GOVERNMENT OF WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 6244/2
Permit Holder:	Forge Resources Swan Pty Ltd
Duration of Permit:	20 December 2014 to 8 December 2020

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 purposes of geotechnical, water and other investigations including associated access tracks.

2. **Land on which clearing is to be done**
   Crown Reserve (R 12252), Sherlock
   Easement (PINs 11831455, 11831454), Sherlock
   Lot 49 on Deposited Plan 220711, Sherlock
   Lot 51 on Deposited Plan 238028, Sherlock
   Lot 78 on Deposited Plan 219351, Sherlock
   Lot 79 on Deposited Plan 219326, Sherlock
   Lot 92 on Deposited Plan 221146 (Crown Reserve R 9701), Sherlock
   Lot 554 on Deposited Plan 407837 (Crown Reserve R 1449), Sherlock
   Road Reserve (PINs 11732890, 11732138, 11732331, 11732330, 11732108 11732109, 11732112, 11732326), Sherlock
   Lot 52 on Deposited Plan 238012, Chichester
   Lot 83 on Deposited Plan 238012, Chichester
   Road Reserve (PINs 11732078, 11732085, 11732086, 11732087), Chichester
   Unallocated Crown Land (PINs 1019499, 1019500, 1019502), Chichester

3. **Area of Clearing**
   The Permit Holder must not clear more than 63.5 hectares of native vegetation within the area cross-hatched yellow on attached Plan 6244/2a, Plan 6244/2b, Plan 6244/2c and Plan 6244/2d.

4. **Clearing not authorised**
   The Permit Holder shall only clear native vegetation within the areas shaded red on attached Plan 6244/2a, Plan 6244/2b, Plan 6244/2c and Plan 6244/2d for the purpose of *access tracks* and *associated drainage controls*.

5. **Period in which clearing is authorised**
   The Permit Holder shall not clear any native vegetation after 8 July 2020.

6. **Application**
   This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation authorised under this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

7. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the purposes described in condition 1 of this Permit to the extent that the Permit Holder has the right to access land under the *Land Administration Act 1997* or any other written law.

PART II – MANAGEMENT CONDITIONS

8. Avoid, minimise and reduce the impacts and extent of 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.

9. Weed control

When undertaking any clearing or other activity authorised under 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.

10. Flora Management

(a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder must demarcate the priority flora identified within reports '*Rutila Resources Railway Corridor Flora and Vegetation Assessment 9736-3882-14R Final, November 2014*' prepared by Ecoscape (Australia) Pty Ltd and '*Supplementary flora and vegetation survey and terrestrial fauna survey for the Balla Balla Infrastructure Project 1155-PIO-BBI-ECO, July 2018*' prepared by Phoenix Environmental Sciences; at the following locations:

'*Rutila Resources Railway Corridor Flora and Vegetation Assessment 9736-3882-14R Final, November 2014*' prepared by Ecoscape (Australia) Pty Ltd:

Species Name	Easting	Northing
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	596397	7663853
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	596373	7663935
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	596405	7663954
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	596391	7663902
Goodenia nuda	578289	7700070
Goodenia nuda	579041	7700036
Goodenia nuda	575331	7699462
Goodenia nuda	591289	7607286
Helichrysum oligochaetum	566845	7582615
Helichrysum oligochaetum	566780	7582634
Helichrysum oligochaetum	566145	7582790
Heliotropium muticum	592105	7677258
Heliotropium muticum	594286	7674156
Heliotropium muticum	576394	7691392
Heliotropium muticum	578764	7684815
Heliotropium muticum	592311	7677514
Heliotropium muticum	594402	7670353
Heliotropium muticum	592387	7677670

Species Name	Easting	Northing
Heliotropium muticum	576418	7691344
Heliotropium muticum	592517	7677786
Heliotropium muticum	578739	7684869
Heliotropium muticum	591591	7678368
Heliotropium muticum	574765	7700864
Heliotropium muticum	582858	7681525
Heliotropium muticum	575380	7699462
Heliotropium muticum	592708	7678077
Heliotropium muticum	582841	7681565
Heliotropium muticum	587196	7680918
Heliotropium muticum	586941	7680970
Heliotropium muticum	586821	7681000
Heliotropium muticum	586731	7681033
Oldenlandia sp. Hamersley Station (A.A. Mitchell PRP 1479)	584000	7598006
Oldenlandia sp. Hamersley Station (A.A. Mitchell PRP 1479)	583945	7598087
Oldenlandia sp. Hamersley Station (A.A. Mitchell PRP 1479)	583945	7598087
Oldenlandia sp. Hamersley Station (A.A. Mitchell PRP 1479)	583727	7597908
Oldenlandia sp. Hamersley Station (A.A. Mitchell PRP 1479)	584236	7598385
Pentalepis trichodesmoides subsp. *hispida*	586412	7599467

'Supplementary flora and vegetation survey and terrestrial fauna survey for the Balla Balla Infrastructure Project 1155-PIO-BBI-ECO, July 2018' prepared by Phoenix Environmental Sciences:

Species Name	Easting	Northing
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	597150	7664093
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	597159	7664081
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	597167	7664145
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	597558	7648993
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	597561	7648969
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	597633	7648978
Heliotropium muticum	594209	7669399
Heliotropium muticum	594203	7669416
Heliotropium muticum	594193	7669441
Heliotropium muticum	594198	7669450
Heliotropium muticum	594223	7669224
Heliotropium muticum	594208	7669277
Heliotropium muticum	594208	7669280
Heliotropium muticum	594209	7669284
Heliotropium muticum	576443	7691436
Heliotropium muticum	594198	7669483
Heliotropium muticum	594198	7669475
Heliotropium muticum	594211	7669378
Heliotropium muticum	594214	7669389
Heliotropium muticum	594214	7669394
Heliotropium muticum	594211	7669399
Heliotropium muticum	594220	7669413
Heliotropium muticum	594222	7669427

Species Name	Easting	Northing
Heliotropium muticum	594222	7669440
Heliotropium muticum	594213	7669447
Heliotropium muticum	594211	7669468
Heliotropium muticum	597149	7664096
Heliotropium muticum	597142	7664148
Heliotropium muticum	594230	7669384
Heliotropium muticum	594223	7669404
Heliotropium muticum	597141	7664123
Heliotropium muticum	594205	7669301
Heliotropium muticum	594201	7669308
Heliotropium muticum	594213	7669356
Heliotropium muticum	594207	7669371
Heliotropium muticum	594210	7669372
Heliotropium muticum	594200	7669462
Heliotropium muticum	597142	7664130
Heliotropium muticum	597142	7664129
Hibiscus sp. Mt Brockman (E. Thoma ET 1354)	575712	7688260
Themeda sp. Hamersley Station (M.E. Trudgen 11431)	596143	7623616

(b) When undertaking any clearing authorised under this Permit, the Permit Holder shall not cause or allow:
  (i) clearing within 50 metres of the identified priority flora within condition 10(a); and
  (ii) clearing of the identified priority flora within condition 10(a).

11. Vegetation management - watercourse

(b) Where a *watercourse* is to be impacted by clearing, the Permit Holder shall maintain the existing surface flow.

12. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

(a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared within area cross-hatched yellow on attached Plan 6244/2a, Plan 6244/2b, Plan 6244/2c and Plan 6244/2d;

(b) within 6 months following clearing authorised under this Permit, *revegetate* and *rehabilitate* area(s) no longer required for the purpose for which they were cleared under this Permit by:
  (i) backfilling test pits with excavated material;
  (ii) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land; and
  (iii) laying the vegetative material and topsoil retained under condition 12(a) over the cleared area(s).

13. 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 boundaries of clearing undertaken on each date, 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 size of the area cleared (in hectares);
  (iii) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 8 of this Permit;
  (iv) actions taken to minimise the risk of the introduction and spread of weeds in accordance with condition 9 of this Permit;

(v) actions taken to avoid priority flora in accordance with condition 10 of this Permit; and
(vi) actions taken to maintain the existing surface flows of *watercourses* in accordance with condition 11 of this Permit.

(b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 12 of this Permit:
(i) the location of any areas *revegetated* and *rehabilitated*, 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(s) that the area was *revegetated* and *rehabilitated*;
(iii) a description of the *revegetation* and *rehabilitation* activities undertaken; and
(iv) the size of the area *revegetated* and *rehabilitated* (in hectares).

14. 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 13 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 8 September 2019, the Permit Holder must provide to the *CEO* a written report of records required under condition 13 of this Permit where these records have not already been provided under condition 14(a) of this Permit.

DEFINITIONS

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

access track means a pathway with a maximum cleared width of 5 metres, giving access from one location to another;

associated drainage control means shallow diversion berms to allow surface water to flow away from the surface of access tracks to prevent water erosion;

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

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;

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing mulch;

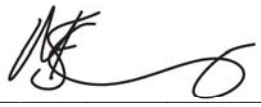
rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

watercourse has the meaning given to it in section 3 of the *Rights in Water and Irrigation Act 1914*;

weed/s 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 Biosecurity, Conservation and Attractions Regional Weed Rankings Summary, regardless of ranking; or
(c) not indigenous to the area concerned.

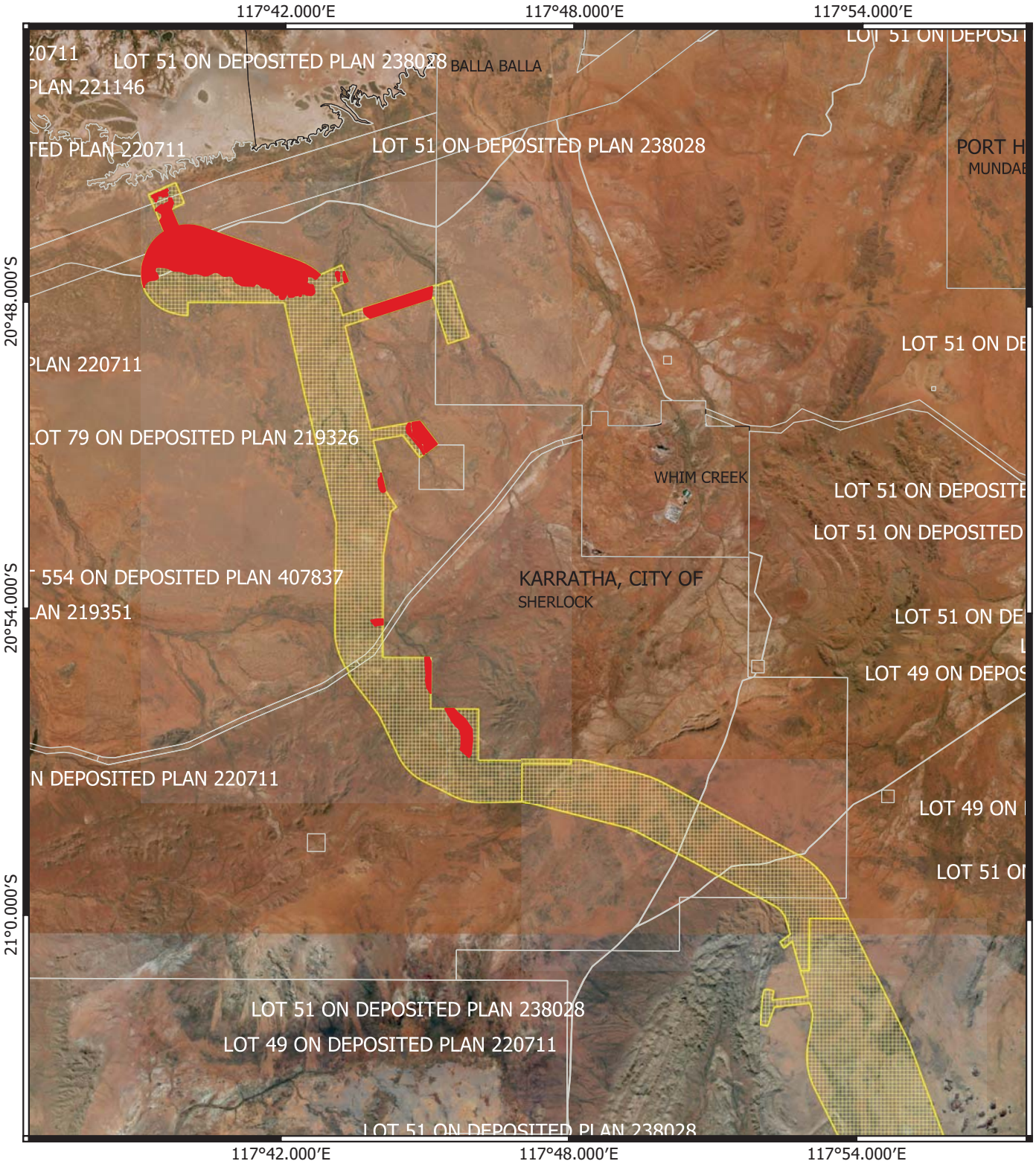


Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

19 December 2019

Plan 6244/2a



Legend

- CPS areas approved to clear
- CPS subject to conditions
- Land TenureLGATE - 226
- Local Government Authorities
- Localities - Landgate

Image

N

MGA 94
Geocentric Datum of Australia 1994

0 2.5 5 7.5 10 km

Mathew Gannaway
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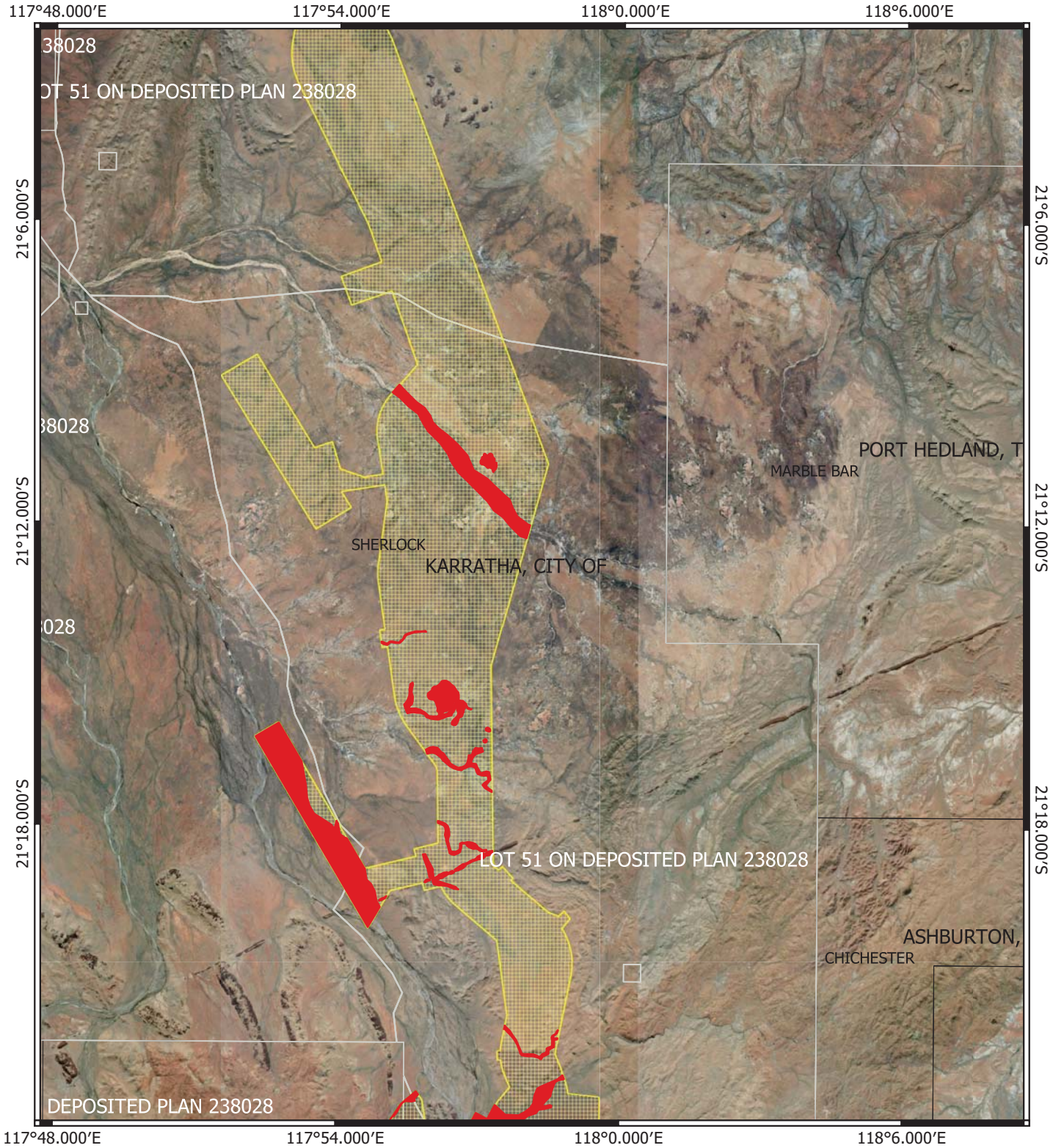
Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 6244/2b



Legend

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- CPS subject to conditions
- Land TenureLGATE - 226
- Local Government Authorities
- Localities - Landgate

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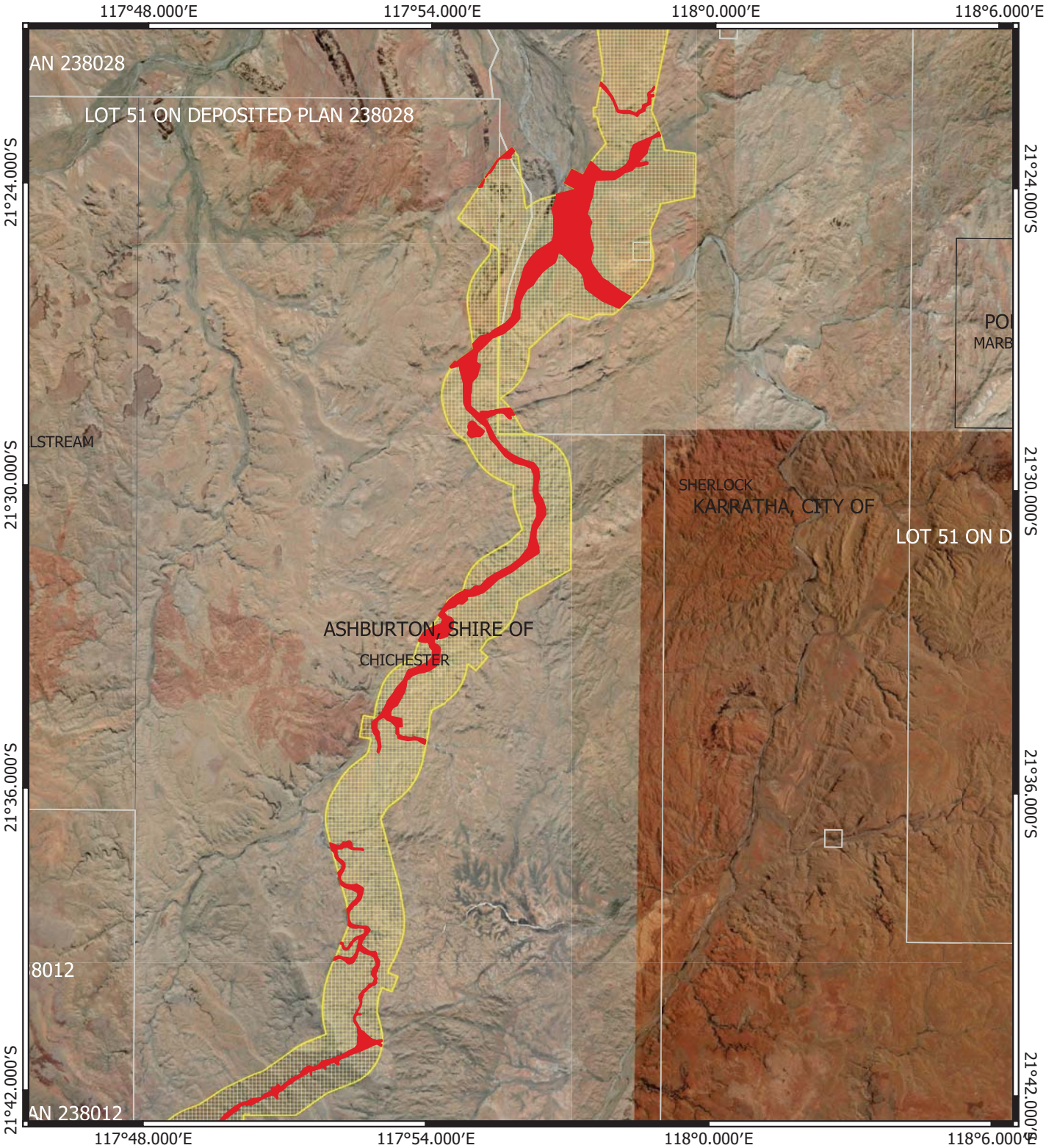
Environmental Protection Act 1986

GOVERNMENT OF
WESTERN AUSTRALIA

Plan 6244/2c



Legend

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- CPS subject to conditions
- Land TenureLGATE - 226
- Local Government Authorities
- Localities - Landgate

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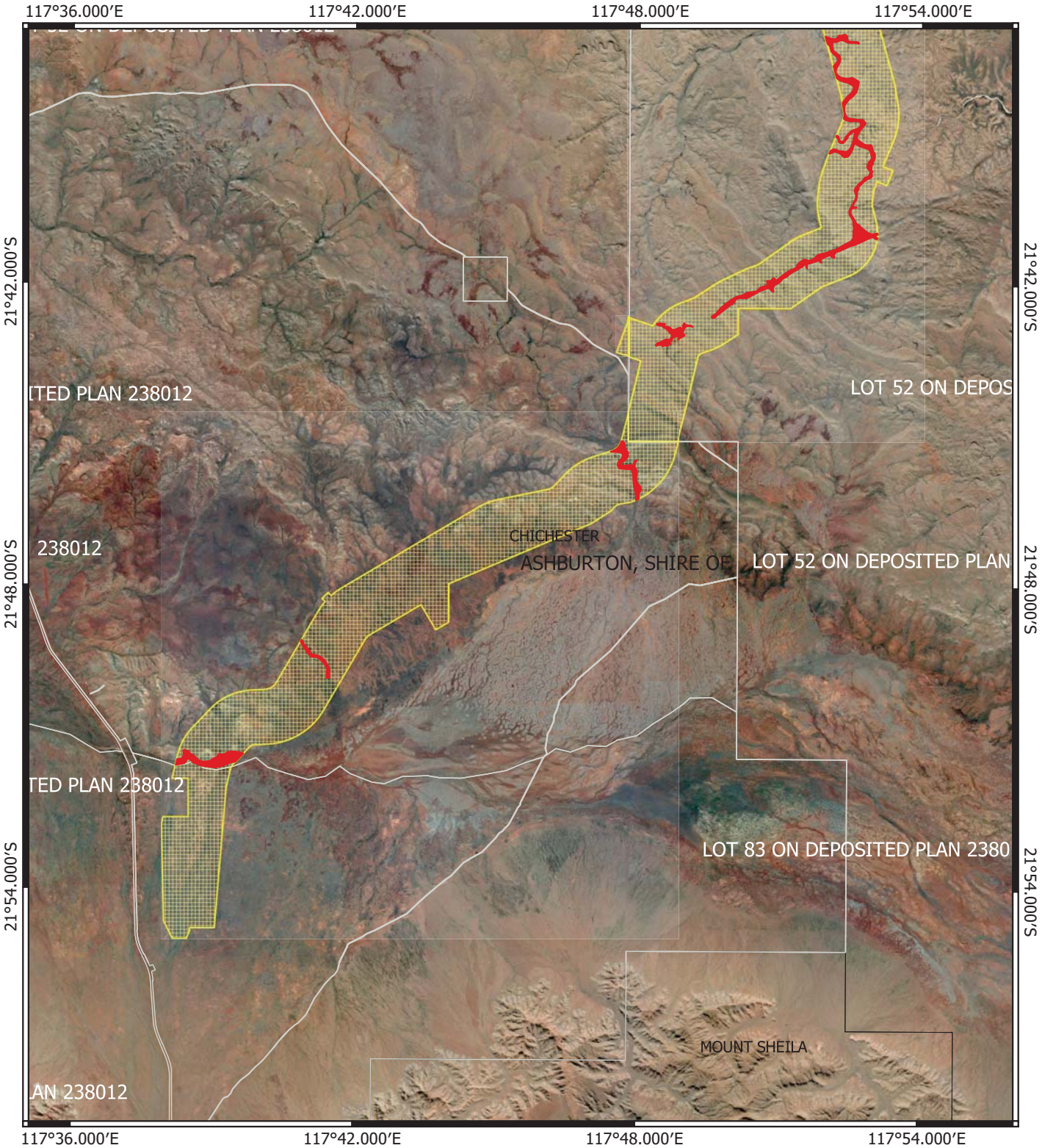
GOVERNMENT OF WESTERN AUSTRALIA

Plan 6244/2d



Legend

- CPS areas approved to clear
- CPS subject to conditions
- Land TenureLGATE - 226
- Local Government Authorities
- Localities - Landgate

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6244/2
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Forge Resources Swan Pty Ltd
Application received date: 29 July 2019

1.3. Property details

Property:
Crown Reserve (R 12252), Sherlock
Easement (PINs 11831455, 11831454), Sherlock
Lot 49 on Deposited Plan 220711, Sherlock
Lot 51 on Deposited Plan 238028, Sherlock
Lot 78 on Deposited Plan 219351, Sherlock
Lot 79 on Deposited Plan 219326, Sherlock
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Road Reserve (PINs 11732078, 11732085, 11732086, 11732087), Chichester
Unallocated Crown Land (PINs 1019499, 1019500, 1019502), Chichester

Local Government Authority: Ashburton, Shire of and Karratha, City of
Localities: Chichester and Sherlock

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
63.5		Mechanical Removal	Geotechnical, water and other investigations including associated access tracks.

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 19 December 2019

Reasons for Decision:
The clearing permit application to amend CPS 6244/1 was received on 29 July 2019 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. Based on a review of currently available databases, the assessment against the clearing principles has not changed since the grant of CPS 6244/1. It has been concluded that the proposed clearing is at variance with principle (f), not at variance with principle (e), and is not likely to be at variance with the remaining clearing principles.

Clearing permit CPS 6244/2 will be subject to the same conditions as CPS 6244/1, including weed and dieback management, and revegetation and rehabilitation conditions. In addition, a condition has been placed on the permit whereby clearing within areas of significant fauna habitat and potential priority ecological communities will be restricted to access tracks only.

In determining to grant a clearing permit subject to conditions, the Delegated Officer considered that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description:
The application is for the proposed clearing of 63.5 hectares of native vegetation within various properties, Chichester and Sherlock, for the purpose of geotechnical and hydrogeological investigations to develop the Balla Balla Infrastructure (BBI) Rail and Conveyor Project (the Project). The proposed clearing will be limited to clearing for access routes, drill pads (20 metres by 20 metres), test pits and sumps (Preston Consulting, 2019).

Initially, the applicant sought to amend clearing permit CPS 6244/1 by extending the duration of the clearing permit by five years (to 2024), increase the permit boundary by 938 hectares, and increase the amount of clearing from 58.5 hectares to 63.5 hectares (Forge Resources Swan, 2019a). The current Licence to Occupy Crown Land approved under Section 91 of the *Land Administration Act 1997* ('S91 Licence'), held by the

applicant expires in December 2020. There were also some discrepancies with the S91 Licence boundary and the proposed amendment clearing permit boundary. Given this, the applicant has revised the proposed amendment to extend the permit duration by one year (to December 2020), and increase the amount of clearing from 58.5 hectares to 63.5 hectares, but within the same permit boundary as approved under CPS 6244/1 (Forge Resources Swan, 2019b).

Vegetation Description:

The application area is mapped as occurring within the following Beard vegetation associations (Shepherd et al., 2002):

- 93: Hummock grasslands, shrub steppe; kanji over soft spinifex;
- 173: Hummock grasslands, shrub steppe; kanji over soft spinifex and *Triodia wiseana* on basalt;
- 175: Short bunch grassland - savanna/grass plain (Pilbara);
- 569: Hummock grasslands, low tree steppe; bloodwood over soft spinifex and *Triodia wiseana*;
- 587: Mosaic: Hummock grasslands, open low tree-steppe; snappy gum over *Triodia wiseana* / Hummock grasslands, shrub-steppe; kanji over *Triodia pungens*;
- 589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex;
- 607: Hummock grasslands, low tree steppe; snappy gum and bloodwood over soft spinifex and *Triodia wiseana*;
- 626: Hummock grasslands, shrub-steppe; kanji over soft spinifex and *Triodia brizoides*;
- 641: Medium woodland; coolabah and river gum;
- 644: Hummock grasslands, open low tree steppe; mulga and snakewood over soft spinifex and *Triodia basedowii*;
- 647: Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex; and
- 649 - Sedgeland; Various sedges with very sparse snakewood.

Flora and vegetation surveys of the application area identified the following vegetation types occurring within the application area (Ecoscape, 2014; Phoenix, 2018):

- Aa$_3$Te: *Acacia ancistrocarpa, Acacia bivenosa* and *Acacia arida* tall-mid open to scattered shrubland over *Triodia epactia* and *Triodia wiseana* mid-low open hummock grassland;
- Aa$_3$Ti: Isolated tall *Grevillea pyramidalis* shrubs over isolated mid *Acacia inaequilatera*, *Acacia pyrifolia* shrubs over mid *Triodia ?brizoides* hummock grassland on stony hillslopes;
- Aa$_3$Tl: *Acacia ancistrocarpa, Acacia inaequilatera* and *Acacia pyrifolia* var. *pyrifolia* tall-mid open-sparse shrubland over *Triodia lanigera, Triodia epactia* and *Acacia stellaticeps* mid-low hummock grassland/shrubland with occasional *Corymbia hamersleyana* and *Corymbia deserticola* subsp. *deserticola* low scattered trees;
- Aa$_3$Tl/Ts: Mosaic of *Acacia ancistrocarpa, Acacia inaequilatera* and *Acacia pyrifolia* var. *pyrifolia* tall-mid open-sparse shrubland over *Triodia lanigera, Triodia epactia* and *Acacia stellaticeps* mid-low hummock grassland/shrubland with occasional *Corymbia hamersleyana* and *Corymbia deserticola* subsp. *deserticola* low scattered trees and *Triodia secunda, Triodia wiseana* and *Triodia epactia* mid hummock grassland;
- Aa$_4$As$_3$: *Acacia arida* mid sparse shrubland over *Acacia stellaticeps, Triodia epactia* and *Bonamia erecta* low shrubland/hummock grassland with *Corymbia hamersleyana* scattered low trees;
- Aa$_4$Tl: *Acacia arida* and *Acacia ancistrocarpa* mid open shrubland over *Triodia lanigera, Acacia spondylophylla* and *Triodia epactia* mid (low) hummock grassland/shrubland;
- AaAsTw: Isolated tall *Acacia ancistrocarpa* and *Acacia pyrifolia* shrubs over isolated mid *Acacia stellaticeps* shrubs over mid *Triodia wiseana* with *Triodia basedowii* hummock grassland on quartz stony flat plains;
- Ac$_1$ApTe: *Acacia citrinoviridis* low woodland or tall to mid shrubland over *Acacia pyrifolia* var. *pyrifolia*, *Acacia trachycarpa* and *Acacia pruinocarpa* tall mid shrubland over *Triodia epactia* mid hummock grassland;
- Ac$_1$Te: *Acacia citrinoviridis* and *Corymbia hamersleyana* low woodland over *Triodia epactia, Themeda triandra* and *Chrysopogon fallax* mid-low hummock grassland/tussock grassland;
- AiTe(1): *Acacia inaequilatera* and *Acacia acradenia* tall sparse shrubland over *Triodia epactia* and *Triodia wiseana* mid tussock grassland;
- AiTe(2): *Acacia inaequilatera* and *Acacia ancistrocarpa* tall-mid sparse-scattered shrubland over *Triodia epactia* mid hummock grassland;
- AiTe(3): *Acacia inaequilatera* and *Acacia trachycarpa* mid sparse shrubland over *Triodia epactia* and *Pluchea tetranthera* mid(low) hummock grassland/shrubland with *Corymbia hamersleyana* low scattered trees;

- AiTw(1): *Acacia inaequilatera* tall sparse or scattered shrubland over *Triodia wiseana* and *Triodia epactia* mid-low hummock grassland;
- AiTw(2): *Acacia inaequilatera, Acacia pyrifolia* var. *pyrifolia* and *Hakea lorea* subsp. *lorea* tall sparse shrubland over *Triodia wiseana, Triodia epactia* and *Triodia brizoides* mid-low hummock grassland
- AiTw(3): *Acacia inaequilatera, Grevillea pyramidalis* subsp. *leucadendron* and *Acacia* sp. tall sparse shrubland over *Triodia wiseana, Triodia epactia* and *Triodia* aff. *melvillei* hummock grassland with *Corymbia hamersleyana* low scattered trees;
- AmEe: *Acacia melleodora* tall open shrubland over *Eragrostis eriopoda* and *Aristida holathera* var. *holathera* mid open tussock grassland;
- AoTe: *Acacia orthocarpa* and *Acacia pyrifolia* var. *pyrifolia* tall open shrubland over *Triodia epactia, Indigofera monophylla* and *Triodia wiseana* mid hummock grassland/shrubland;
- ApTe: *Acacia pyrifolia* var. *pyrifolia, Acacia trachycarpa* and *Petalostylis labicheoides* tall-mid open shrubland over *Triodia epactia, *Cenchrus ciliaris* and **Aerva javanica* mid-low tussock grassland/hummock grassland/shrubland;
- ApTw: *Acacia pyrifolia* var. *pyrifolia, Acacia ancistrocarpa* and *Acacia inaequilatera* tall sparse shrubland over *Triodia wiseana* and *Triodia epactia* mid hummock grassland;
- As$_1$Cf: *Acacia sclerosperma* subsp. *sclerosperma* and *Carissa lanceolata* tall shrubland over *Chrysopogon fallax, Eragrostis xerophila* and **Cenchrus ciliaris* mid tussock grassland;
- As$_3$: *Acacia stellaticeps* and *Triodia schinzii* low shrubland/mid hummock grassland;
- AxSb: *Acacia xiphophylla* tall shrubland over *Streptoglossa bubakii, Stemodia kingii* and *Triodia wiseana* low open shrubland/hummock grassland;
- Cc$_2$Eb: *Corymbia candida* low open woodland over *Eriachne benthamii, Triodia epactia* and *Chrysopogon fallax* mid tussock grassland/hummock grassland with *Acacia inaequilatera* and *Acacia pyrifolia* var. *pyrifolia* tall scattered shrubs;
- ChAa$_1$Ta: *Corymbia hamersleyana* low open woodland over *Acacia acradenia, Acacia ancistrocarpa* and *Acacia inaequilatera* tall sparse shrubland over *Triodia angusta* and *Triodia epactia* low hummock grassland;
- ChAa$_5$Te: *Corymbia hamersleyana, Eucalyptus gamophylla* and *Eucalyptus xerothermica* low open woodland over *Acacia atkinsiana, Grevillea wickhamii* and *Acacia ancistrocarpa* mid open-sparse shrubland over *Triodia epactia* and *Eulalia aurea* mid-low hummock grassland/tussock grassland;
- ChAbTw: *Corymbia hamersleyana* and *Grevillea pyramidalis* subsp. *leucadendron* low open woodland or scattered trees over *Acacia bivenosa* and *Acacia arida* tall-mid sparse shrubland over *Triodia wiseana, Triodia epactia* and *Triodia angusta* mid open tussock grassland;
- ChAt$_2$Te: *Corymbia hamersleyana* low open woodland over *Acacia tumida* var. *pilbarensis* and *Acacia pyrifolia* var. *pyrifolia* tall-mid sparse shrubland over *Triodia epactia, Themeda triandra* and *Paraneurachne muelleri* mid hummock grassland/tussock grassland;
- ElAs$_2$Te: *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* low open woodland or scattered trees over *Acacia* sp., *Acacia inaequilatera* and *Acacia tumida* subsp. *pilbarensis* tall sparse shrubland over *Triodia epactia* low hummock grassland;
- ElTe: *Eucalyptus leucophloia* subsp. *leucophloia* mid open woodland to scattered trees over *Triodia epactia, Triodia brizoides* and *Triodia wiseana* hummock grassland;
- ElTw(2): *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* low open woodland over *Triodia wiseana* and *Triodia epactia* mid-low hummock grassland;
- EvApCc$_1$: *Eucalyptus victrix, Corymbia hamersleyana* and *Acacia coriacea* subsp. *pendens* mid-low open woodland over *Acacia pyrifolia* var. *pyrifolia* tall sparse shrubland over **Cenchrus ciliaris, Triodia angusta* and *Triodia epactia* low tussock grassland/hummock grassland;
- EvApTe: *Eucalyptus victrix* and *Corymbia hamersleyana* mid open woodland-scattered trees over *Acacia pyrifolia* var. *pyrifolia* and *Acacia tumida* var. *pilbarensis* tall shrubland-scattered shrubs over *Triodia epactia, Tephrosia rosea* var. Fortescue creeks (M.I.H Brooker 2186) and **Cenchrus ciliaris* mid-low open hummock grassland/shrubland/tussock grassland;
- EvAt$_1$Te: *Eucalyptus victrix* mid woodland-open woodland over *Acacia trachycarpa, Acacia ampliceps* and *Acacia pyrifolia* var. *pyrifolia* tall shrubland sparse shrubland over *Triodia epactia* and **Cenchrus ciliaris* mid open hummock grassland/tussock grassland;
- EvCb: *Eucalyptus victrix* low open woodland over *Cyperus bifax* and *Eriachne benthamii* low sedgeland/tussock grassland with **Vachellia farnesiana* tall scattered shrubs;

- EvMgEb: *Eucalyptus victrix* and *Acacia citrinoviridis* mid woodland over *Melaleuca glomerata* and **Vachellia farnesiana* tall sparse shrubland over *Eriachne benthamii* and *Cyperus bifax* low open tussock grassland/sedgeland;
- EvMlCv: *Eucalyptus victrix, Eucalyptus camaldulensis* subsp. *refulgens* and *Acacia coriacea* subsp. *pendens* mid-low woodland over *Melaleuca linophylla, Melaleuca glomerata* and *Acacia trachycarpa* tall open shrubland over *Cyperus vaginatus, Triodia epactia* and **Cenchrus ciliaris* mid open sedgeland/hummock grassland/tussock grassland;
- Ex1: *Eragrostis xerophila*, *Dichanthium sericeum* subsp. *humilius* and *Vigna* sp. Hamersley Clay (A.A. Mitchell PRP 113) low tussock grassland/vineland;
- FbGpEm: *Ficus brachypoda* low open woodland over *Grevillea pyramidalis* subsp. *leucadendron* and *Tephrosia rosea* var. *clementii* mid sparse shrubland over *Eriachne mucronata, Triodia wiseana* and *Triodia epactia* mid open tussock grassland/hummock grassland;
- FPg1: *Triodia epactia, Eragrostis xerophila* and *Eriachne benthamii* mid-low hummock grassland with tall *Acacia inaequilatera* and *Carissa lanceolata* scattered clumps of shrubs;
- HcTe: *Hakea chordophylla* and *Grevillea pyramidalis* subsp. *leucadendron* tall sparse shrubland over *Triodia epactia* and **Cenchrus ciliaris* mid hummock grassland/tussock grassland;
- MaMgCv: *Melaleuca argentea* and *Eucalyptus camaldulensis* subsp. *refulgens* mid open forest to open woodland over *Melaleuca glomerata, Acacia ampliceps* and *Acacia coriacea* subsp. pendens tall sparse shrubland-scattered shrubs over *Cyperus vaginatus* and *Stemodia grossa* mid open sedgeland/forbland;
- MaMlCi: *Melaleuca argentea* and *Eucalyptus camaldulensis* subsp. *refulgens* low open woodland over *Melaleuca linophylla* tall open shrubland over *Cyperus ixiocarpus* mid sparse sedgeland;
- Sb: *Streptoglossa bubakii, Sida fibulifera* and *Stemodia kingii* low open shrubland/herbland;
- Ta: *Triodia angusta* and *Triodia epactia* mid hummock grassland;
- Tb: *Triodia brizoides* and *Triodia epactia* mid-low hummock grassland with *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* low scattered trees;
- Te(1): *Triodia epactia* and *Triodia secunda* low hummock grassland;
- Te(2): *Triodia epactia* and *Triodia wiseana* low hummock grassland with *Corymbia hamersleyana* low scattered trees over *Acacia elachantha* tall scattered shrubs;
- Te(3): *Triodia epactia, Sclerolaena hostilis* and *Triodia angusta* mid-low open hummock grassland/chenopod shrubland with occasional low *Acacia xiphophylla* scattered trees;
- Te(4): *Triodia epactia, Triodia angusta* and *Triodia lanigera* mid hummock grassland with scattered low *Acacia xiphophylla* trees;
- Ts: *Triodia secunda, Triodia wiseana* and *Triodia epactia* mid hummock grassland; and
- Tw(2): *Triodia wiseana* and *Triodia epactia* low open hummock grass with *Corymbia hamersleyana* low scattered trees over *Acacia inaequilatera* mid scattered shrubs.

Vegetation Condition

The flora and vegetation survey determined that the application area is in Poor to Excellent (Trudgen, 1988) condition (Ecoscape, 2014; Phoenix, 2018), described as:

- Excellent: Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement(Trudgen, 1988).
- Poor: Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds (Trudgen, 1998).

Soil Type

The application area is mapped as occurring within the following mapped land systems (van Vreeswyk et al., 2004):

- Black System: Linear ridges of dolerite or basalt supporting hard spinifex grasslands, with unvegetated boulder slopes and rock piles along summits;
- Boolaloo System: Granite hills, domes, tor fields and sandy plains supporting spinifex grasslands with scattered shrubs;
- Boolgeeda System: Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands;
- Calcrete System: Low calcrete platforms and plains supporting shrubby hard spinifex grasslands;
- Capricorn System: Rugged sandstone hills, ridges, stony footslopes and interfluves supporting low acacia shrublands or hard spinifex grasslands with scattered shrubs;
- Coolibah System: Flood plains with weakly gilgaied clay soils supporting coolibah woodlands with tussock grass understorey;

- Granitic System: Rugged granitic hills supporting shrubby hard and soft spinifex grasslands;
- Gregory System: Linear dunes and restricted sandplains supporting shrubby hard spinifex (and occasionally soft spinifex) grasslands;
- Horseflat system: Gilgaied clay plains supporting Roebourne Plains grass grasslands and minor grassy snakewood shrublands;
- Jurrawarrina System: Hardpan plains and alluvial tracts supporting mulga shrublands with tussock and spinifex grasses;
- Macroy system: Stony plains and occasional tor fields based on granite supporting hard and soft spinifex shrubby grasslands;
- Mallina system: Sandy surfaced alluvial plains supporting soft spinifex grasslands and minor hard spinifex and tussock grasslands;
- McKay System: Hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard spinifex grasslands with acacias and occasional eucalypts;
- Newman System: Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands;
- River system: Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of eucalypts sometimes with tussock grasses or spinifex;
- Rocklea System: Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs;
- Ruth System: Hills and ridges of volcanic and other rocks supporting shrubby hard spinifex and occasionally soft spinifex grasslands;
- Satirist System: Stony plains and low rises supporting hard spinifex grasslands, and gilgai plains supporting tussock grasslands;
- Uaroo System: Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered acacia shrubs;
- Urandy System: Stony plains, alluvial plains and drainage lines supporting shrubby soft spinifex grasslands; and
- Wona System: Basalt upland gilgai plains supporting Roebourne Plains grass and Mitchell grass tussock grasslands, minor hard spinifex grasslands or annual grasslands/herbfields.

Comments

The local area referred to in the assessment of this application is defined as a 20 kilometre radius measured from the perimeter of the application area. According to available aerial imagery, approximately 99 per cent native vegetation cover is remaining in the local area.

Numerous surveys have been conducted within the application area including a flora and vegetation survey and fauna survey in 2014 (Ecoscape, 2014; Phoenix, 2014), and a supplementary flora, vegetation and fauna survey in 2017 (Phoenix, 2018). The surveys conducted in 2014 covered the majority of the application area, however the 2017 survey only covers a small portion of the application area (3,497.85 hectares) which has been identified as the 'final potential disturbance area' for the Project.

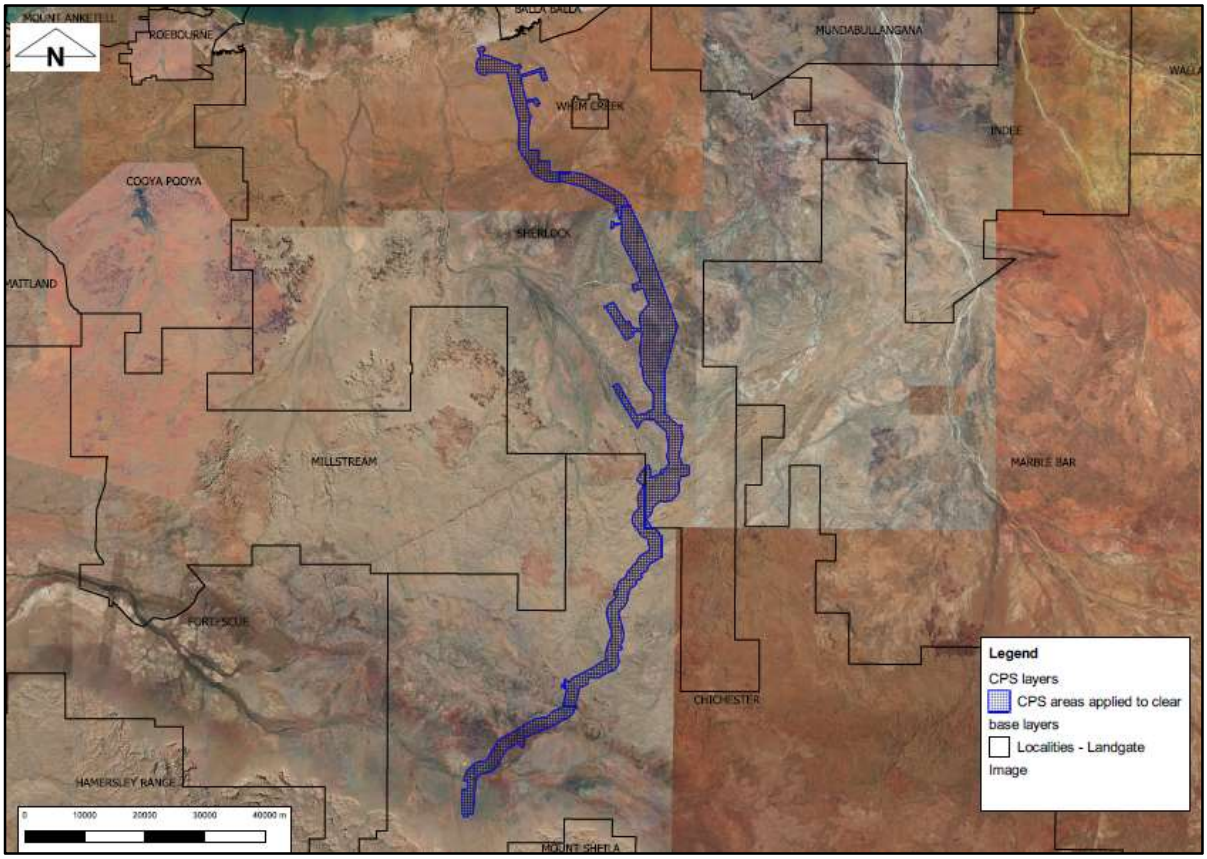

Figure 1: Application area (cross-hatched blue)

3. Minimisation and mitigation measures

The applicant has noted that existing access tracks will be utilised where possible (Forge Resources Swan, 2019a). The applicant has also advised that recorded Priority flora locations with a 50 metre buffer area will be avoided, and that clearing within priority ecological communities and significant fauna boundaries will be restricted to access tracks and associated drainage controls only (Forge Resources Swan, 2019b). The proposed minimisation measures will be reflected within the permit conditions.

In addition, a condition will be placed on the permit whereby clearing is not authorised after 8 July 2020. This will provide the applicant sufficient time (6 months) to undertake rehabilitation activities, including backfilling of test pits, and ripping, shaping and laying vegetative material and topsoil over disturbed areas.

4. Assessment of application against clearing principles and planning instruments and other matters

This amendment is to increase the proposed clearing from 58.5 hectares to 63.5 hectares, and extend the permit duration to 2020. A review of available information found that the assessment against the clearing principles has not changed for the revised application area.

The application area is known to support priority flora, two Priority Ecological Communities (PECs) and habitat for conservation significant fauna. The application area extends across a distance of approximately 170 kilometres and the local area retains approximately 99 per cent of its pre-European extent of native vegetation. The proposed clearing will be spread out across a large area and involves low impact disturbance associated with drilling activities that are temporary in nature. Rehabilitation of disturbed areas will help to ensure that no permanent loss of biodiversity occurs. Given this, the proposed clearing is not considered likely to result in significant impacts to areas of high biodiversity.

According to available databases, there are no records of threatened flora within the local area, and the nearest record is located approximately 100 kilometres from the application area (Western Australian Herbarium, 1998-). No threatened flora were identified within the application area (Ecoscape, 2014; Phoenix, 2018). The proposed clearing is not likely to impact threatened flora.

Seventeen priority flora species have been recorded within the local area, of which five species were recorded from within the application area (Western Australian Herbarium, 1998-). The most recent flora and vegetation survey in 2017 recorded 221 flora species and subspecies representing 36 families and 97 genera from within the application area, of which seven flora species are of conservation significance (Phoenix, 2018). The priority flora species recorded within the application area include, *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P1), *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354) (P1), *Heliotropium muticum* (P3), and *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) (P3) (Phoenix, 2018). The previous 2014 survey recorded an additional four priority flora species from within the application area including *Goodenia nuda* (P4), *Helichrysum oligochaetum* (P1), *Pentalepis trichodesmoides* subsp. *hispida* (P2), and *Oldenlandia* sp. Hamersley Station (A.A. Mitchell PRP 1479) (P3) (Ecoscape, 2014). Demarcating known priority flora locations and providing a 50 metre buffer where clearing is not able to occur will mitigate any potential impacts to priority flora.

According to available databases, 11 threatened fauna species, six priority fauna species and 22 fauna species protected under international agreement, have been recorded within the local area (Department of Biodiversity Conservation and Attractions, 2007-). The fauna surveys identified eight broad fauna habitat types occurring within the application area, defined as gully, hummock and tussock grasslands, isolated sand dune, minor creek and drainage line, open and closed shrubland, rocky hill slope, sandy plain and woodland (Phoenix, 2014; Phoenix, 2018). Of these, the gully and rocky hill slope, sandy plain and creek and drainage line fauna habitat types are considered to be of high value as they support diverse fauna assemblages, and/or provide suitable habitat to threatened fauna species (Phoenix, 2014).

The fauna surveys recorded evidence of the Northern Quoll (*Dasyurus hallucatus*) (Endangered), Pilbara Olive Python (*Liasis olivaceus barroni*) (Vulnerable), Lined Soil-crevice Skink (*Notoscinus butleri*) (P4) and Western Pebble-mound Mouse (*Pseudomys chapmani*) (P4) from within the application area (Phoenix, 2014; Phoenix, 2018). Based on the fauna habitats recorded, it was also determined that the application area also contains suitable habitat for numerous other conservation significant mammalian and avian species, including the threatened Greater Bilby (*Macrotis lagotis*) (Vulnerable) and Ghost Bat (*Macroderma gigas*) (Phoenix, 2014; Phoenix, 2018).

The abovementioned conservation significant fauna are restricted to portions of the minor creek and drainage line, rocky hill slope, and gully fauna habitat types. Restricting clearing for the purpose of access tracks through these areas will minimise the impact to suitable conservation significant fauna habitat.

According to available databases, no State or Commonwealth listed Threatened Ecological Communities (TECs) are mapped as occurring within the local area. The nearest TEC, 'Themeda grasslands on cracking clays (Hamersley Station, Pilbara)' is located approximately 39 kilometres from the application area. The surveys did not recorded any vegetation types to be representative of any TECs (Ecoscape, 2014; Phoenix, 2018).

According to available databases, there are two Priority Ecological Communities (PECs) mapped as occurring within the application area. The survey identified vegetation type Sb to be representative of the 'Four plant assemblages of the Wona Land System' PEC (P1-P3), however the location of vegetation type Sb did not correspond with the mapping of the PEC on available databases. Vegetation type Ex1 is considered to represent subtype 3 of the 'Horseflat Land System of the Roebourne Plains PEC (P3); vegetation types Te(1) and potentially FPg1 is also likely to represent uncommon variations of subtype 5, and vegetation type Cc2Eb may represent subtype 7 (Ecoscape, 2014). Restricting clearing for the purpose of access tracks through these areas will minimise the impact to PECs.

The application area contains suitable habitat for conservation significant flora and fauna, and native vegetation that contains affinities with two PECs. Given the proposal is to clear up to 63.5 hectares of native vegetation within an application area of approximately 48,390 hectares and the flexible nature of geotechnical investigations, as well as the proposed mitigation measures, the proposed clearing is not likely to significantly impact on suitable habitat for conservation significant flora and fauna, or the occurrence of PECs. Furthermore, the proposed clearing will be subject to rehabilitation requirements at the completion of the geotechnical investigations.

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 area is located within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, which retains approximately 99.5 per cent of its pre-European vegetation extent (Government of Western Australia, 2019). The mapped Beard vegetation associations all retain over 97.5 per cent of its pre-European vegetation extent within the bioregion (Government of Western Australia, 2019). The local area retains approximately 99 per cent native vegetation cover. Noting that all the abovementioned remnant vegetation extents are above the 30 per cent threshold, the proposed clearing is not significant as a remnant of native vegetation in an area that has been extensively cleared.

The application area does not occur within any conservation areas, however the Millstream Chichester National Park and the Mungaroona Range Nature Reserve occurs approximately seven kilometres from the application area. The conservation areas are separated from the application area by intact native vegetation. Given the distance between these conservation areas and the application area, the proposed clearing is not likely to have an impact on the environmental values of any conservation areas.

The most southern portion of the application area is located within the Millstream Water Reserve, which is a Priority 2 Public Drinking Water Source Area (PDWSA). The entire application area is located within the Pilbara groundwater and surface water areas proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act). The application area intersects numerous minor and major non-perennial watercourses including the Sherlock and Fortescue Rivers. The applicant has advised that some geotechnical and hydrogeological investigations are required within the boundaries of surface water systems, to inform the design of bridges and culvert crossings (Preston Consulting, 2019). Noting this, the proposed clearing is at variance with principle (f).

Clearing native vegetation along watercourses may cause localised sedimentation. Potential impacts may be minimised through the rehabilitation of disturbed areas. Given this, any sedimentation contribution to surface water flows would likely be temporary in nature. Given the low impact nature of geotechnical and hydrogeological investigations, and the local area retaining approximately 99 per cent of its pre-European extent of native vegetation, it is unlikely that the proposed clearing will cause any unacceptable environmental impacts to these mapped watercourses, or cause significant deterioration in the quality of groundwater or surface water.

The application area intersects twenty-one mapped land systems. The majority of these land systems are generally not susceptible to erosion, however some land systems including the River, Mallina, Jurrawarrina and Coolibah land systems may be susceptible to erosion if groundcover is removed (van Vreeswyk et al., 2004). Limiting the amount of time that bare soil is present on site will mitigate this risk. Temporary localised flooding may occur following heavy rainfall events. However, noting the low impact nature

of the purpose of the clearing, and the requirement to rehabilitate disturbance areas, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.

Given the above, the proposed clearing, is at variance with principle (f), not at variance with principle (e), and is not likely to be at variance with the remaining clearing principles.

Planning instruments and other relevant matters.

The clearing permit amendment application was advertised by the Department of Water and Environmental Regulation (DWER) on
29 August 2019, inviting submissions from the public within a 21 day period. No submissions were received in relation to this clearing permit application.

The S91 Licence expires in December 2020, and during the assessment of this clearing permit amendment (CPS 6244/2), a discrepancy between the S91 Licence boundary and proposed amendment permit boundary was identified. This discrepancy was noted to the applicant, who has advised that, *'there was a discrepancy between the S91 boundary that was applied for and what was approved under the Land Administration Act 1997. Forge Resources Swan is discussing with the Department of Planning, Lands and Heritage (DPLH) a minor amendment to the current S91 to include some small additional areas and to seek a further 12 month extension to December 2021. DPLH have confirmed the new S91 should be granted by February 2020*' (Forge Resources Swan, 2019b). It is understood that the applicant intends to align the expiry date of the clearing permit with the S91 Licence, which will be subject to another clearing permit amendment (Forge Resources Swan, 2019b).

The City of Karratha have stated that they have no objections to the proposal to amend CPS 6244/1 (City of Karratha, 2019).

The Project has been approved under Part IV of the *Environmental Protection Act* (EP Act) (Ministerial Statement No. 1006) to construct and operate a combination railway and conveyor line, and associated infrastructure to connect the Flinders Pilbara Iron Ore Project to the Balla Balla Export Facilities in the Pilbara region of Western Australia. The Project was also approved under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) in December 2015 (EPBC 2015/7420). The approval of the Project under both the EP Act and EPBC Act is subject to fauna management conditions for the protection of the Northern Quoll, Pilbara Olive Python and Greater Bilby, and offset conditions to counterbalance the significant residual actions on threatened fauna species and ecological communities.

Any activities with a likelihood of requiring the relocation of fauna require fauna licences pursuant to the *Biodiversity Conservation Regulations 2018*. Any taking of threatened fauna species will require Ministerial authorisation under section 40 of the *Biodiversity Conservation Act 2016* (BC Act).

For clearing permit application CPS 6244/1, the former Department of Water (DoW) advised that any taking or diversion of surface water, or interference with the bed and banks of a watercourse is subject to approval by DoW, in accordance with the RIWI Act. DoW advised that groundwater abstraction is also subject to approval (DoW, 2014). The applicant was granted a Bed and Banks Permit (PMB179982(1)) in December 2014, however this permit expired on 8 December 2016. The applicant has advised that another Bed and Banks Permit to replace the expired permit was submitted to DWER in November 2019, and is currently under assessment.

The applicant holds a current section 5C licence to take water (GWL203634(1)). The applicant notes that a 26D licence will also be required to undertake further hydrogeological investigations. It is noted that once groundwater target areas have been identified, the applicant will submit a 26D licence application to DWER (Forge Resources Swan, 2019b). '

The application area is located within the Millstream Water Reserve (Priority 2) PDWSA. The purpose of geotechnical investigations is compatible with conditions in Priority 2 PDWSAs. The former DoW advised that the Millstream aquifer is unconfined and highly transmissive making it vulnerable to contamination from inappropriate land uses (DoW, 2014). All activities associated with the clearing including infrastructure, laydown areas, refuelling and topsoil storage must be compatible with the Land Use Compatibility Tables in the Water Quality Protection Note No. 25. All acceptable activities should be managed using current best practices, and care should be taken to ensure clearing activities do not result in increased turbidity in surface water during flow events.

There are numerous Aboriginal Sites of Significance mapped within the application area. It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

5. References

City of Karratha (2019). Direct Interest Comments for Clearing Permit Application CPS 6244/2, received 12 September 2014. City of Karratha, Western Australia (DWER Ref: A1822597).

Commonwealth of Australia (2001). National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.

Department of Water (DoW) (2014). Direct Interest Comment for Clearing Permit Application CPS 6244/1, received 6 October 2014. Department of Water, Western Australia (DWER Ref: A816071).

Ecoscape (2014). Rutila Resources Railway Corridor Flora and Vegetation Assessment, 10 June 2014, Preston Consulting and Ecoscape (Australia) Pty Ltd, Western Australia (DWER Ref: A1809662).

Forge Resources Swan (2019a). Application to amend clearing permit CPS 6244/1, received on 29 July (DWER Ref: A1809582).

Forge Resources Swan (2019b). Additional information provided for clearing permit application CPS 6244/2, received on 28 November 2019 (DWER Ref: A1846274).

Government of Western Australia. (2019). 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics.

Phoenix (2014). Terrestrial fauna surveys for the Balla Balla Railway Project. Report for Preston Consulting Pty Ltd on behalf of Rutila Resources Ltd, prepared by Phoenix Environmental Sciences Pty Ltd, Western Australia, November 2014 (DWER Ref: A1809673).

Phoenix (2018). Supplementary flora and vegetation survey and terrestrial fauna survey for the Balla Balla Infrastructure Project. Report for Preston Consulting Pty Ltd on behalf of Balla Balla Infrastructure Group Ltd, prepared by Phoenix Environmental Sciences Pty Ltd, Western Australia, July 2018 (DWER Ref: A1809664).

Preston Consulting (2019). CPS 6244/1 Amendment Application Supporting Information BBI Railway Investigations. Report for BBI Group Pty Ltd, prepared by Preston Consulting Pty Ltd, Western Australia, July 2019 (DWER Ref: A1809583).

Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2002). Native vegetation in Western Australia: extent, type and status. Technical Report 249. Department of Agriculture and Food, Western Australia.

Trudgen, M.E. (1988). A Report on the Flora and Vegetation of the Port Kennedy Area. Unpublished report prepared for Bowman Bishaw and Associates, West Perth.

Van Vreeswyk, A.M.E., Leighton, K.A., Payne, A.L., and Hennig, P. (2004). An inventory and condition survey of the Pilbara region, Western Australia. Technical Bulletin 92. Department of Agriculture and Food, Western Australia.

GIS Databases:

- Aboriginal Sites of Significance
- Department of Biodiversity, Conservation and Attractions, Managed Tenure
- Hydrography Linear – Linear
- Hydrography WA 250K – Surface Water Lines
- IBRA Australia
- PDWSA
- Pre-European Statistics
- Rangeland land systems
- RIWI Act Areas
- SAC bio datasets
- Threatened and Priority Fauna Data October 2019
- TPFL Data October 2019
- WA Herb Data October 2019
- WA TECPEC Boundaries