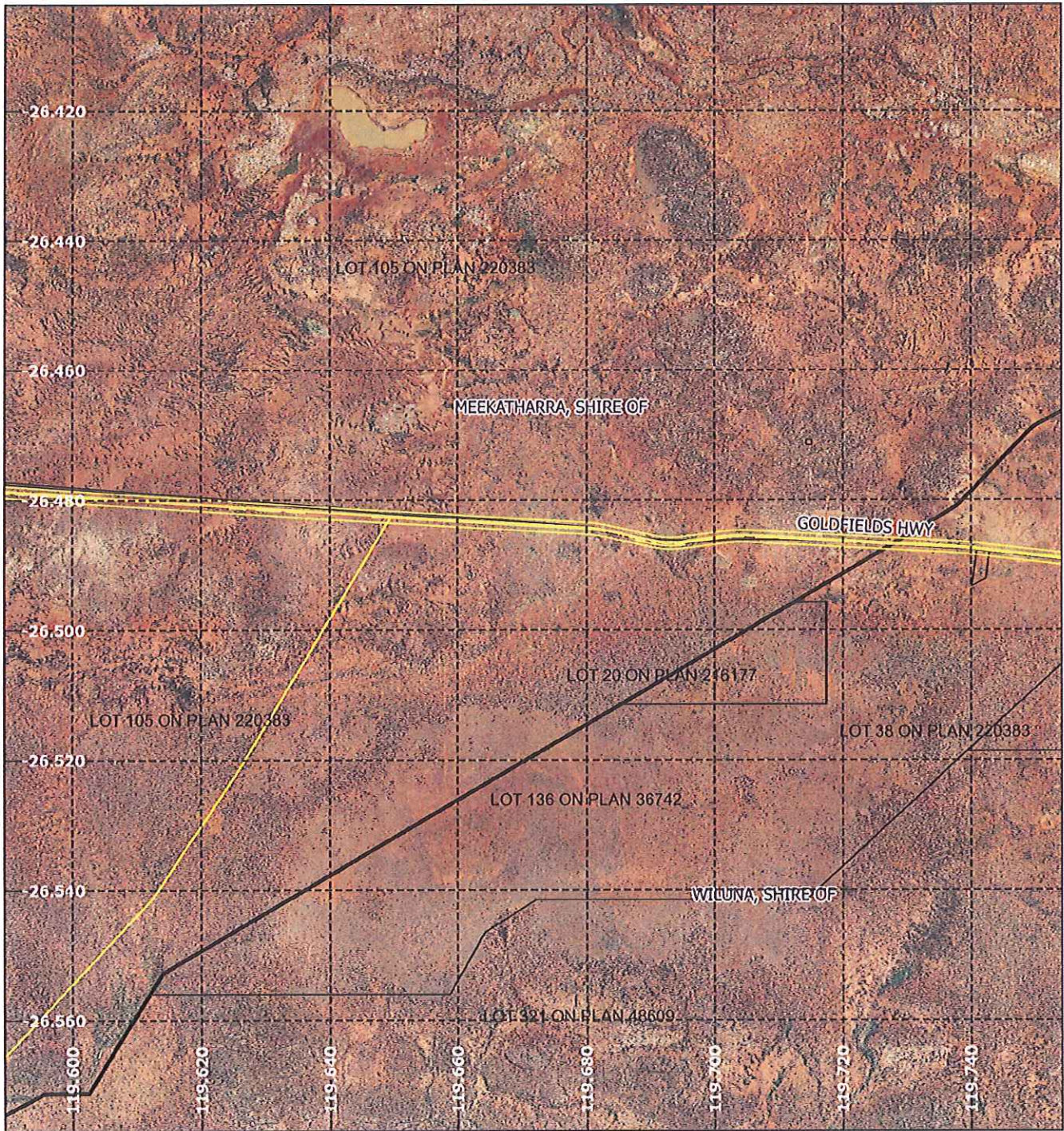
J. W. ... Date 25/8/16

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



GOVERNMENT OF
WESTERN AUSTRALIA

Plan 6753/1h



Legend

-  Areas approved to clear
-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



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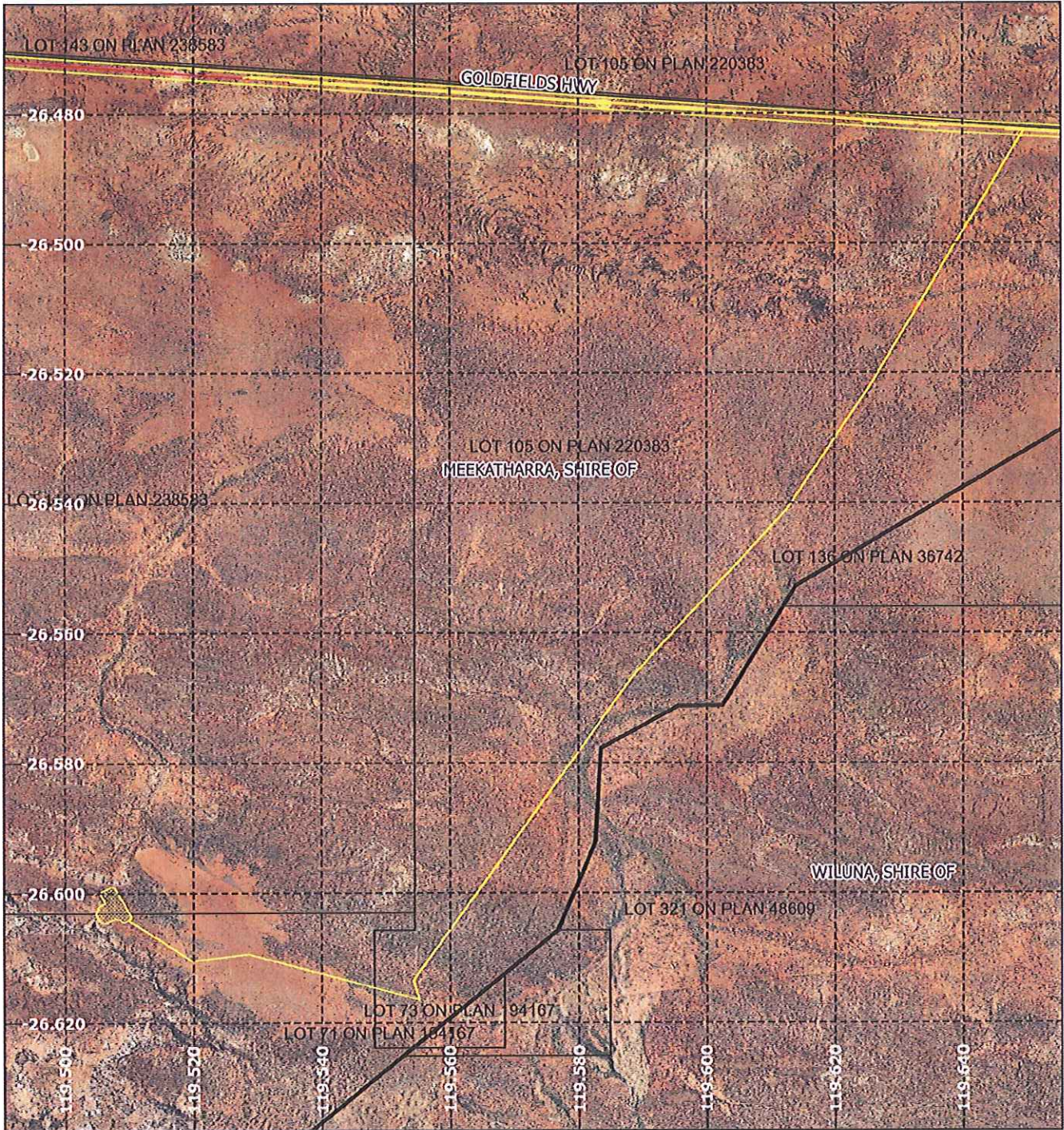
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Geocentric Datum of Australia 1994

S. J. White Date *25/01/16*

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



Plan 6753/1i



Legend

-  Areas approved to clear
-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



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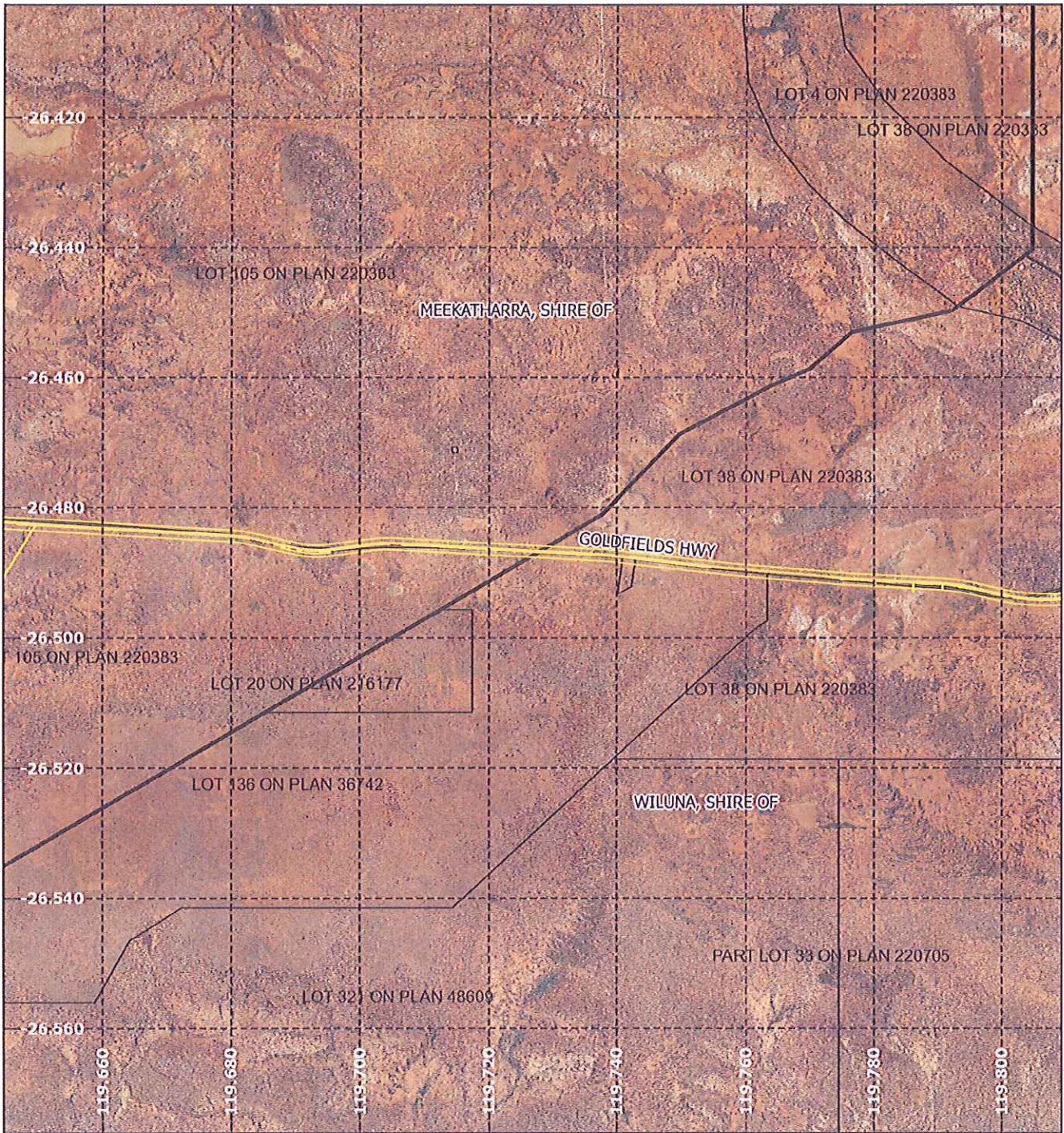
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Officer with delegated authority under Section 20
of the Environmental Protection Act 1936



Plan 6753/1j



Legend

-  Areas approved to clear
-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



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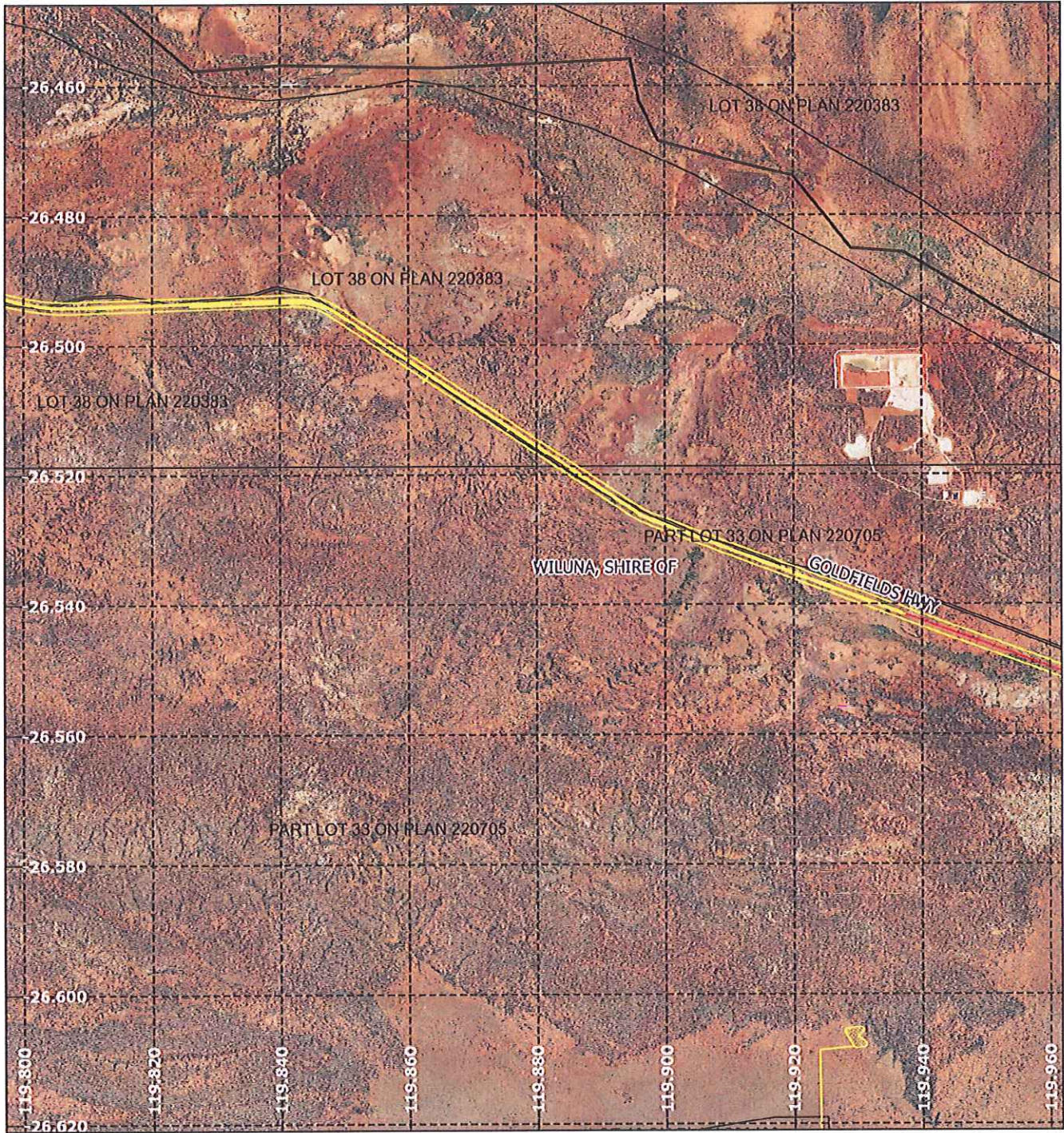
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Officer with delegated authority under Section 20
of the Environmental Protection Act 1986



Plan 6753/1k



Legend

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-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



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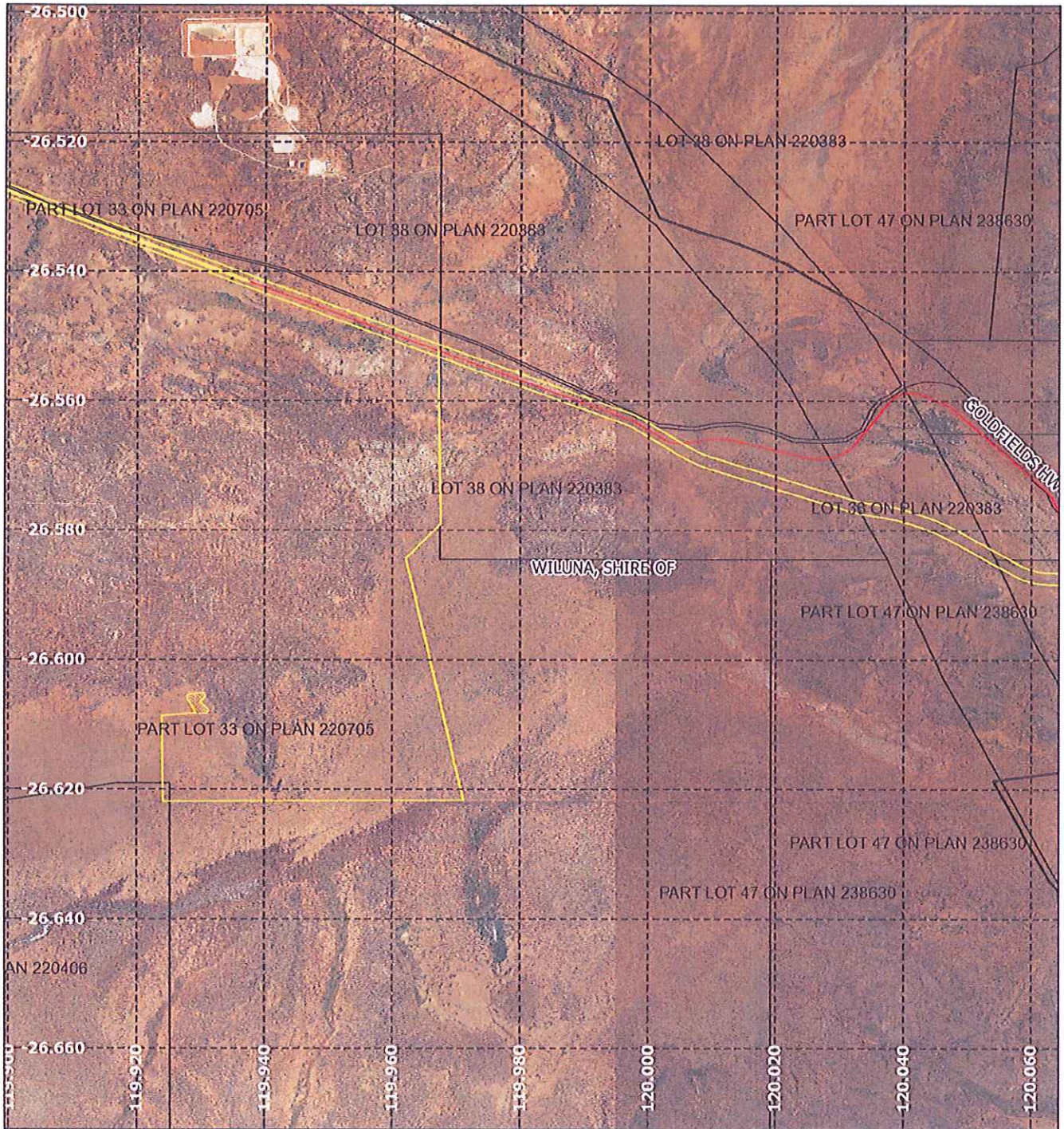
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[Signature] Date 25/8/16

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Plan 6753/11



Legend

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-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



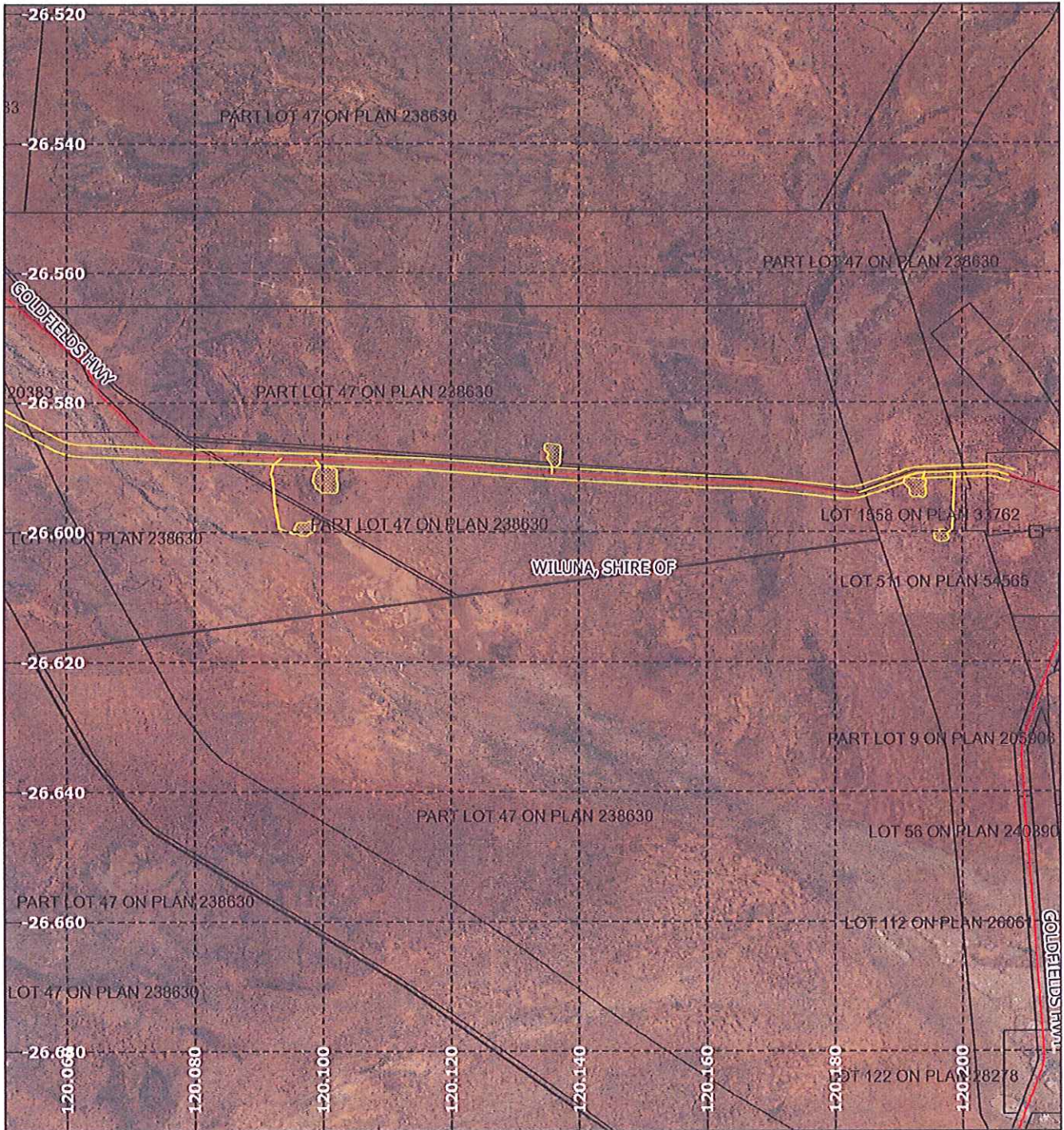
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Geocentric Datum of Australia 1994

Signature Date *25/8/16*

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Plan 6753/1m



Legend

-  Areas approved to clear
-  Cadastre
-  Roads
-  local_gov_authority
- Virtual Mosaic



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MGA94
Geocentric Datum of Australia 1994

J. W. ... Date 25/8/16

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



GOVERNMENT OF
WESTERN AUSTRALIA



1. Application details

1.1. Permit application details

Permit application No.: 6753/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Commissioner of Main Roads Western Australia

1.3. Property details

Property:

- Lot 33 on Plan 220705, Wiluna
- Lot 38 on Plan on Plan220383, Wiluna
- Lot 46 on Plan 220406, Wiluna
- Lot 47 on Plan 238630, Wiluna
- Lot 57 on Plan 93377, Wiluna
- Lot 136 on Plan 36742, Wiluna
- Lot 1555 on Plan 33762, Wiluna
- Lot 1558 on Plan 33762, Wiluna
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- Goldfields Highway Road Reserve (PINs 1343845, 1343846, 1343847, 1343848, 1343855, 1345581, 11725127, 11725128, 11725129, 11725903), Wiluna
- Lot 37 on Plan 91821, Meekatharra
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- Lot 64 on Plan 184574, Meekatharra
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- Unallocated Crown Land (PIN 1018559), Meekatharra
- Goldfields Highway Road Reserve (PIN 11725138, 11725139, 11725140, 11725141, 11725142, 11725548, 11725903, 11725904, 11725905, 11725906, 12052624), Meekatharra

Local Government Authority: Shire of Meekatharra and Shire of Wiluna
DER Region: Goldfields
Localities:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
534		Mechanical Removal	Road upgrades, drainage, fencing, material pits and camps.

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 25 August 2016
Reasons for Decision: The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*, and it has been concluded that the proposed clearing is at variance to Principle (a), (f) and (g), may be at variance to Principle (b) and (i) and is not or not likely to be at variance to any of the remaining clearing principles.

The Delegated Officer determined that the proposed clearing will impact on two priority flora taxa, a number of priority ecological communities and vegetation growing in association with watercourses, is likely to cause land degradation in the form of wind erosion, may impact on significant habitat for the priority fauna long-tailed dunnart, and may cause in deterioration in surface water quality.

The clearing permit will include conditions requiring the Permit Holder to minimise the risk of the introduction and spread of weeds, implement and adhere to management plans.

State policies and other relevant policies have been taken into consideration in this decision.

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
<p>There are nine Beard vegetation associations mapped within the application areas (Shepherd et al., 2001):</p> <ul style="list-style-type: none"> • 11: Comprises medium woodland; coolabah (<i>Eucalyptus microtheca</i>). • 18: Comprises low woodland; mulga (<i>Acacia aneura</i>). • 28: Comprises open low woodland; mulga. • 29: Comprises sparse low woodland; mulga, discontinuous in scattered groups. • 39: Comprises shrublands; mulga scrub. • 107: Comprises hummock grasslands, shrub steppe; mulga and <i>Eucalyptus kingsmillii</i> over hard spinifex. • 202: Comprises shrublands; mulga and <i>Acacia quadrimarginea</i> scrub. • 204: Comprises succulent steppe with open scrub; scattered mulga and <i>Acacia sclerosperma</i> over saltbush and bluebush. • 223: Comprises succulent steppe with open scrub; scattered mulga over saltbush and bluebush. 	<p>The applicant proposes to clear up to 534 hectares of native vegetation within various properties, road reserves, Crown reserves and unallocated Crown land within Meekatharra and Wiluna, for the purposes of road upgrades, drainage, fencing, material pits and camps.</p>	<p>Pristine; No obvious signs of disturbance (Keighery, 1994).</p> <p>To</p> <p>Completely Degraded; No longer intact, completely/almost completely without native species (Keighery, 1994).</p>	<p>An Environmental Impact Assessment undertaken by GHD (2014), which incorporated level 1 flora and fauna surveys of a larger footprint area that included the application areas, identified six structural formations containing 25 vegetation associations (including two disturbance related associations):</p> <ul style="list-style-type: none"> • VA01: Mixed tall shrubland on stony plains: <i>Acacia pteraneura</i>, <i>A. craspedocarpa</i>, <i>A. incurvaneura</i> tall sparse shrubland over <i>tetragonophylla</i> isolated shrubs over <i>Eremophila fraseri</i>, <i>E. forrestii</i> low sparse shrubland over <i>Aristida contorta</i>, <i>Eriachne helmsii</i>, <i>Tripogon loliiformis</i> open tussock grassland. • VA02: <i>Acacia aptaneura</i> low woodland: <i>A. aptaneura</i> with <i>Hakea lorea</i> low woodland over <i>A. aptaneura</i>, <i>A. craspedocarpa</i>, <i>A. tetragonophylla</i> tall open shrubland over <i>Ptilotus obovatus</i>, <i>Solanum lasiophyllum</i>, <i>Abutilon oxycarpum</i> low sparse shrubland over <i>Eriachne helmsii</i>, <i>Eulalia aurea</i>, <i>Aristida contorta</i> sparse tussock grassland. • VA03: Mixed <i>Acacia</i> low woodland: <i>Acacia aptaneura</i>, <i>A. pteraneura</i> <i>A. pruinocarpa</i> low woodland over <i>A. aptaneura</i>, <i>A. craspedocarpa</i>, <i>A. ramulosa</i> var. <i>linophylla</i>, <i>Eremophila fraseri</i> tall open shrubland over <i>Acacia</i> spp. sparse shrubland over <i>Ptilotus obovatus</i>, <i>Eremophila jucunda</i>, <i>Abutilon oxycarpum</i> low sparse shrubland over <i>Eriachne helmsii</i>, <i>E. eriopoda</i>, <i>Aristida contorta</i> sparse tussock grassland. • VA04: Mixed <i>Acacia</i> tall shrubland on broadwash plains: <i>Acacia pteraneura</i>, <i>A. pruinocarpa</i> isolated trees over <i>A. caesaneura</i>, <i>A. incurvaneura</i>, <i>A. aptaneura</i>, <i>A. mulganeura</i> over tall open shrubland over <i>A. craspedocarpa</i>, <i>A. tetragonophylla</i>, <i>A. ramulosa</i> var. <i>linophylla</i> over <i>Eremophila flabellata</i>, <i>Ptilotus obovatus</i>, <i>E. forrestii</i>, <i>E. spectabilis</i> subsp. <i>brevis</i> low sparse shrubland over <i>Eriachne helmsii</i>, <i>Aristida contorta</i>, <i>Eragrostis eriopoda</i> sparse tussock grassland. • VA05: Mixed low woodland: <i>Acacia aptaneura</i>, <i>Santalum lanceolatum</i>, <i>A. pteraneura</i> low woodland over <i>Sida ectogama</i>, <i>Eremophila latrobei</i>, <i>Senna artemisioides</i> subsp. <i>helmsii</i> sparse shrubland over <i>Ptilotus obovatus</i>, <i>Abutilon otocarpum</i> low sparse shrubland over <i>Aristida contorta</i>, <i>Eragrostis lanipes</i> isolated clumps of tussock grasses. • VA06: Mixed tall shrubland on stony hills: <i>Acacia pteraneura</i> isolated trees over <i>A. ramulosa</i> var. <i>linophylla</i>, <i>A. balsamea</i>, <i>Eremophila macmillaniana</i> tall sparse shrubland over <i>Senna artemisioides</i> subsp.

- helmsii*, *Eremophila macmillaniana*, *Senna* sp. Meekatharra (E. Bailey 1-26), *Ptilotus obovatus* sparse/low sparse shrubland over *Aristida contorta* open tussock grassland over *Ptilotus helipteroides*, *P. roei*, *Goodenia triodiophila* isolated clumps of herbs.
- **VA07:** Mixed *Acacia* tall shrubland on plains: *Eucalyptus kingsmillii* isolated trees over *Acacia incurvaneura*, *A. mulganeura*, *A. pteraneura* tall sparse shrubland over *A. incurvaneura*, *A. pteraneura*, *A. ramulosa* var. *linophylla* sparse shrubland over *Eremophila* spp., *Ptilotus obovatus* low sparse shrubland over *Triodia* spp. sparse hummock grassland over *Eriachne helmsii*, *Eragrostis eriopoda* sparse tussock grassland.
 - **VA08:** Mixed *Acacia* tall shrubland on low stony hills: *A. incurvaneura*, *A. rhodophloia*, *A. craspedocarpa* tall open shrubland over *Senna artemisioides* subsp. *helmsii*, *Eremophila forrestii*, *E. latrobei* subsp. *latrobei* sparse shrubland over *Sida* sp. Golden calyces, *E. forrestii*, *E. jucunda* subsp. *jucunda* low sparse shrubland over *Eriachne helmsii*, *Eragrostis eriopoda* isolated clumps of tussock grasses.
 - **VA09:** *Acacia burkittii* tall shrubland: *Acacia burkittii* tall open shrubland over *A. burkittii*, *A. tetragonophylla*, *Grevillea striata* sparse shrubland over *Senna artemisioides* subsp. *filiformis*, *Ptilotus obovatus*, *Salsola australis* low open shrubland over *Aristida contorta* isolated clumps of tussock grasses.
 - **VA10:** Open tussock grassland: *Grevillea berryana*, *Acacia incurvaneura* isolated shrubs over *Eremophila forrestii*, *Eremophila margarethae* low isolated shrubs over *Eriachne mucronata*, *Eragrostis xerophila* open tussock grassland over *Ptilotus schwartzii* isolated herbs.
 - **VA11:** *Triodia* hummock grassland: *Acacia pteraneura* isolated trees over *A. incurvaneura*, *A. caesaneura*, *A. mulganeura* tall shrubland over *A. ramulosa* var. *linophylla* isolated shrubs over *Eremophila forrestii*, *Ptilotus obovatus*, *Psyrax suaveolens* low isolated shrubs over *Triodia basedowii* hummock grassland.
 - **VA12:** *Eremophila* low shrubland: *Acacia pruinocarpa* isolated trees over *A. rhodophloia*, *Senna artemisioides* subsp. *x sturtii*, *S. glutinosa* subsp. *x luerssenii* sparse shrubland over *Eremophila latrobei*, *E. jucunda* subsp. *jucunda*, *Ptilotus obovatus*, *Senna artemisioides* subsp. *petiolaris* low open shrubland over *Eriachne helmsii*, *E. mucronata*, *Neurachne minor* sparse tussock grassland over *Ptilotus schwartzii* isolated clumps of herbs.
 - **VA13:** *Eriachne* tussock grassland: *Hakea lorea*, *Acacia aptaneura* isolated trees over *Hakea preissii*, *A. tetragonophylla* isolated shrubs over *Eriachne benthamii* tussock grassland.
 - **VA14:** Chenopod low shrubland: *Hakea preissii*, *Grevillea striata*, *Acacia tetragonophylla*, *A. aptaneura*, *A. incurvaneura* isolated tall shrubs/shrubs over *Sclerolaena cuneata*, *Maireana triptera*, *Ptilotus obovatus* low open shrubland.

- **VA19:** Mixed *Acacia* tall shrubland on rocky footslopes: *Acacia pruinocarpa* isolated trees over *Acacia rhodophloia*, *A. incurvaneura*, *A. mulganeura* tall open/open shrubland over *Eremophila margarethae*, *E. forrestii*, *E. latrobei* subsp. *latrobei*, *Ptilotus obovatus* low open shrubland over *Triodia melvillei* open hummock grassland over *Eriachne helmsii*, *Eragrostis eriopoda*, *E. xerophila* isolated clumps of tussock grasses.
- **VA20:** Mixed low shrubland on calcareous breakaways: *Acacia pteraneura*, *A. incurvaneura* tall sparse shrubland over *A. quadrimarginea*, *A. tetragonophylla*, *Eremophila latrobei* subsp. *latrobei* open shrubland over *Dodonaea pachyneura*, *Ptilotus obovatus*, *Eremophila latrobei* subsp. *latrobei* low open shrubland over *Aristida contorta*, *Eriachne pulchella* subsp. *dominii*, *E. mucronata* sparse tussock grassland.
- **VA21:** Mixed low shrubland on granite outcrops: *Acacia aptaneura* isolated trees over *A. quadrimarginea*, *A. incurvaneura*, *A. ramulosa* var. *linophylla* tall sparse shrubland over *Eremophila exilifolia*, *E. fraseri* open shrubland over *Ptilotus obovatus*, *E. jucunda* subsp. *jucunda*, *E. forrestii* low open shrubland over *Aristida contorta*, *Eriachne helmsii* sparse tussock grassland.
- **VA22:** Mixed *Acacia* tall shrubland on BIF: *Acacia incurvaneura*, *A. ayersiana* (narrow phyllodes variant) tall shrubland over *Eremophila fraseri*, *Senna artemisioides* subsp. *helmsii*, *S. sp.* Meekatharra (*E. Bailey*) sparse shrubland over *Eremophila exilifolia*, *Ptilotus obovatus*, *Tribulus suberosus* low sparse shrubland over *Aristida contorta* open tussock grassland over *Ptilotus helipteroides*, *Cheilanthes sieberi*, *Lepidium oxytrichum* sparse hermland.
- **VA23:** Mixed low shrubland on outcrops: *Acacia quadrimarginea* sparse shrubland over *Calytrix carinata*, *C. desolata*, *Prostanthera campbellii*, *Micromyrtus sulphurea* low shrubland over *Eriachne mucronata* tussock grassland over *Stylidium longibracteatum* isolated clumps of herbs.
- **VA24:** *Corymbia* open woodland: *Corymbia lenziana*, *Acacia ayersiana* open woodland over *Grevillea juncifolia* subsp. *juncifolia*, *A. jamesiana*, *Pittosporum angustifolium* tall open shrubland over *Alyogyne pinoniana*, *Acacia sclerosperma* subsp. *sclerosperma*, *Senna artemisioides* subsp. *filifolia* sparse shrubland over *Dicrastylis sessilifolia*, *Rhagodia eremaea*, *Ptilotus polystachyus* low sparse shrubland over *Eriachne helmsii*, *Eragrostis setifolia*, *Eriachne helmsii* sparse tussock grassland.
- **VA25:** *Acacia rhodophloia* tall shrubland: *A. rhodophloia*, *A. incurvaneura*, tall shrubland over *Eremophila congesta* (P1), *E. latrobei* subsp. *latrobei*, *E. punctata* open shrubland over *E. jucunda* subsp. *jucunda*, *E. latrobei* subsp. *latrobei*, *E. congesta* (P1), *Sida* sp. Golden calyces low open shrubland over *Eriachne helmsii*, *Eragrostis eriopoda* isolated clumps of tussock grasses.
- **VA26:** *Casuarina pauper* tall shrubland: *C.*

pauper tall shrubland with *Hakea preissii*, *Grevillea striata*, *Acacia tetragonophylla*, *A. aptaneura*, *A. incurvaneura* isolated tall shrubs/shrubs over *Sclerolaena cuneata*, *Maireana triptera*, *Ptilotus obovatus* low open shrubland.

- **VA27:** Mixed *Acacia* tall shrubland on plains: *Eucalyptus lucasii* and *E. eremicola* subsp. *peeneri* isolated mallees over *Acacia murrayana* tall sparse shrubland with *A. incurvaneura*, *A. pteraneura*, *A. ramulosa* var. *linophylla* sparse shrubland over *Eremophila* spp., *Ptilotus obovatus* low sparse shrubland over *Triodia* spp. sparse hummock grassland over *Eriachne helmsii*, *Eragrostis eriopoda* sparse tussock grassland.
- **VA28:** *Triodia basedowii* hummock grassland: *Corymbia lenziana* isolated trees over *Acacia ramulosa* var. *ramulosa* isolated shrubs over *Keraudrenia* sp. over *Triodia basedowii* hummock grassland.

3. Assessment of application against clearing principles

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

Comments Proposed clearing is at variance to this Principle

Main Roads Western Australia (MRWA) proposes to clear up to 534 hectares of native vegetation within various properties, road reserves, Crown reserves and unallocated Crown land within the Shires of Meekatharra and Wiluna, for the purposes of road upgrades, drainage, fencing, material pits and camps.

GHD (2014) conducted an Environmental Impact Assessment (EIA) which incorporated level 1 flora and fauna surveys of a larger footprint area that included the application areas. The flora survey identified 398 flora taxa (including subspecies and varieties) representing 53 families and 154 genera (GHD, 2014). Of the taxa identified, 391 were native taxa and seven introduced (GHD, 2014).

The surveyed area comprises six structural formations which contain 28 vegetation associations (including two disturbance related associations), summarised as, woodlands (containing six vegetation associations), tall shrublands (containing 11 vegetation associations), low shrublands (containing five vegetation associations), tussock grasslands (containing two vegetation associations), hummock grasslands (containing two vegetation associations) and disturbed areas (containing two vegetation associations) (GHD, 2014).

The majority of the surveyed area ranges from excellent to very good (Keighery, 1994) condition (GHD, 2014) with some areas of previous disturbance in a degraded to completely degraded (Keighery, 1994) condition. Areas of better condition vegetation were generally recorded from breakaways, outcrops and stony hills (GHD, 2014). The most noticeable areas of disturbance throughout the surveyed area included existing borrow pits, pastoral infrastructure areas and roadside margins.

Two priority flora species, *Stackhousia clementii* and *Ptilotus luteolus* (both Priority 3), were identified within the application areas during the flora survey (GHD, 2014).

Stackhousia clementii (Priority 3) is a dense broom-like perennial, herb, growing to 0.45 metres high. This species has green/yellow/brown flowers and grows within skeletal soils in sandstone hills (Western Australian Herbarium, 1998-), and a broad distribution of approximately 1400 kilometres east-west and 700 kilometres north-south (Parks and Wildlife, 2015a). The flora survey indicates that many individuals (average of 180 individuals per 100 metres squared) of this species were recorded within the *Eucalyptus* woodland (VA15) vegetation association in the Bubble Creek area (GHD, 2014). The EIA indicates that impacts to the mapped extent of this vegetation type would be approximately 2.6 per cent (GHD, 2014). Assuming that *Stackhousia clementii* occurs in similar numbers throughout the VA15 vegetation association, it is likely that the risk to the conservation of the species at either the local or regional scale is low (Parks and Wildlife, 2015a). Therefore it is considered that the proposed clearing is unlikely to impact on the conservation status of this species.

Ptilotus luteolus (Priority 3) is a compact shrub growing to 30 centimetres high that grows on rocky slopes. This species has green-yellow flowers and has been recorded flowering between August and September (Western Australian Herbarium, 1998-), and a range of approximately 500 kilometres east-west and 400 kilometres north-south. The flora survey identified two individuals of this species within a proposed material pit area with a third individual recorded just outside of the material pit (GHD, 2014). Given the broad distribution of the species and that it is common at the western edge of its distribution, particularly around the Kennedy Range, it is considered that the proposed clearing is unlikely to impact on the conservation of this species (Parks and Wildlife, 2015a).

GHD (2014) has prepared an Environmental Management Plan (EMP) for the proposed works which states that conservation significant flora will be clearly marked on site and fencing shall be constructed to delineate the project area from conservation significant flora and communities.

No threatened ecological communities (TEC) were identified within the surveyed area during the level 1 flora survey. Based on the vegetation communities present, it is considered unlikely that any TECs would be impacted as a result of the proposed clearing (GHD, 2014).

No rare flora species were identified within the surveyed area during the level 1 flora survey (GHD, 2014).

The application areas intersect two calcrete groundwater assemblages (CGA), known as the Killara Calcrete and Millbillie Bubble Well Calcrete, as currently mapped by the Department of Parks and Wildlife (Parks and Wildlife). These CGAs are recognised as Priority 1 priority ecological communities (PEC). A further CGA known as Paroo Calcrete (Priority 1 PEC) occurs approximately one kilometre from the application areas, and the EIA notes that more calcrete areas harbouring significant assemblages may occur along the application areas (GHD, 2014).

The EIA contains a number of recommendations in respect to managing impacts to CGAs (GHD, 2014):

- Where there is a likelihood that a CGA or other calcrete deposit may be affected by the highway works, a field inspection by a suitably qualified person (geologist, hydrogeologist or groundwater ecologist) is undertaken to confirm that sites selected for groundwater pumping and gravel pits are located to avoid calcrete.
- That groundwater pumping operations are managed to ensure that a minimum two kilometre buffer of zero drawdown is maintained between any calcrete deposit and the maximum limit of drawdown propagation from a groundwater pumping station.
- That modelling of lateral drawdown propagation is undertaken to ensure a two kilometre buffer of zero drawdown to any calcrete.
- That gravel pits should be placed to avoid all calcrete groundwater assemblages.
- That all gravel pits be a minimum of 500 metres from any calcrete deposit.
- That the highway design should aim to maintain natural hydrological processes and water quality as far as possible.
- That best practice management is applied to potential pollutants including management of leaks and spills.

Some of these issues are considered in the EMP provided by the applicant, however insufficient detail is provided to ensure that these commitments will adequately mitigate impacts to CGAs.

Furthermore, whilst the EIA contains geological maps identifying the location of CGAs, Parks and Wildlife (2015b) advised that more accurate mapping of the geological boundaries of the CGAs overlaid on the application areas is required so that appropriate management can be applied in seeking to minimise impacts to groundwater and surface water flows and chemistry within the calcretes. The applicant also needs to locate borefields to avoid impacts to the calcrete groundwater aquifers, and specify best practice procedures that will be applied to minimise/avoid impacts to groundwater and surface water quality near the calcrete PECs (Parks and Wildlife, 2015b).

The fauna survey identified 102 fauna species within the surveyed area (GHD, 2014). Of these, four are recognised as conservation significant, including the grey falcon (*Falco hypoleucos*), rainbow bee-eater (*Merops ornatus*), bush stone-curlew (*Burhinus grallarius*) and the brush-tailed mulgara (*Dasymercus blythi*). A further four conservation significant fauna species were considered likely to occur within the application areas, including the good-legged skink (*Lerista eupoda*), long-tailed dunnart (*Lerista sminthopsis longicaudata*), malleefowl (*Leipoa ocellata*), and peregrine falcon (*Falco peregrinus macropus*) (GHD, 2014).

Of these conservation significant fauna species, the proposed clearing has the potential to impact on significant habitat for the long-tailed dunnart (Priority 4), which is found in rocky scree and plateau areas, generally with little vegetation (Burbidge et al., 2008). Rocky habitat occurs in isolated areas throughout the survey area, including rocky outcrops and breakaways (mostly calcareous). The proposed clearing would result in a loss of 5.48 hectares of suitable habitat for this species (GHD, 2014). The rocky outcrop habitat could provide valuable refuge habitat for the species, particularly given that it occurs in isolated areas. Therefore, at a local scale, this habitat has the potential to be significant for this species (Parks and Wildlife, 2015c).

Whilst the proposed clearing areas provide suitable habitat for a number of the other fauna species, given that much of the proposed clearing is linear and occurs within close proximity to areas of disturbance associated with the existing highway and occurs within an extensively vegetated landscape (greater than 90 per cent native vegetation cover) it is unlikely that the vegetation under application is significant for these. There is however the potential for fauna deaths and injuries during works, particularly to the brush-tailed mulgara and malleefowl. The applicant prepared an Environmental Management Plan, however it does not outline specific or detailed management measures for these species.

Seven weed species have been identified within the application areas, including *Acetosa vesicaria*, *Bidens pinnata* (bipinnate begger's tick), *Cenchrus ciliaris* (buffel grass), *Citrullus lanatus* (pie melon), *Cuscuta planiflora*, *Lysimachia arvensis* and *Setaria verticillata* (GHD, 2014). These species were recorded in small densities in isolated occurrences scattered throughout the Survey Area (GHD, 2014).

The EIA identified that the proposed clearing has the potential to increase the spread of weeds along the highway, introduce new weed species into the area through construction traffic and soil movement and introduce weeds into areas in which they did not previously occur (GHD, 2014). To mitigate the potential for weed spread, the applicant has advised that plant, machinery, equipment, tools and footwear will be cleaned down prior to arrival and prior to departure from the site. Clean down will consist of brushing, gouging, scraping and/or water blasting to remove any compacted soil or plant matter (GHD, 2014).

Noting that the proposed clearing will impact on several PECs, may impact on significant habitat for the long-tailed dunnart and includes two priority flora species, it is considered that the vegetation under application comprises a high level of biological diversity.

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

Methodology

References:

Burbidge et al. (2008)
GHD (2014)
Keighery (1994)
Parks and Wildlife (2015a)
Parks and Wildlife (2015b)
Parks and Wildlife (2015c)
Western Australian Herbarium (1998-)

GIS Datasets:

- NLWRA, Current Extent of Native Vegetation
- SAC Bio Datasets (Accessed December 2015)

(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

Proposed clearing may be at variance to this Principle

GHD (2014) conducted an Environmental Impact Assessment (EIA) which incorporated level 1 flora and fauna surveys of a larger footprint area that included the application areas. The fauna survey identified a total of 102 fauna species within the surveyed area, comprising 63 birds, 19 reptiles, 19 mammals and one amphibian (GHD, 2014). Of these species, four are recognised as conservation significant fauna species, these include the grey falcon (*Falco hypoleucos*), rainbow bee-eater (*Merops ornatus*), bush stone-curlew (*Burhinus grallarius*) and the brush-tailed mulgara (*Dasycercus blythi*). A further four species were considered likely to occur within the application areas, including good-legged skink (*Lerista eupoda*), long-tailed dunnart (*Sminthopsis longicaudata*), malleefowl (*Leipoa ocellata*), and peregrine falcon (*Falco peregrinus macropus*) (GHD, 2014).

The bush stone curlew, grey falcon, peregrine falcon and rainbow bee-eater are wide ranging and highly mobile avian species, and given the presence of other extensively vegetated areas comprising suitable habitat for these species within the local and regional area, it is not likely that the vegetation under application provides significant habitat for these species.

Suitable habitat for the good-legged skink (Priority 1) was identified on site, however the habitat identified has undergone significant historical disturbance, and there is other suitable habitat within the local and regional area that provides higher quality habitat for this species.

The long-tailed dunnart (Priority 4) is found in rocky scree and plateau areas, generally with little vegetation or of spinifex hummock grassland, shrubs, and open woodland (Burbidge et al., 2008). Rocky habitat occurs in isolated areas throughout the Survey Area, including rocky outcrops and breakaways (mostly calcareous). The proposed clearing would result in a loss of 5.48 hectares of suitable habitat for this species (GHD, 2014). The rocky outcrop habitat could provide valuable refuge habitat for the species, particularly given that it occurs in isolated areas. Therefore, at a local scale, this habitat has the potential to be significant for this species (Parks and Wildlife, 2015c).

Malleefowl, listed as 'rare or likely to become extinct' under the *Wildlife Conservation Act 1950* (WC Act), are found in semi-arid shrublands and low woodlands dominated by mallee eucalypts and acacias, and feed opportunistically on a variety of flora, fungi and invertebrates (Parks and Wildlife, 2015d). Malleefowl often require sandy substrate and abundant leaf litter for breeding (Parks and Wildlife, 2015d). An active mound was recently (2010) located within three kilometres of the proposed clearing area within the Mooloogool ex-pastoral lease, and there have been multiple malleefowl sightings within 100 kilometres (Parks and Wildlife, 2015c). It is likely that the proposed clearing area comprises suitable breeding and foraging habitat for this species, however this is unlikely to be significant habitat given the surrounding extensively vegetated landscape that has undergone fewer disturbances than the application areas. Whilst the vegetation under application is not likely to comprise significant habitat for malleefowl, there is the potential for fauna deaths to occur as a result of clearing if malleefowl mounds occur on site.

The brush-tailed mulgara (Priority 4) occupies spinifex (*Triodia* spp.) grasslands, and burrows in flats between sand dunes. It is generally a solitary species that hunts at night, although it is not strictly nocturnal (GHD, 2014). There are multiple recent (2006 to 2014) records of the species within the vicinity of the application areas, and active burrows have been located within the application areas (GHD, 2014). Whilst the largely linear area proposed clearing, within an extensively vegetated landscape, is not likely to impact on significant habitat for this species, there is the potential for fauna deaths to occur as a result of clearing. It has been identified that this species would be particularly susceptible to vehicle strikes during the construction phase, given the proximity of active burrows within close proximity to the application areas (GHD, 2014).

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

Methodology References:
Burbidge et al. (2008)
GHD (2014)
Parks and Wildlife (2015c)
Parks and Wildlife (2015d)

GIS Datasets:
- NLWRA, Current Extent of Native Vegetation

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

Comments **Proposed clearing is not likely to be at variance to this Principle**
GHD (2014) conducted an Environmental Impact Assessment which incorporated level 1 flora and fauna surveys of a larger footprint area that included the application areas. The flora survey did not identify any rare flora species within the application areas or greater survey area (GHD, 2014), therefore the application areas are not likely to include or be necessary for the continued existence of rare flora.

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

Methodology References:
GHD (2014)

(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 **Proposed clearing is not likely to be at variance to this Principle**
GHD (2014) conducted an Environmental Impact Assessment which incorporated level 1 flora and fauna surveys of a larger footprint area that included the application areas. No threatened ecological communities (TEC) were identified within the application areas or greater survey area, and based on the vegetation communities present, it was determined unlikely that any TEC's would be impacted as a result of clearing (GHD, 2014).

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

Methodology References:
GHD (2014)

(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 **Proposed clearing is not 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 application areas occur within the Mallee Bioregion, Shire of Wiluna and Shire of Meekatharra, which retain approximately 99.7, 99.9 and 99.8 per cent of their pre-European vegetation extents respectively (Government of Western Australia, 2014). There are nine mapped Beard vegetation associations within the application areas and all of these retain greater than 98 per cent of their pre-European extents within the Mallee Bioregion.

The application areas include vegetation largely in excellent to very good (Keighery, 1994) condition, and includes priority flora species and priority ecological communities, however the application areas are not within an area that has been extensively cleared.

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

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Pre-European Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Murchison	28,120,586	28,044,823	99.7	7.7
Local government*				
Shire of Wiluna	18,129,724	18,115,207	99.9	3.4
Shire of Meekatharra	10,018,860	10,005,831	99.8	8.2
Beard vegetation association in Bioregion*				
11	9,178	9,153	99.7	0
18	12,403,172	12,363,252	99.6	4.9
28	224,291	220,583	98.3	0
29	2,956,382	2,955,695	99.9	3.1
39	1,148,400	1,138,064	99.1	3.5
107	2,792,383	2,790,992	99.9	11.6
202	339,742	339,641	99.9	21.2
204	185,601	184,861	99.6	7.2
223	2,597	2,597	100	0

Methodology References:
Commonwealth of Australia (2001)
*Government of Western Australia (2015)
Keighery (1994)

(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 **Proposed clearing is at variance to this Principle**
GHD (2014) conducted an Environmental Impact Assessment which incorporated level 1 flora and fauna surveys of a larger footprint area that included the application areas. The surveys did not identify any wetlands, drainage channels or rivers within the application areas. However, there are a number of minor watercourses that intersect the application areas, including Bubble Creek at the eastern end (GHD, 2014).

The minor watercourses within the application areas contain vegetation types: VA15 'Eucalyptus camaldulensis woodland over mixed shrubland in ephemeral drainage lines and adjacent floodplains' and VA02 'Acacia aptaneura low woodland' (GHD, 2014). Both vegetation associations are restricted to ephemeral drainage lines and adjacent floodplains, and support riparian taxa. These vegetation types comprise approximately 6.5 and 8.5 hectares of the application areas respectively (GHD, 2014).

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

The applicant advised that the proposed works would be undertaken during the dry season when minor watercourses are dry, which would minimise the potential for sedimentation further along the watercourse. Therefore impacts to riparian vegetation would be localised. The applicant has also advised that temporary cleared areas would be revegetated post clearing. It is considered that this would further aid in the mitigation of long term impacts.

Methodology References:
GHD (2014)

GIS Databases:
- Hydrography linear
- Hydrography hierarchy
- Goldfields Waterbodies

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

Comments **Proposed clearing is at variance to this Principle**
There are nine soil types mapped within the application areas, with the dominant mapped soil types on site described as shallow stony earthy loams and shallow earthy loams underlain by red-brown hardpan. There are also some shallow acidic red earths, red earthy sands and shallow siliceous sands (Northcote et al., 1960-68).

The Environmental Impact Assessment (GHD, 2014) identified potential land management issues for the 13 land systems within the application areas, whereby it was identified that some of the land systems have a moderate to high susceptibility for accelerated erosion, particularly water erosion within the floodplain areas immediately post clearing. There is also the potential for minor wind erosion to occur within the sandy areas under application.

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

To minimise the potential for water erosion, the applicant's Environmental Management Plan states that the proposed works would be undertaken during the dry season when minor watercourses and floodplains are dry (GHD, 2014). Further, any erosion issues are likely to be short term given that there would be a requirement for temporarily cleared areas to be revegetated (camp sites, extraction areas, etc). Permanently cleared areas associated with the road construction would be covered with bitumen, which would minimise the extent of areas of open or disturbed ground and the time that the soils will be susceptible to erosion (GHD, 2014).

Methodology References:
GHD (2014)
Northcote et al. (1960-68)

GIS Datasets
- SAC Bio Datasets (Accessed December 2015)

(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 Proposed clearing is not likely to be at variance to this Principle

The closest conservation area to the application areas is Wanjarri Nature Reserve located approximately 92 kilometres south east. Given the distance to Wanjarri Nature Reserve, and extent of vegetation remaining within the Mallee Bioregion (greater than 99 per cent), the proposed clearing is not likely to impact on any conservation areas.

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

Methodology GIS Databases:
- Parks and Wildlife 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 Proposed clearing may be at variance to this Principle

GHD (2014) conducted an Environmental Impact Assessment which incorporated level 1 flora and fauna surveys of a larger footprint area that included the application areas. The surveys did not identify any wetlands, drainage channels or rivers within the application areas. However, there are a number of minor watercourses that intersect the application areas, including Bubble Creek at the eastern end (GHD, 2014).

There may be minor short term impacts to these creeklines during the proposed clearing, including potential soil erosion. This has the potential to result in increased sedimentation of the watercourses particularly immediately post clearing during periods of rainfall.

The groundwater salinity mapped over the application areas is mapped at between 500 and 7,000 milligrams per litre (marginal to brackish). The area of greatest salinity within the landscape is a large dry saline lake known as Lake Way, which occurs 15 kilometres south east of the proposed clearing area. Given the linearity of much of the proposed clearing and that the local area (20 kilometre radius) is extensively vegetated (retains greater than 90 per cent native vegetation), it is unlikely for the proposed clearing to result in a rise in groundwater and increased groundwater salinity levels.

The proposed clearing may result in water quality deterioration within the abovementioned minor watercourses post clearing.

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

The applicant advised that existing road drains and other drainage areas (natural or constructed) will be re-constructed after the completion of road works (GHD, 2014), and therefore long term impacts to surface water drainage will be minimal. In addition, the proposed works within the vicinity of the watercourses will be undertaken during the dry season, when the watercourses are unlikely to be flowing (GHD, 2014). It is considered that this would reduce the risk of impacting on surface water flows during construction.

Methodology References:
GHD (2014)

GIS Databases:
- Hydrography linear

- Hydrography hierarchy
- Goldfields Waterbodies
- NLWRA Current Extent of Native Vegetation

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

Comments Proposed clearing is not likely to be at variance to this Principle

The proposed clearing, which is largely linear in shape and located within, or within close proximity to the existing road, is unlikely to cause or exacerbate the incidence or intensity of flooding.

To minimise the risk of flooding, the applicant has advised that clearing would occur within the dry season when rainfall is limited (GHD, 2014). It is further advised that areas of temporary clearing will be rehabilitated following construction, including the proposed borrow pits, which would be progressively rehabilitated to ensure that run-off is minimised (GHD, 2014).

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

Methodology References:
GHD (2014)

Planning instruments and other relevant matters.

Comments The section of Goldfields Highway between Wiluna and Meekatharra is approximately 182 kilometres in length and is a key route that links industry and community between the Goldfields-Esperance region and the Mid-West / Pilbara regions (GHD, 2014). It is advised that the majority of this section of the highway is unsealed, and the sealing of this highway has been proposed as part of the PortLink Inland Freight Corridor Development Plan (GHD, 2014).

The development involves the investigation, design and construction of the Goldfields Highway Wiluna to Meekatharra Section. Main Roads proposes to upgrade this section to highway standard. The proposed clearing comprises the following components: 145 kilometres of resealing works, 18 kilometres of minor re-alignment, raising and sealing of the road, six intersection upgrades, drainage improvements including floodway's and levees, approximately 220 kilometres of fencing, eight material pit extraction sites and two construction camp areas (GHD, 2014).

On 5 October 2015 the application was advertised in *The West Australian* newspaper for a 21-day public submission period. No submissions were received from the public in response to the proposed clearing.

The application area is located within a Native Title claim area and the claimants (Wiluna and Yugunga-Nya People People) and their representatives were given the opportunity to make comment on the application under s24KA of the *Native Title Act 1993*. A response has not yet been received from the claimants or representatives.

There are several Aboriginal Sites of Significance which intersect the application area. It is the applicant's responsibility to comply with the Aboriginal Heritage Act 1972 and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

The proposed clearing was referred to the Environmental Protection Authority (EPA). The EPA made a decision to not assess the proposal on 18 May 2015.

On 10 February 2016 a Delegated Officer of the Department of Environment Regulation (DER) wrote to the applicant (DER ref. A1048816), advising of significant environmental impacts identified during the preliminary assessment of the application. The letter requested the applicant to provide the following information to inform a decision on the application:

- more accurate mapping of the geological boundaries of the CGAs overlaid on the application area so that appropriate management can be applied in seeking to minimise impacts to groundwater and surface water flows and chemistry within the calcretes;
- the location of borefields so that impacts to the calcrete groundwater aquifers can be avoided, which would also allow for the avoidance of impacts to groundwater and surface water quality near the calcrete CGAs;
- a commitment to the CGA management measure recommendations outlined in the level 1 flora survey;
- a detailed management plan that specifically outlines management practices to minimise impacts to the long-tailed dunnart, mulgara, and malleefowl, which should include a commitment to the removal and relocation of mulgara pre-clearing and to undertaking pre-clearing surveys for malleefowl mounds; and
- an updated Environmental Management Plan (EMP) to address the impacts identified.

On 29 April 2016 the applicant provided further information in respect to the above matters (DER ref. A1097668), including:

- the Department of Parks and Wildlife Species and Communities Branch should be contacted directly to obtain the most current information in respect to CGA locations;
- MRWA has licences to take groundwater near the application area subject to monitoring and reporting conditions, granted by the Department of Water (DoW) following assessment of the impacts of taking

- groundwater including to groundwater-dependent ecosystems;
- in relation to the CGA recommendations provided in the Environmental Impact Assessment (EIA), MRWA will abide by DoW licence conditions with respect to groundwater abstraction, gravel pits are not in the vicinity of known CGAs, hydrological processes and water quality will be maintained as much as practicable, low probability of leaks and spills in the vicinity of CGAs, MRWA has best practice management in place to manage pollution; and
- MRWA will update the EMP to include management measures to reduce impacts to the long-tailed dunnart, mulgara and malleefowl, removal and relocation of mulgara will occur prior to clearing mulgara habitat identified in the EIA, and a search for malleefowl mounds will occur prior to clearing.

On 23 May 2016 a Delegated Officer of DER emailed DoW (DER ref. A1102631), requesting a copy of the assessment undertaken by DoW in relation to the impacts of groundwater drawdown to groundwater dependent ecosystems for the water licences GWL160784(1) SLK 608-646 and GWL81976(3) SLK 632-770. On 25 May 2016 DoW provided copies of internal documents relating to the assessment of GWL81976(3), which indicate that the basic operating strategy prepared by AECOM (dated 9 December 2013) is satisfactory, and should ensure that the prediction of acceptable impacts is confirmed by monitoring and that contingencies are in place to enable compliance with the licence.

On 8 June 2016 the Delegated Officer wrote to the applicant (DER ref. A1111396), acknowledging the applicant's response received on 29 April 2016, outlining the advice provided by DoW in May 2016, and requesting an updated EMP to address the impacts identified in the preliminary assessment.

On 29 July 2016 the applicant provided an updated EMP as requested in the Delegated Officer's letter of 8 June 2016 (DER ref. A1144220).

Methodology References:
GHD (2014)

4. References

- Burbidge, A., McKenzie, N., and Woinarski, J. (2008) *Sminthopsis longicaudata*. The IUCN Red List of Threatened Species 2008: Downloaded on 21 December 2015.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Department of Parks and Wildlife (Parks and Wildlife) (2015a) Advice for Conservation Significant Flora for Clearing Permit Application CPS 6753/1. Department of Parks and Wildlife, Perth, Western Australia. DER Ref A1016505.
- Department of Parks and Wildlife (Parks and Wildlife) (2015b) Advice for Priority Ecological Communities for Clearing Permit Application CPS 6753/1. Department of Parks and Wildlife, Perth, Western Australia. DER Ref A1016503.
- Department of Parks and Wildlife (Parks and Wildlife) (2015c) Advice for Conservation Significant Fauna for Clearing Permit Application CPS 6753/1. Department of Parks and Wildlife, Perth, Western Australia. DER Ref A1016499.
- Department of Parks and Wildlife (Parks and Wildlife) (2015d) Advice for Conservation Significant Fauna for Clearing Permit Application CPS 6752/1. Department of Parks and Wildlife, Perth, Western Australia. DER Ref A1023019.
- GHD (2014) Goldfields Highway Wiluna to Meekatharra PortLink Project Environment Impact Assessment and Management Plan. Additional Information for Clearing Permit Application CPS 6753/1. DER Ref A963701.
- Government of Western Australia (2015) 2015 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2015. WA Department of Parks and Wildlife, Perth.
- Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Northcote, K.H. with Beckmann, G.G., Bettenay, E., Churchward, H.M., van Dijk, D.C., Dimmock, G.M., Hubble, G.D., Isbell, R.F., McArthur, W.M., Murtha, G.G., Nicolls, K.D., Paton, T.R., Thompson, C.H., Webb, A.A. and Wright, M.J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed December 2015).