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WESTERN AUSTRALIA

Clearing Assessment Report – CPS 818

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Western Australia.*

Albany Hwy 300-308 SLK -

Gordon North

Geotechnical Investigations

March 2022

EOS 1914

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Amendments

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	Senior Environment Officer	Draft v1	10/03/2022
Reviewer:	Senior Environment Officer	Draft v1	14/03/2022
Author:	Senior Environment Officer	Final	16/03/2022
Reviewer:	Senior Environment Officer	Final	16/03/2022

1 PURPOSE

The purpose of this Clearing Assessment Report (CAR) is to provide a report detailing the assessment of native vegetation clearing that is proposed to be undertaken using the Statewide Clearing Permit CPS 818 issued to Main Roads Western Australia (Main Roads).

The CAR outlines the key activities associated with the proposal, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the proposal using the ten Clearing Principles, and the strategies used to manage vegetation clearing.

2 SCOPE

2.1 Proposal Scope

Proposal Name: Albany Hwy 300-308 SLK – Gordon North – Geotechnical Investigations

Proposal Purpose / Components: The current seal (pavement) width of Albany Highway Gordon River North Section (SLK 300.3 – 308) is not adequate for the class and volume of traffic currently utilising this section of road. There are several sections where poor vertical and horizontal alignments fail to provide the required vehicle sight stopping distances. Due to the age, poor condition and increased traffic loads, the road requires widening, reconstruction and maintenance to ensure the safety of road users.

Reconstruction and realignment have been recommended as the preferred approach to provide a roadway that meets the current design standards including a pavement with an expected 40 years' life.

To support these activities, geotechnical investigations are required to understand the geology of the area along the proposed alignment. Accordingly, the Great Southern Material Team proposes to excavate approximately 97 test pits in and adjacent to the maintenance zone along Albany Hwy to provide technical data for road construction. The locations of the geotechnical pads are provided in Figures 1a-e.

Each geotechnical pad will be nominally be a 6 m diameter circle and test pits will extend to a maximum depth of 2 m. Already cleared areas have been selected where possible.

Photographs of each geotechnical pit location is provided in Appendix C.

The proposed clearing under CPS 818 is: 0.175 hectares (ha) in a 0.27 ha geotechnical Proposal area.

The proposed temporary clearing under CPS 818 is: 0 ha.

Proposal Location(s): The proposal area is located on Albany Hwy, nominally between Sturry Road and the Gordon River Bridge, about 13 km north west of Cranbrook, in the Shire of Cranbrook, as shown in Figures 1a-e.

MGA reference: GDA 94 MGA Z50

Northern extent – 117.406 -34.117

Southern extent – 117.468 -34.223

2.2 Desktop Assessment Scope

The assessment area is confined to a local area of a 10 km radius, as shown in Figure 2.

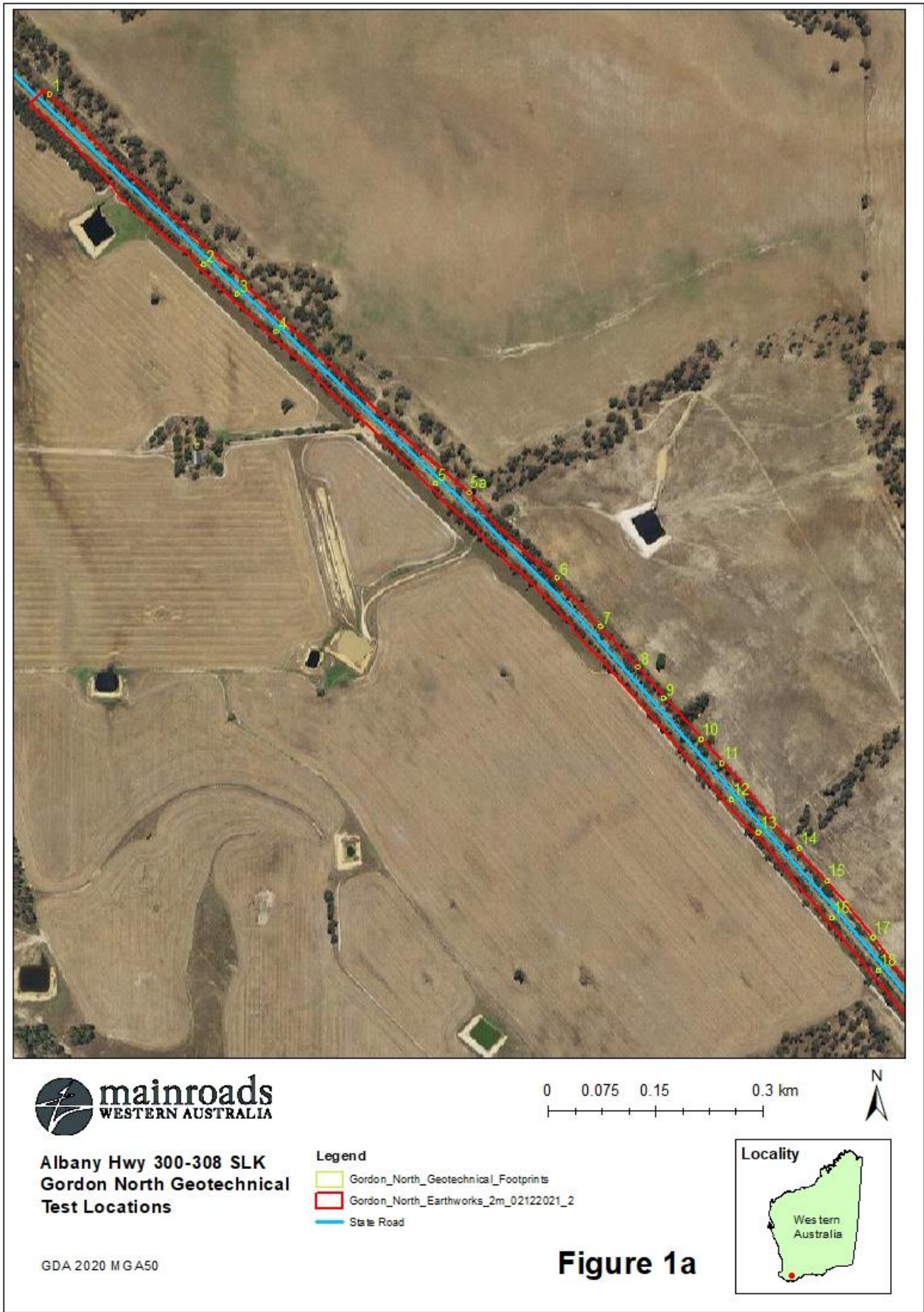


Figure 1a: Gordon North Geotechnical Investigations Proposal Area

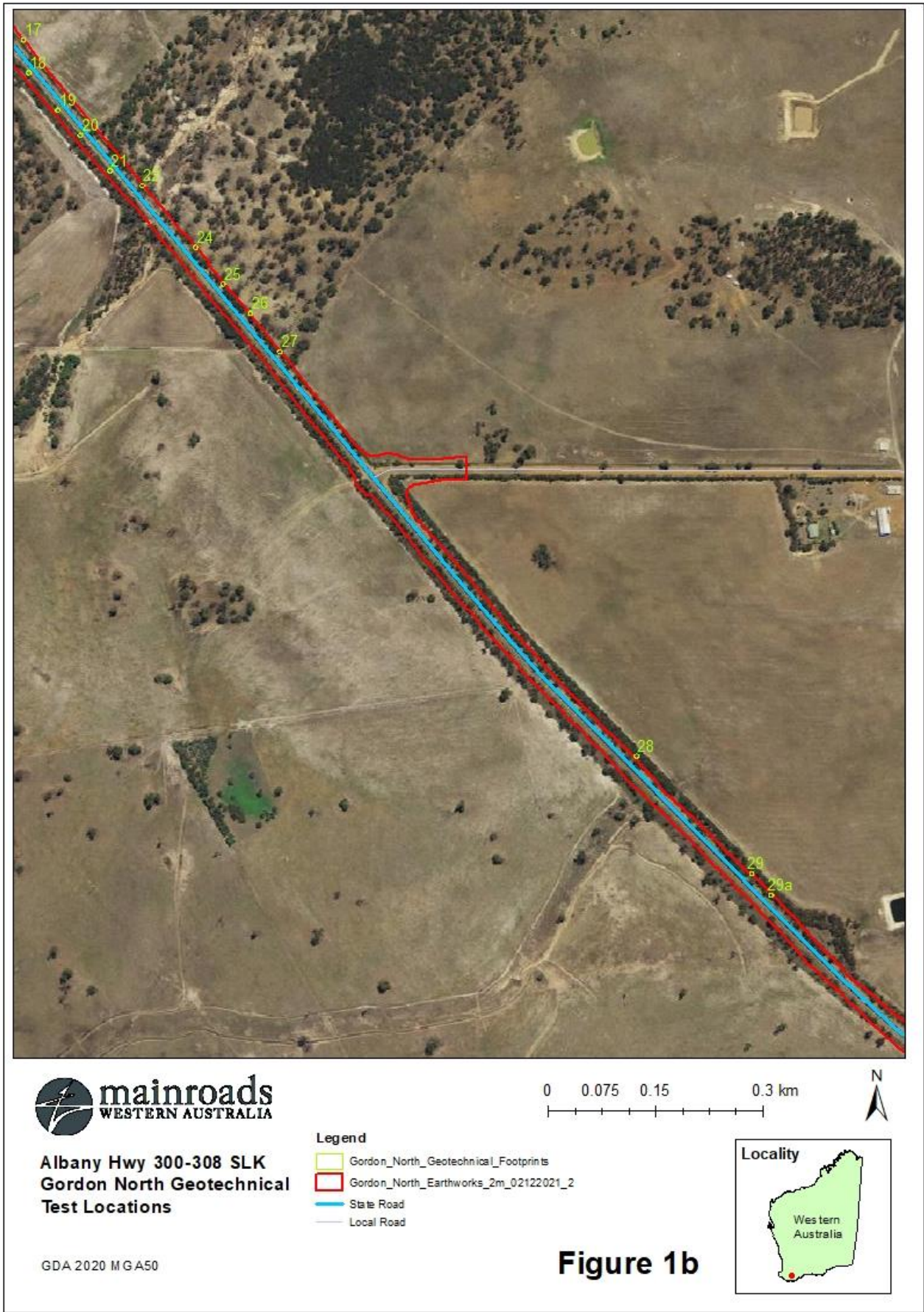


Figure 1b: Gordon North Geotechnical Investigations Proposal Area

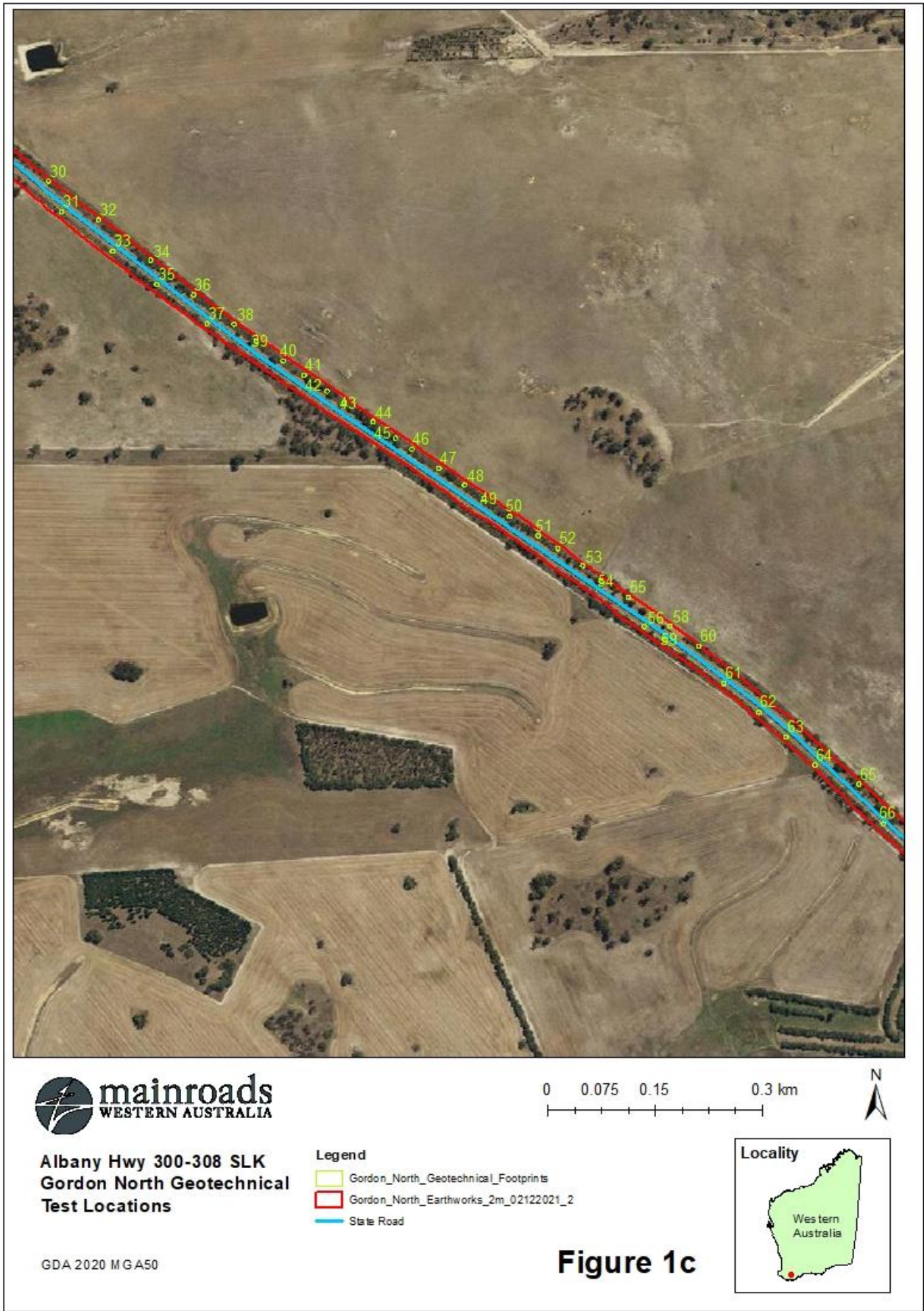


Figure 1c: Gordon North Geotechnical Investigations Proposal Area



Figure 1d: Gordon North Geotechnical Investigations Proposal Area

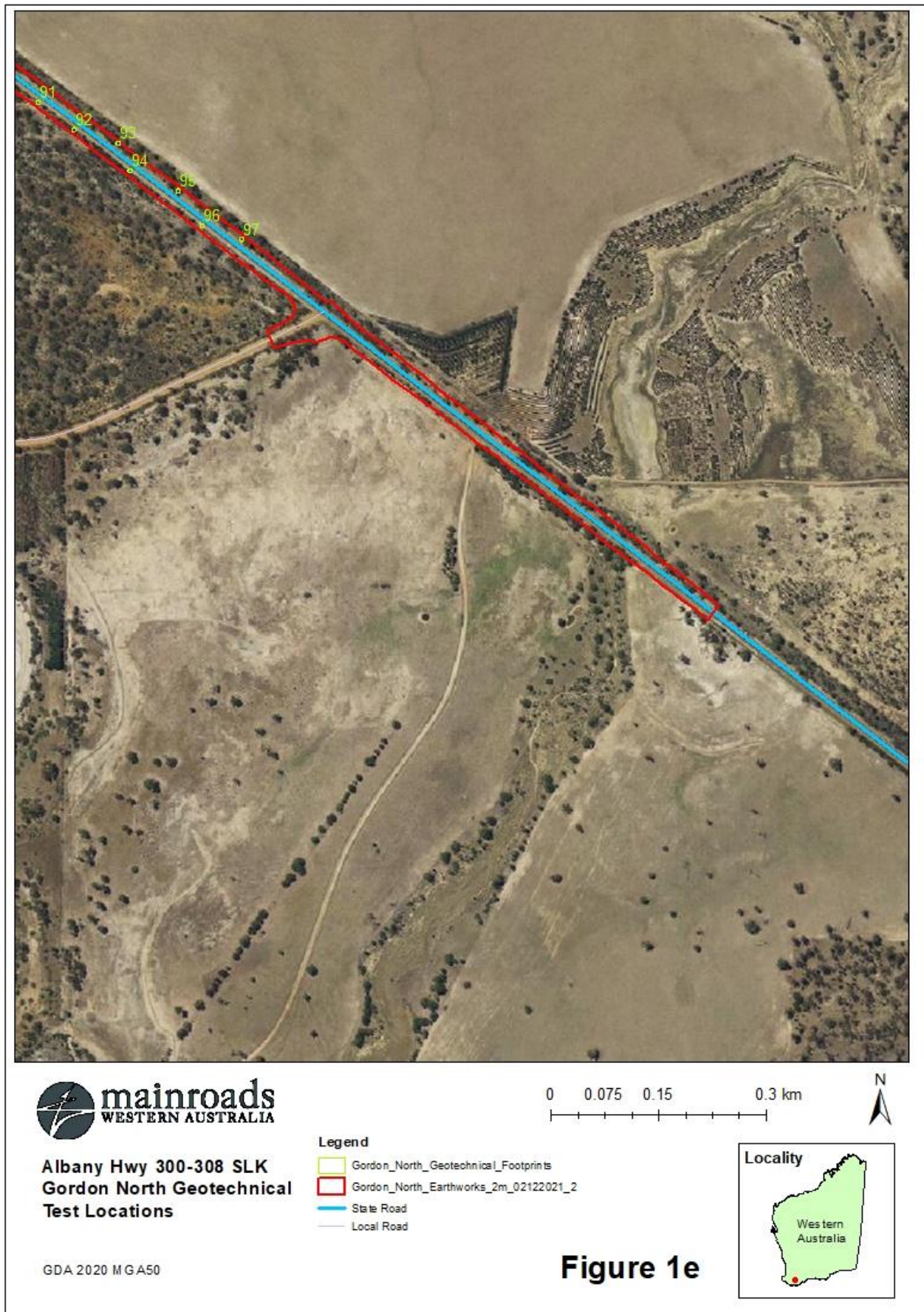


Figure 1e: Gordon North Geotechnical Investigations Proposal Area

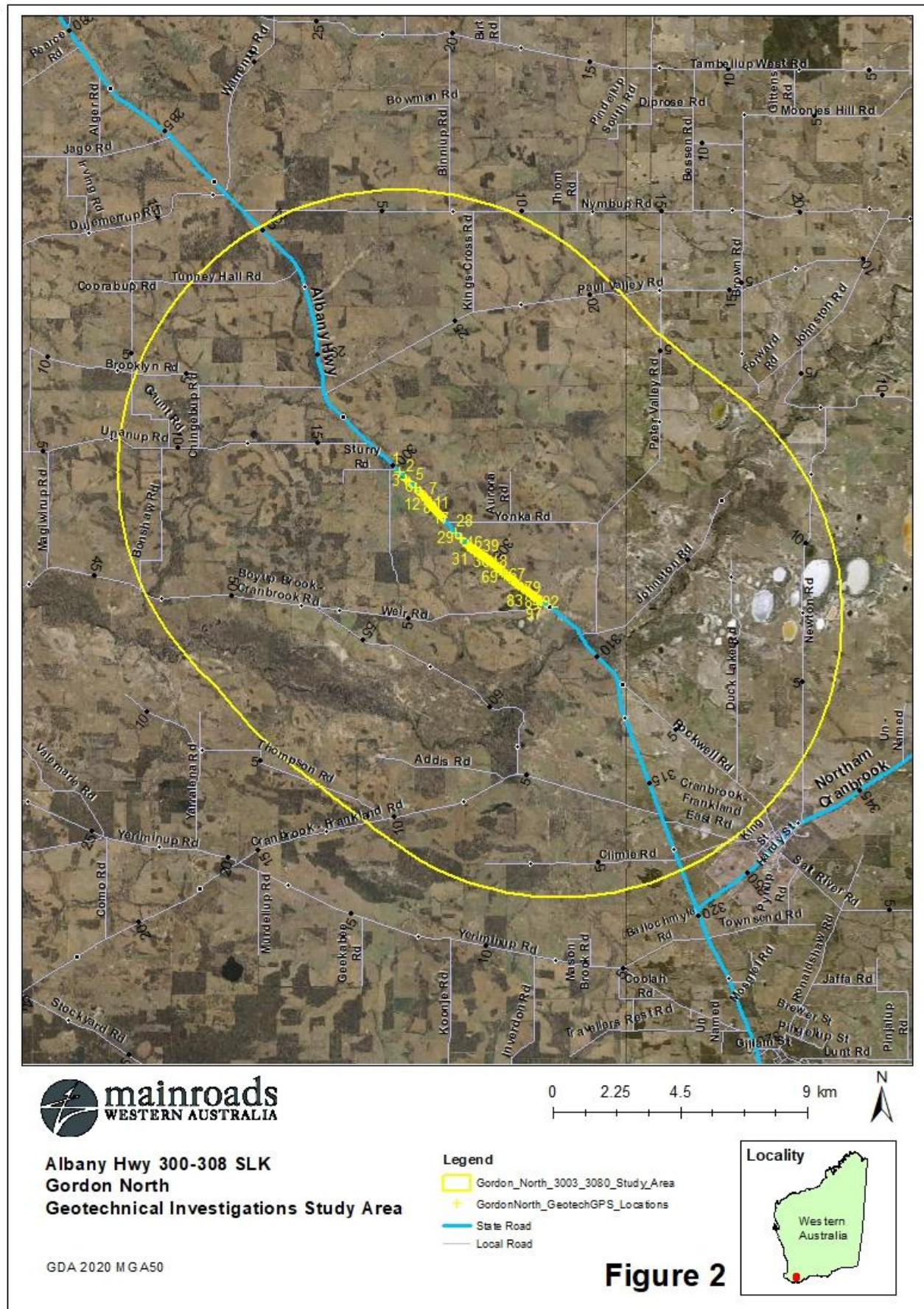


Figure 2. Proposal Location and Study Area

2.3 Alternatives to Clearing

Geotechnical Investigations (this proposal) have been selected in areas to minimise the amount of clearing required. Investigations are required to be undertaken in certain areas to inform road design but have been relocated where possible to reduce the impact on environmental constraints.

2.4 Measures to Avoid, Minimise, Mitigate and Manage Proposal Clearing Impacts

The design and management measures implemented to avoid and minimise the clearing impacts by the proposal are provided in Table 1. In addition, the following measures were adopted to avoid impacts to rare flora:

- Targeted flora surveys were conducted by Great Southern Bio Logic (2019) and Ecologia (2020) of the Gordon North Survey area, which nominally covered the Albany Hwy road reserve between 297 and 308 SLK, and included vegetated areas bordering onto the road reserve. No Threatened species were recorded in the Gordon North Survey area. GPS locations for all Priority 1 species identified within the survey area were provided to the Consulting Engineers to enable them to design works to avoid all of these plants.
- Further detail on the geotechnical test locations is provided in Section 5.

Table 1. Justification of Avoiding, Minimising, Mitigating and Managing Proposal Clearing Impacts

Design or Management Measure	Discussion and Justification
Steepen batter slopes	Not applicable – geotechnical investigations remaining within wider proposal footprint.
Installation of safety barriers	Not applicable – geotechnical investigations remaining within wider proposal footprint.
Alignment to one side of existing road	Not applicable – geotechnical investigations remaining within wider proposal footprint.
Alternative alignment to follow existing road (or) to preferentially locate within pasture or a degraded areas	Not applicable – geotechnical investigations remaining within wider proposal footprint.
Installation of kerbing	Not applicable – geotechnical investigations remaining within wider proposal footprint.
Simplification of design to reduce number of lanes and/or complexity of intersections	Not applicable – geotechnical investigations remaining within wider proposal footprint.
Preferential use of existing cleared areas for access tracks, construction storage and stockpiling	Geotechnical test pits have preferentially been located in cleared areas.
Drainage modification	Not applicable – geotechnical investigations remaining within wider proposal footprint.

2.5 Approved Policies and Planning Instruments

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.3), Main Roads has also had regard to

EPPs

- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992;
- Environmental Protection (Western Swamp Tortoise Habitat) Policy 2011

Relevant other policies and guidance documents:

- The Western Australian Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (DWER, December 2014)
- Procedure: Native vegetation clearing permits (DWER, October 2019)
- Environmental Offsets Guidelines (Government of Western Australia, August 2014)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Approved conservation advice under section 266B of the EPBC Act for threatened flora/fauna/vegetation communities
- Approved Recovery Plans for threatened species
- EPBC Act Referral guidelines for the three threatened black cockatoo species
- Strategic advice - EPA

Other Legislation of relevance for assessment of clearing and planning/other matters

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)
- *Rights in Water and Irrigation Act 1914* (WA) (RIWI Act)
- *Aboriginal Heritage Act 1972* (WA)
- *Town Planning and Development Act 1928* (WA)

3 SUMMARY OF SURVEYS

3.1 Biological Surveys

Numerous biological surveys have been undertaken for this and associated projects along Albany Highway including:

- Great Southern Bio Logic (2019) Albany Highway Gordon South Stage 2, 297 – 308 SLK, Flora Vegetation and Fauna Surveys
- Ecologia (2020a) Narrikup to Mount Barker and Gordon South Stage 1 and 2, Targeted Flora and Fauna Survey
- Ecologia (2020b) Gordon South Stage 1 and Stage 2 TEC Survey and Assessment
- Ecologia (2020c) Gordon South Stage 1 and Stage 2 Consolidated Vegetation Condition Mapping Review

3.1.1 Summary of Biological Surveys

Great Southern Bio Logic – Flora Vegetation and Fauna Surveys 2019

This survey was conducted over the 82 ha Gordon South Stage 2 (Gordon North) survey area which nominally covered the Albany Hwy road reserve between 297 and 308 SLK, and included vegetated areas bordering onto the road reserve. The geotechnical Proposal area is located within this larger survey area.

Great Southern Bio Logic was engaged to carry out a survey in Spring 2018.

A summary of flora and vegetation results is presented below:

- The vegetation condition within the survey area was rated from Very Good to Completely Degraded with the majority of the survey area rated either Good or Degraded.
- 71% (59.1ha) of the survey area represents native remnant vegetation. The rest of the survey area was roads, tracks, revegetation, or cleared areas (bare or introduced grassland).
- 11 vegetation units were mapped in the survey area. All but one unit (Planted) are equivalent to “associations” (Level 5), as defined in the National Vegetation Inventory Scheme (ESCAVI 2003)
- Approximately 40% (33.1 ha) of the survey area has been mapped as the *EPBC Act*. listed Eucalypt Woodland of the Western Australian Wheatbelt (EWWAW) TEC/ DBCA listed EWWAW Priority Ecological Community (PEC) - Priority 3 (iii).
- Parts of three vegetation units were found to be congruent with the EWWAW TEC and PEC. Comparison of quadrat data recorded in the survey area, with state wheat belt benchmark data, has been undertaken but was limited due to the paucity of benchmark data available for the southern portions of the relevant wheat belt bio-regions (Avon Wheatbelt 2).
- Two Priority flora species were recorded from the survey area.
 - *Xanthorrhoea brevistyla* (P4) was recorded at five locations consisting of 150+ plants, scattered throughout the Study Area; and
 - *Banksia porrecta* (P4) was recorded from 8 locations with a total of 15 plant clumps across the Study Area.
- A total of 46 weed species were identified within the survey area including **Moraea flaccida* (One-leaf Cape Tulip), which is listed as a Declared Pest and **Asparagus asparagoides* (Bridal Creeper), which is listed as a Declared Pest and as a Weed of National Significance.

A summary of fauna results are provided below.

- One significant fauna species, Carnaby's Cockatoo (*Calyptorhynchus latirostris*) (Threatened) was present within the survey area on one occasion.

- Two significant fauna species were considered likely to occur in the survey area.
 - Baudin's Cockatoo (*Calyptorhynchus baudinii*) (En, En); and
 - Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) (Vu, Vu).
- Three significant fauna species were considered to possibly occur in the survey area, however, none of these were recorded during the field survey.
 - Red-tailed Phascogale, kenngoor (*Phascogale calura*) (Vu, CD);
 - South-western Brush-tailed Phascogale, wambenger (*Phascogale tapoatafa wambenger*) (CD); and
 - Western Brush Wallaby (*Notamacropus irma*) (P4).

The fauna survey included a targeted survey for habitats that may be suitable for the three significant Black Cockatoo species (*Calyptorhynchus latirostris*, *Calyptorhynchus baudinii* and *Calyptorhynchus banksii naso*). The survey identified 45 trees of Wandoo and Jarrah species which contained or possibly contained hollows potentially suitable for Black Cockatoo nesting, and more than 500 trees of sufficient size which, in the future, may have the potential to form hollows suitable for Black Cockatoo nesting and are considered to be potential breeding trees.

The fauna survey also included a targeted survey for habitats that may be suitable for Black Cockatoo foraging. There was little evidence of foraging, however the survey identified vegetation communities containing known foraging species:

- potentially 55 ha of low-moderate foraging habitat for Canaby's and limited foraging habitat for Baudin's Cockatoo, and
- potentially 10 ha of low-moderate foraging habitat for Forest Red-tailed Black Cockatoo .

No actual roosting trees were identified and potential roosting trees could not be identified with confidence due to the lack of suitable guidelines in regards to roosting assessment.

Potentially suitable habitat for the Red-tailed Phascogale occurred in vegetation communities within the survey area containing both *Eucalyptus wandoo* and *Allocasuarina huegeliana*. Hollows with a suitable entrance diameter for Red Tailed Phascogale were recorded in about 50% of Wandoo trees inspected for potentially suitable Cockatoo hollows. This species is almost impossible to detect by sign, therefore no statement can be made about the presence of this species within the survey area.

Ecologia - Targeted Flora and Fauna Survey 2020

This survey was conducted over the 82 ha Gordon South Stage 2 (Gordon North) survey area which nominally covered the Albany Hwy road reserve between 297 and 308 SLK, and included vegetated areas bordering onto the road reserve. The geotechnical Proposal area is located within this larger survey area.

The flora and fauna assessment was conducted between 7th and 11th of October 2019. A summary of results is provided below.

Significant Flora

Four Priority Flora species have been recorded within the Gordon South Stage 2 survey area. Five Threatened and Priority flora species had been assessed as 'possibly occurring' within the survey area based on a likelihood of occurrence assessment.

Vertebrate Fauna Habitat Assessment

Habitat assessments were conducted at ten sites and a total of four habitat types were identified including Open Shrubland, Open Woodland, Samphire and Planted Woodland. The remainder of the survey area consists of Cleared/ Agricultural Land. Habitat was generally assessed as being in Good to Very Good condition.

Significant Fauna

One species of bird (Carnaby's cockatoo (EN BC Act and EPBC Act) has been previously recorded within the survey area. Six species were assessed as having a likelihood of occurrence rating of 'Possible', including four mammals (south-western brush-tailed phascogale [CD BC Act], western brush wallaby [P4 BC Act], red-tailed phascogale [CD BC Act, VU EPBC Act], quenda [P4 BC Act]) and two birds (peregrine falcon [OS BC Act], forest red-tailed black cockatoo [VU BC Act and EPBC Act]).

Targeted Red-Tailed Phascogale Survey

The Gordon South Stage 2 survey areas contain patches of potentially suitable foraging and breeding habitat for the red-tailed phascogale within the Open Woodland habitat type. Small patches of suitable habitat are found within *Eucalyptus wandoo* (wandoo) and *Allocasuarina huegeliana* (rock sheoak) vegetation association in which the wandoo was mature enough to provide potentially suitable hollows and the rock sheoak occurred as a moderately dense to dense upper or mid-layer providing a continuous canopy.

Ecologia - TEC Survey and Assessment 2020

The TEC assessment and survey was conducted between 7th – 11th October 2019. A summary of results are provided below.

The desktop assessment indicated the potential presence of the *Environment Protection and Biodiversity Conservation Act* 1999 listed 'Eucalypt Woodlands of the Western Australian Wheatbelt' Threatened Ecological Community (TEC), and the equivalent Department of Biodiversity, Conservation and Attractions (DBCA) listed Priority Ecological Community (PEC), within the desktop study area, which have also been recorded previously from the Gordon South Stage 1 and Gordon South Stage 2 survey areas. The 'Proteaceae dominated kwongan shrublands of the southeast coastal floristic province of Western Australia' TEC is also present within the desktop study area but does not occur within the survey area.

Seven quadrats and 40 sample sites were surveyed within the Gordon South Stage 1 and Gordon South Stage 2 survey areas to identify and map the Wheatbelt Woodlands TEC. The Wheatbelt Woodlands occurring within the survey areas are typically dominated by two eucalypt species that are key indicators of the TEC: *Eucalyptus occidentalis* (flat-topped yate) and *Eucalyptus wandoo* subsp. *wandoo* (wandoo).

Twelve of the assessed patches were not found to be TEC due to the dominance of *Allocasuarina huegeliana* or *Corymbia calophylla* in the overstorey and an additional 24 patches were excluded for not meeting the required minimum condition threshold according to the Department of Agriculture, Water and the Environment (DAWE) condition criteria.

Ten patches of eucalypt woodland (*Eucalyptus wandoo* subsp. *wandoo* and/or *Eucalyptus occidentalis* open woodland, with occasional *Allocasuarina* species) that corresponded to the Wheatbelt Woodlands TEC were recorded across both survey areas, seven corresponding to condition 'Category A' vegetation and three corresponding to condition 'Category D' vegetation. The total extent of the Wheatbelt Woodlands TEC is 5.02 ha (6.04% of total area) within the Gordon South Stage 2 survey area.

3.2 Targeted Flora and Fauna Surveys

Two targeted flora and fauna surveys were undertaken for the proposal:

- Kirkby (2021) Survey of Possible Black Cockatoo Breeding Trees and Hollows, Albany Hwy 297-308SLK, Gordon North
- Southern Ecology (2022) Albany Highway Gordon South Stage 1, 300 – 308 SLK, Targeted Flora Survey

Section 3.2.1 contains the summary of the assessment.

3.2.1 Summary of Targeted Flora and Fauna Surveys

Kirkby - Survey of Possible Black Cockatoo Breeding Trees and Hollows, Albany Hwy 297-308SLK, Gordon North 2021

The purpose of the survey was to inspect, in detail, eight trees containing hollows with an entrance of a suitable size to be used by black cockatoos *Calyptorhynchus spp.* as a breeding hollow. Hollows in a further 36 trees were also inspected from ground level for signs of use.

None of the eight trees inspected in detail had hollows suitable for black cockatoos.

27 of the 36 ground assessed trees contained a total of 35 hollows with an entrance size suitable for black cockatoos. Six of the 27 trees also contained hollows suitable for small parrots such as Australian Ringneck *Barnardius zonarius*. The hollow in tree 16 was seen to be blocked when viewed from the correct angle.

Of the 35 hollows, none showed signs externally of past or present use by black cockatoos.

The remaining nine of the 36 trees contained either no suitable hollows or small parrot hollows.

Southern Ecology - Flora Survey 2022

A total of 137 individuals were recorded within the survey area

The DBCA records from 1998 are reported to be of low accuracy. The specific habitat of the recorded population is not present.

4 VEGETATION DETAILS

4.1.1 Proposal Site Vegetation Description

The proposal site is located within the Great Southern region and is situated within a predominantly agricultural landscape.

Great Southern Bio Logic (2019) recorded the following seven vegetation types in the 0.27 ha Proposal area:

1. *Eucalyptus falcata* mallee shrubland
2. *Eucalyptus marginata* open woodland
3. *Eucalyptus occidentalis* and *Eucalyptus wandoo* low open woodland
4. *Eucalyptus occidentalis* low open woodland
5. *Eucalyptus pachyloma* mallee shrubland
6. *Eucalyptus wandoo* subsp. *wandoo* low open woodland
7. Mixed shrub

Ecologia (2020c) reported the vegetation condition within the 0.27 ha proposal area ranged from Very Good-Excellent to Degraded condition. 0.015 ha (9%) of the proposal area has vegetation in Good or better condition. 34% of the proposal area is mapped as being cleared.

Tables 2 to 4 provide details of the pre-European Vegetation Associations with the 0.27 ha proposal area, the remaining extents of these associations and the vegetation condition.

Table 2. Summary of Proposal Area's Mapped Pre-European Vegetation Associations

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
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Table 2. Summary of Proposal Area's Mapped Pre-European Vegetation Associations

Vegetation Association 967 described as a Medium woodland; wandoo & yate.	Clearing of up to 0.175 ha for the purpose of approximately 8 km of geotechnical investigations.	Very Good-Excellent to Degraded (EPA 2016)	Vegetation description and condition determined from biological surveys (Great Southern Bio Logic, 2019a and Ecologia, 2020a, 2020c)
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Table 3. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 967	Statewide	216,684	36,536	16.86	3.02
	IBRA Bioregion Avon Wheatbelt	174,907	26,637	15.23	1.43
	IBRA Sub-region Katanning	174,907	26,637	15.23	1.43
	Local Government Authority Shire of Cranbrook	282	202	71.68	99.37

Table 4. Vegetation condition in the geotechnical proposal area (Ecologia 2020c)

Vegetation Condition (EPA, 2016)	Area (ha)	Area (%)
Very Good-Excellent	0.0028	1.1
Very Good	0.0038	1.4
Good-Very Good	0.0085	3.2
Degraded-Good	0.1507	56.8
Degraded	0.0090	3.4
Cleared	0.0905	34.1
Total	0.2653	100.0

5 Assessment Against the Ten Clearing Principles

In assessing whether proposed clearing is likely to have a significant impact on the environment, the proposal was assessed against the ten Clearing Principles (Environmental Protection Act 1986, Schedule 5).

Each principle has been assessed in accordance with DWER's 'A Guide to the Assessment of Applications to Clear Native Vegetation' and other relevant CPS Decision Reports prepared by DWER.

The proposed clearing is not likely to be at variance with the 10 Clearing Principles.

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

Proposed clearing is not likely to be at variance to this Principle
The proposal requires the clearing of up to 0.175 ha of native vegetation within a Proposal area of approximately 0.27 ha. Ecologia (2020c) reports the vegetation condition as rated from Very Good-Excellent to Degraded. In the Proposal area, 9% (0.015 ha) of the vegetation was mapped as vegetation in good or better condition. Most (57% / 0.15 ha) of the vegetation was in a Degraded-Good condition. 34% (0.09 ha) of the Proposal area is mapped as cleared.

The Proposal area is mapped as Beard Vegetation Association 967 described as a Medium woodland; wandoo & yate.

Great Southern Bio Logic (2019) mapped seven vegetation types in the 0.27 ha Proposal area, namely:

- *Eucalyptus falcata* mallee shrubland
- *Eucalyptus marginata* open woodland
- *Eucalyptus occidentalis* and *Eucalyptus wandoo* low open woodland
- *Eucalyptus occidentalis* low open woodland
- *Eucalyptus pachyloma* mallee shrubland
- *Eucalyptus wandoo* subsp. *wandoo* low open woodland
- Mixed shrub

The remnant vegetation layer (DAFWA, 2019) indicates there is over 12,500 ha of remnant vegetation occurring within 10 km of the Proposal area.

TEC/PEC

The EPBC Act Protected Matters Search Tool (Appendix B) and DBCA Shapefile mapping indicated:

- Two EPBC Act listed TECs / DBCA Listed PECs potentially occur within the 10km desktop study area: 'Eucalypt Woodlands of the Western Australian Wheatbelt' (Wheatbelt Woodlands) (Critically Endangered / P3) and 'Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Kwongan Shrubland) (Endangered / P3).
- No State listed TECs were identified as occurring in the study/survey area.

Ecologia (2020b) mapped 5.02 ha of Wheatbelt Woodland EPBC Act listed TEC and DBCA listed PEC in the 82 ha Gordon North survey area, of which 0.008 ha is mapped to occur within the geotechnical Proposal area. Of the 97 test pits, only one (No 1) is fully located within mapped TEC, whilst five (Nos. 72, 74, 76, 78 and 80) are partially located within mapped TEC. The remaining test pits do not intersect the TEC/PEC. Photographs of each affected test location are provided below. At least half of the areas appear to be devoid of native vegetation where the test pits are proposed to be located (although are mapped as TEC).



Test Pit 1

Test Pit 72

Test Pit 74



Test Pit 76



Test Pit 78



Test Pit 80

Preferentially, open/cleared areas will be selected at these locations for excavation and spoil stockpiling.

The removal of 0.008 ha of mapped TEC/PEC equates to 0.16% of the 5.02 ha of TEC/PEC mapped in the 82 ha survey area. The clearing comprises six separate areas each less than .28m², is circular and minor in nature and is adjacent to the highway. Clearing for the proposal is unlikely to significantly impact this TEC/PEC or the function of surrounding patches of TEC/PEC within the local area.

Flora

The EPBC Act Protected Matters Search Tool (Appendix B) indicated 16 Listed Threatened flora within the 10km study area. The following listed Threatened species were identified as having the potential to occur within the study area.

Flora

- *Adenanthos pungens subsp. effusus* (Sprawling Spiky Adenanthos) (EN)
- *Adenanthos velutinus* (Velvet Wollybush) (EN)
- *Banksia pseudoplumosa* (False Plumed-Banksia) (EN)
- *Conostylis misera* (Grass Conostylis) (EN)
- *Phenotoma drummondii* (Mountain Paper-heath) (EN)
- *Roycea pycnophylloides* (Saltmat) (EN)
- *Adenanthos pungens subsp. pungens* (Spiky Adenanthos) (VU)
- *Caladenia christineae* (Christine's Spider Orchid) (VU)
- *Diuris drummondii* (Tall Donkey Orchid) (VU)
- *Diuris micrantha* (Dwarf Bee-orchid) (VU)
- *Drakaea micrantha* (Dwarf Hammer-orchid) (VU)
- *Gastrolobium lehmannii* (Cranbrook Pea) (VU)

Although not listed in the Protected Matters Search Tool, *Acacia prismifolia* (X) has been recorded as part of the Gordon South Proposal, over 3 km south of the southern-most geotechnical test pit.

Desktop searches identified 18 State conservation significant species within the 10km study area:

- *Acacia prismifolia* (X)
- *Gastrolobium lehmannii* (T)
- *Acacia microneural* (P1)
- *Banksia lepidorhiza* (P1)
- *Melaleuca ordinifolia* (P2)
- *Bossiaea spinosa* (P3)
- *Stylidium lepidum* (P3)
- *Stylidium pseudohirsutum* (P3)
- *Stylidium roseonanthum* (P3)
- *Stylidium roseonanthum* (P3)

- *Thysanotus gageoides* (P3)
- *Thysanotus parviflorus* (P3)
- *Verticordia coronata* (P3)
- *Banksia acuminata* (P4)
- *Banksia porrecta* (P4)
- *Caladenia integra* (P4)
- *Caladenia x triangularis* (P4)
- *Xanthorrhoea brevistyla* (P4)

Ecologia (2020) undertook a Targeted Flora and Fauna Survey in October 2019. Three State significant (flora) species were recorded within the wider Gordon North survey area:

- *Banksia lepidorhiza* (P1)
- *Banksia porrecta* (P4)
- *Xanthorrhoea brevistyla* (P4)

The 0.27 ha Proposal area is located within the wider 82 ha Gordon North survey area.

Ecologia considered that the other identified State conservation significant species were unlikely to occur in the survey area.

Southern Ecology (2022) undertook a Targeted Flora Survey in October 2022.

None of the above species were recorded within the geotechnical investigation areas.

As the program for geotechnical investigation works have been amended to avoid impacts on all Priority species, it is unlikely that proposed clearing will significantly impact on the floristic biodiversity of the area.

Fauna

The Proposal area is within the modelled distribution for Carnaby's Cockatoo, and on the eastern edge of the modelled distribution for Baudin's Cockatoo and Forest Red-tailed Black Cockatoo.

Ecologia (2020a) identified two potential fauna habitat types within the Proposal area – Open Woodland (*Eucalyptus occidentalis* and *Eucalyptus wandoo* low open woodland), and Open Shrubland (*Melaleuca cuticularis* tall open shrubland).

The likelihood of occurrence assessment for the Gordon North survey area was reviewed on the basis of the current field survey results. One conservation significant species, Carnaby's cockatoo (EN), has been previously recorded from the survey area. Four mammal species and two birds were assessed as having a likelihood of occurrence rating of 'Possible'. Thirteen species, including ten mammals and three birds, were assessed as 'Unlikely' to occur within the survey area.

Suitable breeding and foraging habitat for the Carnaby's cockatoo (*Calyptorhynchus latirostris*) (T) was identified by Great Southern Bio Logic within the Open Shrubland, and Open Woodland habitat types.

The species that were considered likely or possible to occur in the survey area are listed below:

Taxon	Likelihood of Occurrence	Potentially suitable vegetation type
Peregrine falcon (<i>Falco peregrinus</i>)	Possible	Has the potential to overfly all habitat types.
Carnaby's cockatoo (<i>Calyptorhynchus latirostris</i>)	Confirmed / likely	The vegetation communities <i>Eucalyptus marginata</i> open woodland (either with or without <i>Corymbia calophylla</i>), and <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i> low open woodland within the survey area are all considered to provide foraging, and potential breeding and roosting habitat for this species. Some wandoo woodland occurs in the Proposal area. Likely suitable breeding and foraging habitat, although no overstorey is being removed.
Forest red-tailed black cockatoo (<i>Calyptorhynchus banksia naso</i>)	Possible	Vegetation communities containing <i>Eucalyptus wandoo</i> , <i>E. marginata</i> and <i>Corymbia calophylla</i> (as occasional species) provide breeding opportunities for this species (Emar, EocEwan, Ewan). <i>Eucalyptus marginata</i> open woodland (Emar) is considered foraging habitat for forest red-tailed black cockatoo, as are the eucalypt woodland communities that contain occasional <i>Corymbia calophylla</i> (Emar and EocEwan). Some wandoo woodland occurs in the Proposal area, although no overstorey is being removed.

Quenda, southern brown bandicoot (<i>Isodon fusciventer</i>)	Possible	Broadly suitable habitat occurred within all vegetation communities. Species recorded within the <i>Eucalyptus occidentalis</i> , <i>E. wandoo</i> , <i>Allocasuarina huegeliana</i> vegetation unit. This vegetation unit occurs in the Proposal area. Test sites have been chosen to avoid clearing of native vegetation where possible.
Red-tailed phascogale, (<i>Phascogale calura</i>)	Possible	The most suitable habitat occurs within the Open Woodland habitat type containing <i>Eucalyptus wandoo</i> and <i>Allocasuarina huegeliana</i> in which the wandoo was mature enough to provide potentially suitable hollows and the rock sheoak occurred as a moderately dense to dense upper or mid-layer providing a continuous canopy. Up to 0.01 ha of mapped Red-tailed Phascogale habitat may be cleared as a result of geotechnical investigations (Test pits 26, 27, 89-92, 94 and 96). This represents approximately 0.11 % of suitable habitat identified in the survey area.
South-western brushtailed phascogale, (<i>Phascogale tapoatafa wambenger</i>)	Possible	Woodlands and open forests containing marri and jarrah and possibly Wandoo are potential habitats within the survey area. <i>Eucalyptus wandoo</i> does occur in the Proposal area, but is not preferred habitat for South-western brushtailed phascogale.
Western brush wallaby, (<i>Notamacropus irma</i>)	Possible	Potentially suitable habitat occurs within the open forest and woodland vegetation communities that contain a low fairly open shrub/ground layer, with patches of shrub thickets. Suitable habitat may occur in the Proposal area, although due to the largely linear nature of the remnant vegetation and the closeness of the road, it is not a preferred habitat.

Great Southern Bio Logic (2019) reports that the roadside corridor connects some small patches of remnant vegetation and should be considered as medium conservation value.

As no trees will be cleared for geotechnical investigations, it is unlikely that the removal of the vegetation will have any impact on Black Cockatoo foraging, roosting or breeding.

As the proposed clearing is circular and minor in nature, there is a significant amount of similar and better quality habitat immediately adjacent to the Proposal area, and no DBH trees will be cleared, the proposed clearing is unlikely to have a significant impact on the biodiversity of this area.

Based on the above, vegetation within the Proposal area is unlikely to comprise a high level of biological diversity and proposed clearing is not likely to be at variance to this principle.

Methodology

Ecologia (2020a, 2020b)
Great Southern Bio Logic (2019)
Kirkby (2021)
Main Roads GIS Shapefiles
Southern Ecology (2022)

(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.

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

Ecologia (2020a) identified two potential fauna habitat types within the Proposal area – Open Woodland (*Eucalyptus occidentalis* and *Eucalyptus wandoo* low open woodland), and Open Shrubland (*Melaleuca cuticularis* tall open shrubland).

Ecologia (2020a) reports that the roadside corridor connects some small patches of remnant vegetation and should be considered as medium conservation value.

Ecologia considered that only one species (Carnaby's cockatoo) was likely to occur in the Proposal area, with six being Possible to occur, as listed below:

Taxon	Likelihood of Occurrence	Potentially suitable vegetation type
Peregrine falcon (<i>Falco peregrinus</i>)	Possible	Has the potential to overfly all habitat types.

Carnaby's cockatoo (<i>Calyptorhynchus latirostris</i>)	Confirmed / likely	The vegetation communities <i>Eucalyptus marginata</i> open woodland (either with or without <i>Corymbia calophylla</i>), and <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i> low open woodland within the survey area are all considered to provide foraging, and potential breeding and roosting habitat for this species. Some wandoo woodland occurs in the Proposal area. Likely suitable breeding and foraging habitat, although no overstorey is being removed.
Forest red-tailed black cockatoo (<i>Calyptorhynchus banksia naso</i>)	Possible	Vegetation communities containing <i>Eucalyptus wandoo</i> , <i>E. marginata</i> and <i>Corymbia calophylla</i> (as occasional species) provide breeding opportunities for this species (Emar, EocceEwan, Ewan). <i>Eucalyptus marginata</i> open woodland (Emar) is considered foraging habitat for forest red-tailed black cockatoo, as are the eucalypt woodland communities that contain occasional <i>Corymbia calophylla</i> (Emar and EocceEwan). Some wandoo woodland occurs in the Proposal area, although no overstorey is being removed.
Quenda, southern brown bandicoot (<i>Isodon fusciventer</i>)	Possible	Broadly suitable habitat occurred within all vegetation communities. Species recorded within the <i>Eucalyptus occidentalis</i> , <i>E. wandoo</i> , <i>Allocasuarina huegeliana</i> vegetation unit. This vegetation unit occurs in the Proposal area. Test sites have been chosen to avoid clearing of native vegetation where possible.
Red-tailed phascogale, (<i>Phascogale calura</i>)	Possible	The most suitable habitat occurs within the Open Woodland habitat type containing <i>Eucalyptus wandoo</i> and <i>Allocasuarina huegeliana</i> in which the wandoo was mature enough to provide potentially suitable hollows and the rock sheoak occurred as a moderately dense to dense upper or mid-layer providing a continuous canopy. Up to 0.01 ha of mapped Red-tailed Phascogale habitat may be cleared as a result of geotechnical investigations (Test pits 26, 27, 89-92, 94 and 96). This represents approximately 0.11 % of suitable habitat identified in the survey area.
South-western brushtailed phascogale, (<i>Phascogale tapoatafa wambenger</i>)	Possible	Woodlands and open forests containing marri and jarrah and possibly Wandoo are potential habitats within the survey area. <i>Eucalyptus wandoo</i> does occur in the Proposal area, but is not preferred habitat for South-western brushtailed phascogale.
Western brush wallaby, (<i>Notamacropus Irma</i>)	Possible	Potentially suitable habitat occurs within the open forest and woodland vegetation communities that contain a low fairly open shrub/ground layer, with patches of shrub thickets. Suitable habitat may occur in the Proposal area, although due to the largely linear nature of the remnant vegetation and the closeness of the road, it is not a preferred habitat.

Thirteen species, including ten mammals and three birds, were assessed as 'Unlikely' to occur within the survey area.

The Proposal area is within the modelled distribution for Carnaby's Cockatoo, and on the eastern edge of the modelled distribution for Baudin's Cockatoo and Forest Red-tailed Black Cockatoo.

Suitable low-moderate breeding and foraging habitat for the Carnaby's Cockatoo (*Calyptorhynchus latirostris*) (T) was identified by Great Southern Bio Logic within the Open Shrubland, and Open Woodland habitat types.

Great Southern Bio Logic report that of the 55 ha of low-moderate quality potential Black Cockatoo habitat (10ha of foraging habitat) that occur in the 82 ha Gordon North survey area, 0.32% occurs within the Proposal area, assuming all is considered to be suitable habitat. No evidence of breeding, roosting or foraging observed for all Black Cockatoo species.

Within the wider 82 ha survey area, Great Southern Bio Logic recorded 580 trees with a suitable diameter at breast height (DBH), with 44 considered to contain potentially suitable breeding hollows. A detailed investigation by Kirkby (2021) confirmed that the Proposal area did not contain any DBH trees with suitable hollows.

As no trees will be cleared as a result of the geotechnical investigations, it is unlikely that Black Cockatoo foraging, roosting and breeding habitat will be impacted

The remnant vegetation layer (DAFWA, 2019) indicates there is over 12,500 ha of remnant vegetation of Eucalypt woodlands occurring within 10 km of the proposal area. Taking into consideration the low level of Carnaby's Cockatoo activity in the survey area; the lack of foraging habitat for Forest Red-tailed Black Cockatoo; no DBH trees will be removed, the circular and minor clearing dispersal over an 8 km stretch of road adjacent to the highway, clearing of up to 0.175 ha of Carnaby's Cockatoo low-moderate foraging habitat is unlikely to significantly impact this species, given:

- Great Southern Biologic (2019) identified 55 ha of similar or better quality foraging habitat immediately adjacent to the Proposal area within the adjacent 82 ha survey area.
- DAFWA has mapped over 12,500 ha of remnant vegetation occurring within 10 km of the Proposal area.

Great Southern Bio Logic (2019) determined that potentially suitable habitat for the red-tailed phascogale occurred in the survey area containing vegetation communities containing *Eucalyptus wandoo* and *Allocasuarina huegeliana* (rock sheoak) in which the wandoo was mature enough to provide potentially suitable hollows and the rock sheoak occurred as a moderately dense to dense upper or mid-layer providing a continuous canopy. Ecologia (2020a) reported that it is unlikely that the survey area contains a sufficient number of large patches of suitable habitat to sustain a permanent population of red-tailed phascogales. It is possible that the red-tailed phascogale may utilise the roadside habitat as a linear corridor to traverse between larger patches of remnant vegetation.

Up to 0.01 ha of mapped Red-tailed Phascogale habitat may be cleared as a result of geotechnical investigations (Test pits 26, 27, 89-92, 94 and 96). This represents approximately 0.11 % of the potentially suitable habitat identified in the survey area. Two of the eight geotechnical locations mapped as possible Red-tailed Phascogale habitat are located in the northern portion of the geotechnical Proposal area – an area where linkages to other vegetation do not exist, making this area considered to be unlikely habitat.

Quenda is listed as Priority 4 by DBCA. Evidence of Quenda were not recorded within the survey area. As the habitat for Quenda is similar to that of Red-tailed Phascogale, similar impacts are expected, and unlikely to significantly impact the Quenda.

Great Southern Bio Logic (2019) report that potentially suitable habitat for the Western Brush Wallaby occurs within the open forest, woodland and open woodland vegetation communities of the survey area, particularly those that contain a low, fairly open shrub/ground layer, with patches of shrub thickets (e.g. *Eucalyptus marginata*/*E. wandoo* Woodland). This species may be an occasional visitor to the survey area using roadside vegetation as part of its normal home range where roadside vegetation is contiguous with larger patches of potentially suitable habitat around the Gordon River. Where the remnant vegetation occurs only along the roadside, suitable habitat may act as a corridor between larger suitable remnants.

Due to the small footprints of geotechnical investigations (up to 28 m² each), spread over 8 km of road network, avoiding all overstorey species and other vegetation where possible, the proposed clearing is unlikely to comprise the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia, and is not likely to be at variance to this principle.

Methodology

DBCA Shapefiles
Ecologia (2020a, 2020cb)
Great Southern Bio Logic (2019)
Kirkby (2021)

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

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

Targeted flora surveys by Great Southern Bio Logic (2019) and Ecologia (2020a) did not record any rare flora in the Gordon North survey area, and Southern Ecology (2022) did not record any rare flora in its smaller targeted survey area near the corner of Albany Hwy and Weir Road.

Proposed works will not involve clearing of any rare flora or the removal of habitat considered necessary for the continued existence of rare flora. Therefore, the Proposal is not likely to be at variance to this principle.

Methodology

DBCA shapefiles
Great Southern Bio Logic (2019)

Ecologia (2020a)
Southern Ecology (2022)

(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.

Proposed clearing is not at variance to this Principle

The desktop assessment did not identify any State listed TECs within the desktop study area. No State listed TECs were recorded within the proposal area during the survey.

As no State listed TECs were identified in the proposal area, the proposed clearing is not at variance to this principle.

Methodology

DBCA shapefiles
Ecologia (2020b)
EPBC Act Protected Matters Report

(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.**Proposed clearing is unlikely to be at variance to this Principle**

The Proposal proposes to clear up to 0.175 ha within a 0.27 ha proposal area and is mapped as containing pre-European vegetation association 967 described as Medium woodland; wandoo & yate, as shown in the tables below.

Vegetation association 967 retains 16.86% of its pre-European extent at a Statewide scale, and 15.23% at the IBRA bioregion and subregion scales. The vegetation associations is above the 30% threshold at a LGA level, with 71.68% of extents remaining.

Pre-European Vegetation Associations	Clearing Description	Vegetation Condition	Comments
Vegetation Association 967 described as a Medium woodland; wandoo & yate.	Clearing of up to 0.175 ha for the purpose of geotechnical investigations.	Very Good-Excellent to Degraded (EPA 2016)	Vegetation description and condition determined from biological surveys (Great Southern Bio Logic, 2019a and Ecologia, 2020a, 2020c)

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 967	Statewide	216,684	36,536	16.86	3.02
	IBRA Bioregion Avon Wheatbelt	174,907	26,637	15.23	1.43
	IBRA Sub-region Katanning	174,907	26,637	15.23	1.43
	Local Government Authority Shire of Cranbrook	282	202	71.68	99.37

Vegetation Associations 967 has:

- 26,637 ha a remaining at the subregion level,
- 202 ha at an LGA level, and
- 7,560 ha remaining within 10km of the proposal area.

Main Roads proposes to clear up to 0.175 ha of Vegetation Association 967, which equates to:

- 0.0007% of vegetation 967 at the subregion level, and
- 0.0009% of vegetation 967 at an LGA level.

The condition of vegetation ranges from Very Good-Excellent (1.1%), Very Good (1.4%), Good-Very Good (3.2%), Degraded-Good (56.8%) and Degraded (3.4%).

Accordingly, Main Roads proposes to clear a calculated:

- 0.015 ha of Vegetation Association 967 in Good-Degraded or better condition.

The clearing of up to 0.175 ha of vegetation will not have a significant impact on the extent of remnant native vegetation, as:

- The proposed clearing comprises 97 small areas (up to 28 m² each) spread over 8 km of road network, and trees will be avoided
- Most of the vegetation does not comprise part of a larger remnant (> 5ha)
- Clearing is largely in areas that have been subject to edge effects.
- Given limited biodiversity, clearing is unlikely to impact on ecosystem services.
- Clearing area is unlikely to comprise habitat for threatened fauna species.
- Clearing area is not part of a significant ecological linkage.

The clearing will occur in an area where more than 30% of vegetation at its pre-European extent remains for the vegetation unit (967) at a LGA level (71%) equates to less than 0.0005% of the vegetation unit remaining at a State level, the Proposal area is not considered a significant remnant within an extensively cleared landscape and is unlikely to be at variance with this principle.

Methodology

Ecologia (2020a, 2020c)

EPA (2016)

Government of Western Australia (2019)

Great Southern Bio Logic (2019)

Shepherd (2009)

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Proposed clearing is not at variance to this Principle
<p>Great Southern Bio Logic (2019) mapped seven vegetation types in the 0.27 ha Proposal area, namely:</p> <ul style="list-style-type: none"> • <i>Eucalyptus falcata</i> mallee shrubland • <i>Eucalyptus marginata</i> open woodland • <i>Eucalyptus occidentalis</i> and <i>Eucalyptus wandoo</i> low open woodland • <i>Eucalyptus occidentalis</i> low open woodland • <i>Eucalyptus pachyloma</i> mallee shrubland • <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i> low open woodland • Mixed shrub <p>None of the vegetation types are typically associated with growing in a watercourse or wetland. Accordingly, the proposed clearing is not at variance to this principle.</p>
<p>Methodology Great Southern Bio Logic (2019)</p>

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

Proposed clearing is not likely to be at variance to this Principle
<p>DAFWA risk mapping indicates the soils of the proposal area have generally low to moderate risk of water erosion, a moderate to high risk of wind erosion, a low to moderate risk of salinity, and a low to moderate water logging risk.</p> <p>The Australian Soil Resource Information System (ASRIS) has been used to determine the likelihood of Acid Sulphate Soils (ASS) occurring within the Proposal area. The ASRIS database indicates there is a low probability (beige shading) or extremely low probability (green shading) of ASS occurrence within the Proposal area (Appendix A).</p> <p>Given the circular and minor nature of clearing, the proposed clearing is not likely to lead to an appreciable increase in land degradation. Standard erosion and dust management control measures will be implemented via the PEMR during investigation works to reduce the incidence of wind erosion.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this principle.</p>
<p>Methodology DAFWA shapefiles (accessed 04-Mar-2022) ASRIS mapping (accessed 16-Feb-2022)</p>

(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.

Proposed clearing is not at to this Principle
<p>There are no DBCA managed lands in the vicinity of the Proposal area (Figure 4). The nearest DBCA managed land is located more than 10km from the proposal area. At this distance, the proposed clearing is not expected to impact on the values of this reserve.</p> <p>Accordingly, clearing of vegetation will not have an impact on the environmental values of any adjacent or nearby conservation area.</p>
<p>Methodology DBCA shapefiles</p>

(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.

Proposed clearing is not likely to be at variance to this Principle
<p>The closest mapped watercourse is located approximately 40 m from test pit 24. of the 97 geotechnical investigation areas. The localised disturbance of this single location is highly unlikely to impact on the quality of surface water in this area. The rest of the locations are distant from mapped waterways/ wetlands.</p> <p>The proposal is not located within a Public Drinking Water Source Area, Groundwater Area or within a CAWS Act Catchment (Figure 4).</p> <p>Dewatering will not be required during geotechnical investigations and clearing of such a small area of native vegetation over the 8 km wider proposal length is not likely to impact on groundwater quality.</p> <p>Given no dewatering or major drainage modifications are required and the scale of clearing is very minor and circular in nature, no deterioration of surface or underground water levels or quality is expected to result from clearing; the proposal is not likely to be at variance to this Principle.</p>
<p>Methodology DWER and DBCA shapefiles</p>

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

Proposed clearing is not at variance to this Principle
<p>Cranbrook (13km south east of the proposal area) receives an average of 496 mm of rainfall per year (Bureau of Meteorology Australia (2022)), predominantly from May to October.</p> <p>DAFWA mapping indicates that most of the proposal area is mapped as Carrolup 2 Subsystem, described as <i>grey sandy duplex soils on slopes, hill crests and less commonly minor drainage lines, within the Carrolup system</i>.</p> <p>Sandy soils typically have a significant infiltration capacity, so it is unlikely that runoff or flooding will occur as a result of the proposed clearing.</p> <p>DAFWA risk mapping indicates the soils of the proposal area have a low to moderate water logging risk over the proposal area.</p> <p>Given the circular and minor nature of the clearing over the 8 km proposal area, the sandy nature of the soil, the proposed clearing will not cause or exacerbate the incidence or intensity of flooding.</p>
<p>Methodology Bureau of Meteorology Australia (2022) DAFWA Shapefiles (accessed 04-Mar-2022)</p>

6 ADDITIONAL ACTIONS REQUIRED

The clearing associated with the proposal is unlikely or not at variance with the Clearing Principles. Additional management actions under CPS 818 are detailed in Table 6.

Table 5. Summary of Additional Management Actions Required by Permit CPS 818

Impact of Clearing	Yes/No or NA	Further Action Required
<p>1. The CAR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.</p> <p>Where the clearing is at variance or may be at variance to Clearing Principle (f) and no other Clearing Principle, and the area of the proposed clearing is less than 0.5 hectares in size and the Clearing Principle (f) impacts only relate to:</p> <ul style="list-style-type: none"> (i) a minor non-perennial watercourse(s); (ii) a wetland(s) classed as a multiple use management category wetland(s); and/or (iii) a wetland that is not a defined wetland; <p>the preparation of an Assessment Report, as required by condition 6(e), is not required.</p>	No	No further action required
<p>2. Clearing is at variance or may be at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality or (j) the incidence of flooding.</p>	No	No further action required.
<p>3. The proposal involves clearing for temporary works (as defined by CPS 818).</p>	No	No further action required.
<p>4 a. Proposal is within Region that:</p> <ul style="list-style-type: none"> - Has rainfall greater than 400mm and - Is South of the 26th parallel and - Works are in 'Other than dry conditions' and - Works have potential for uninfested areas to be impacted 	Yes	Proceed with standard Vehicle and Plant management actions from PEMR's and Vehicle and Plant Hygiene Checklists. A project specific PEMR has been developed for the proposed clearing.
<p>4b. Does the proposed works require clearing within or adjacent to DBCA estate in non-dry conditions?</p>	No	No further action required.
<p>5. Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback</p>	No	No further action required.
<p>6. The vegetation within the area to be cleared and/or the surrounding vegetation in a good or better condition and weeds likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.</p>	Yes	<p>Great Southern Biologic mapped Declared weeds in the 82ha Gordon North survey area. The closest records were adjacent to Test Pit 82 (Bridal Creeper), followed by 10m from Test Pit 52.</p> <p>Prior to geotechnical investigation works, the declared weed adjacent to Test Pit 82 will be controlled.</p>

7 STAKEHOLDER CONSULTATION

Main Roads did not need to undertake stakeholder consultation in accordance with CPS 818/15 Condition 8, as the CAR did not identify that clearing was likely to be at variance or may be at variance to any of the clearing principles (as specified in Condition 7n).

8 VEGETATION MANAGEMENT

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum.

9 REFERENCES

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Kirkby (2021) Survey of Possible Black Cockatoo Breeding Trees and Hollows, Albany Hwy 297-308SLK, Gordon North

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Southern Ecology (2022) Albany Highway Gordon South Stage 1, 300 – 308 SLK, Targeted *Banksia lepidorhiza* Flora Survey

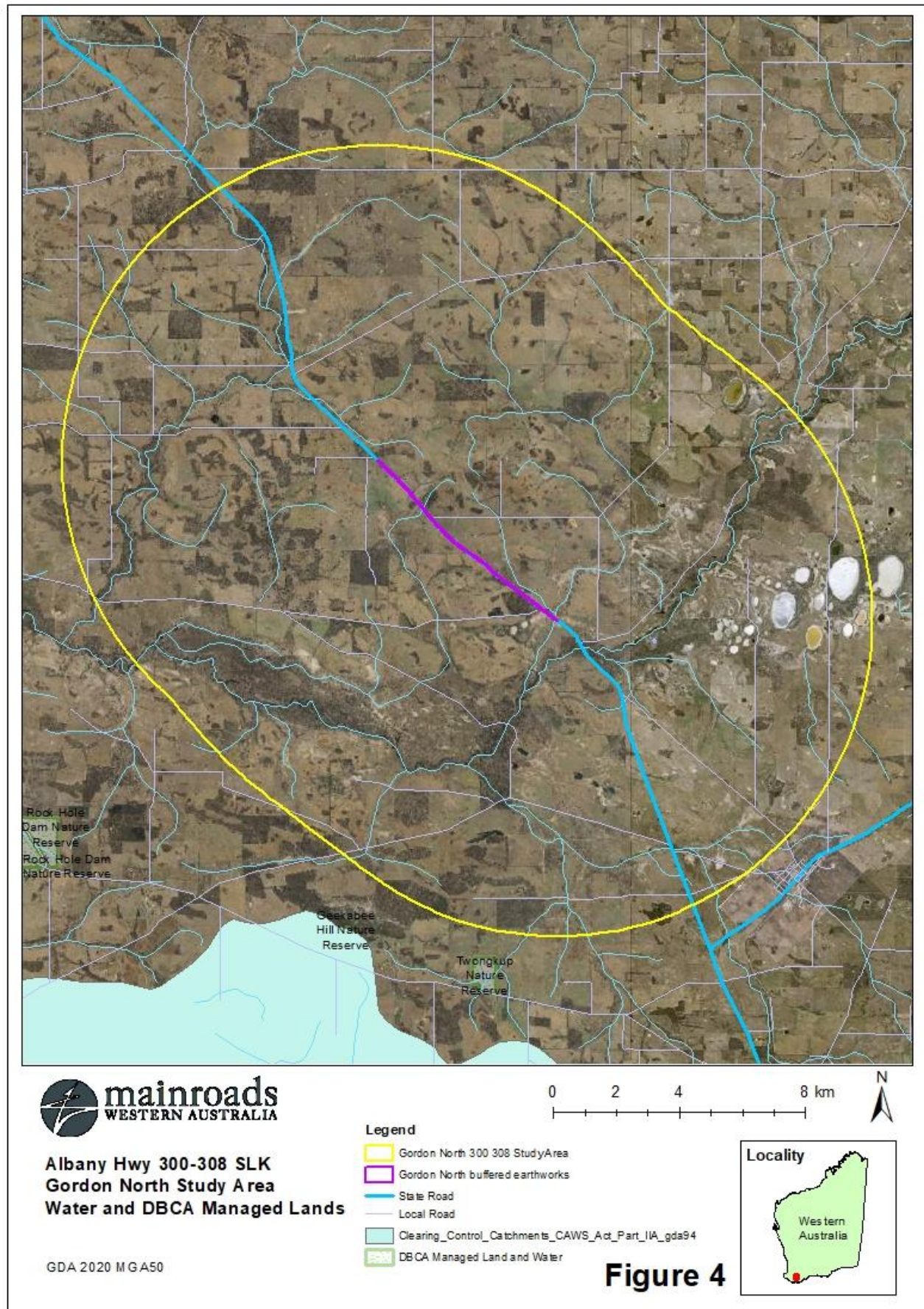
Western Australian Herbarium. 1998- *FloraBase* - The Western Australian Flora. Department of Biodiversity, Conservation and Attractions. Available online from: <https://florabase.dpaw.wa.gov.au/>

10 APPENDICES

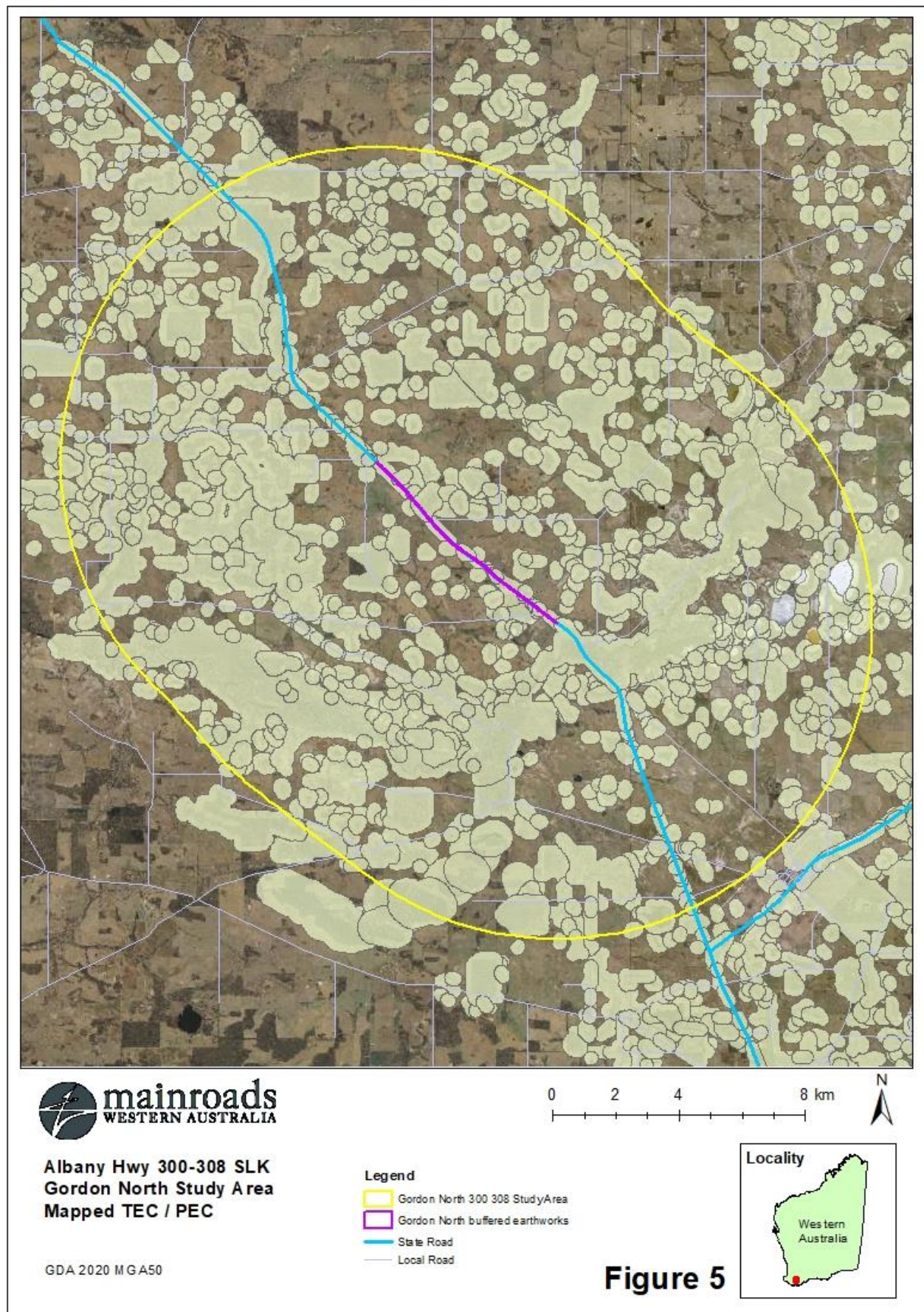
Appendix	Title	
Appendix A	Constraints Mapping	
Appendix B	DAWE Protected Matters Search Tool	D22#149739
Appendix C	Geotechnical Test Pit Location Photographs	

Appendix A: Constraints Mapping

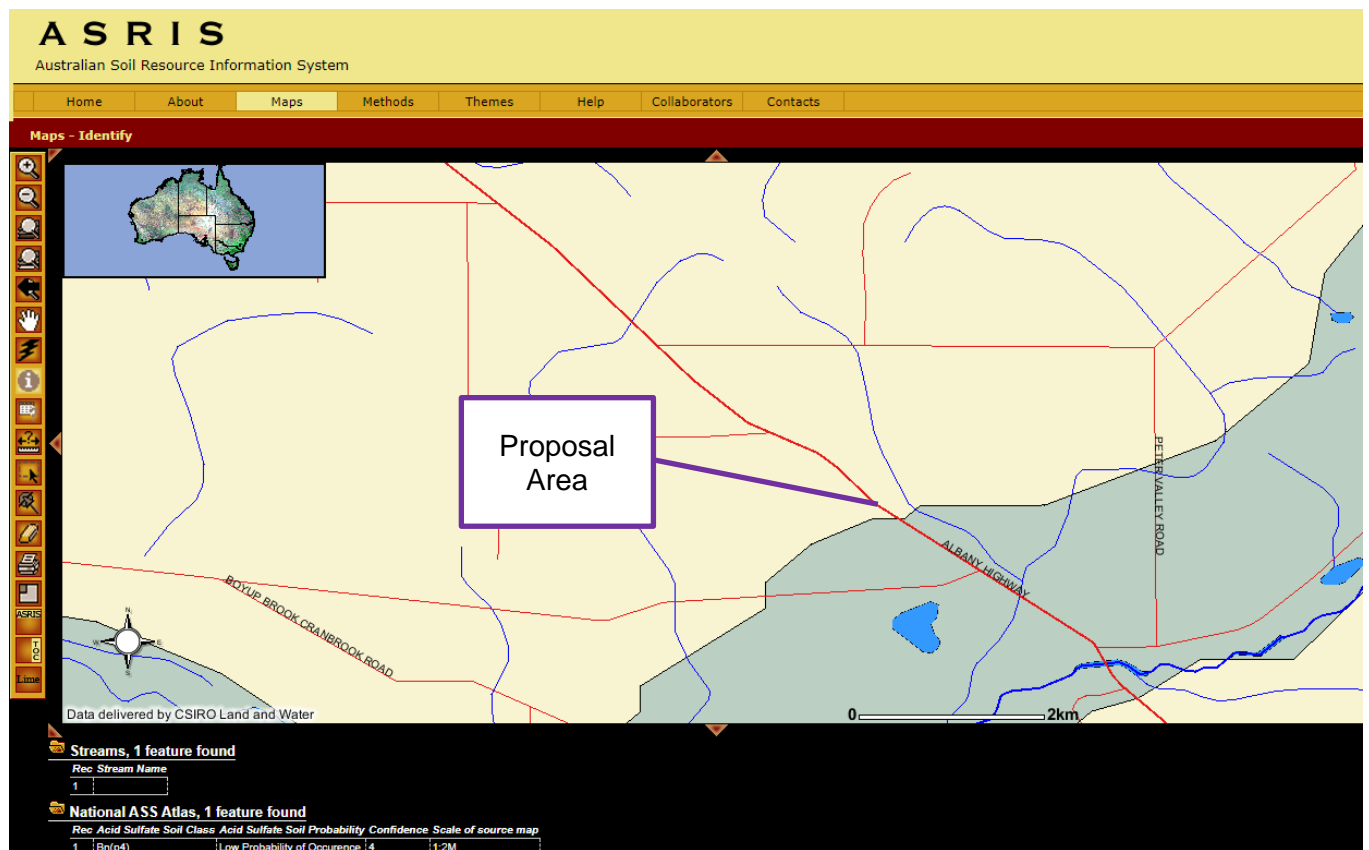
Study Area – Conservation Significant Flora and Fauna



Study Area – Water and Groundwater Source Areas, CAWS Catchments, DBCA lands



Study Area – TECs (Wheatbelt Woodland TEC and Kwongan Shrublands TEC predicted occurrence)

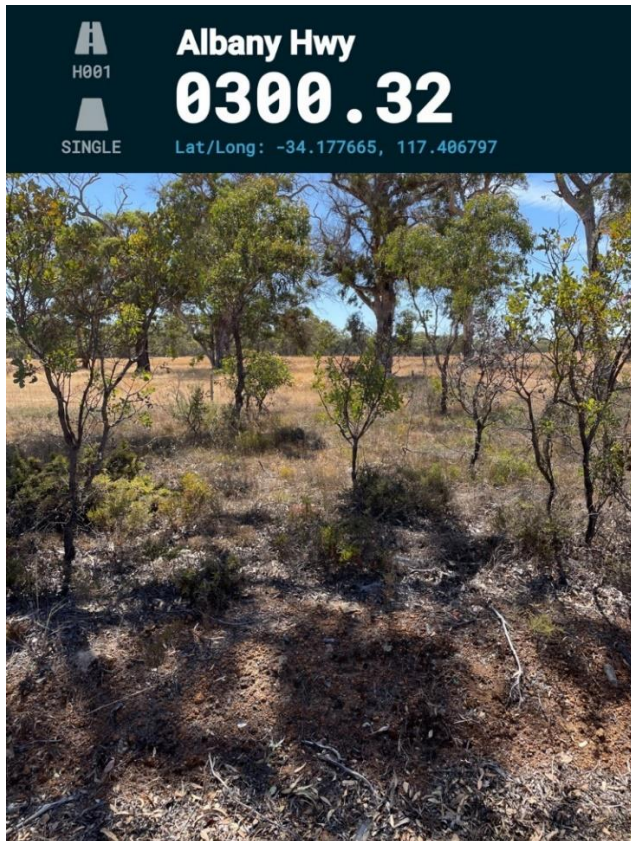


Extremely Low Probability of Occurrence (green)

Low Probability of Occurrence (yellow)

Acid Sulphate Soil Risk Mapping (CSIRO)

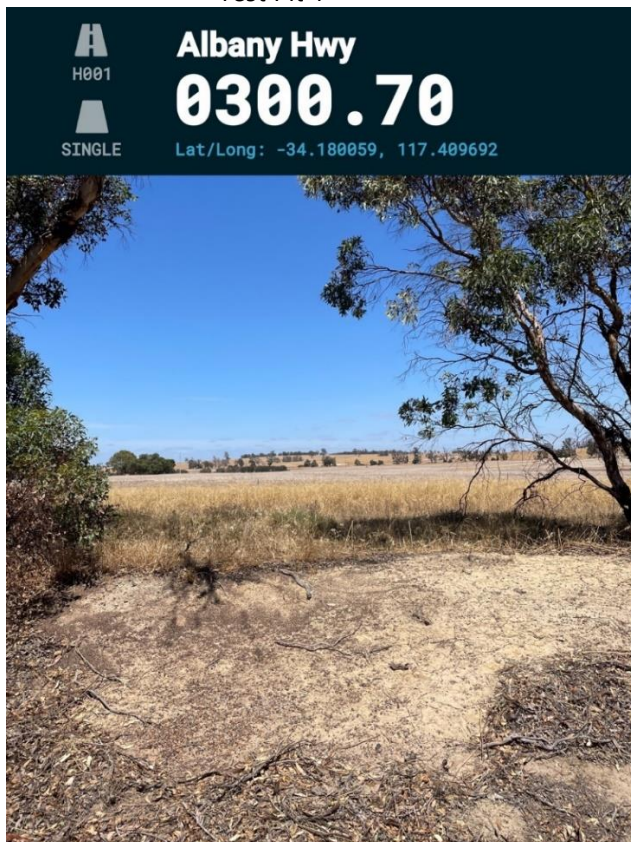
Appendix C: Geotechnical Pit Locations (February 2022)



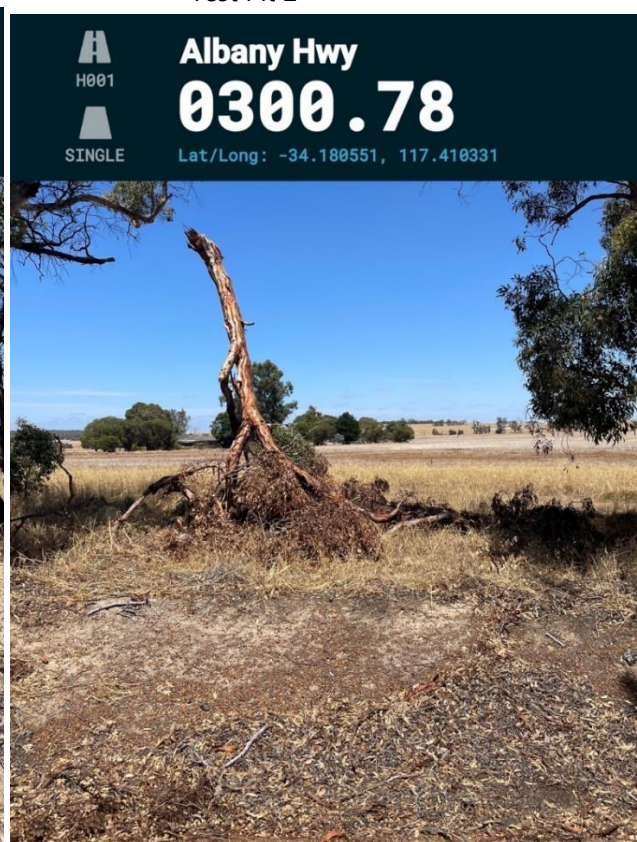
Test Pit 1



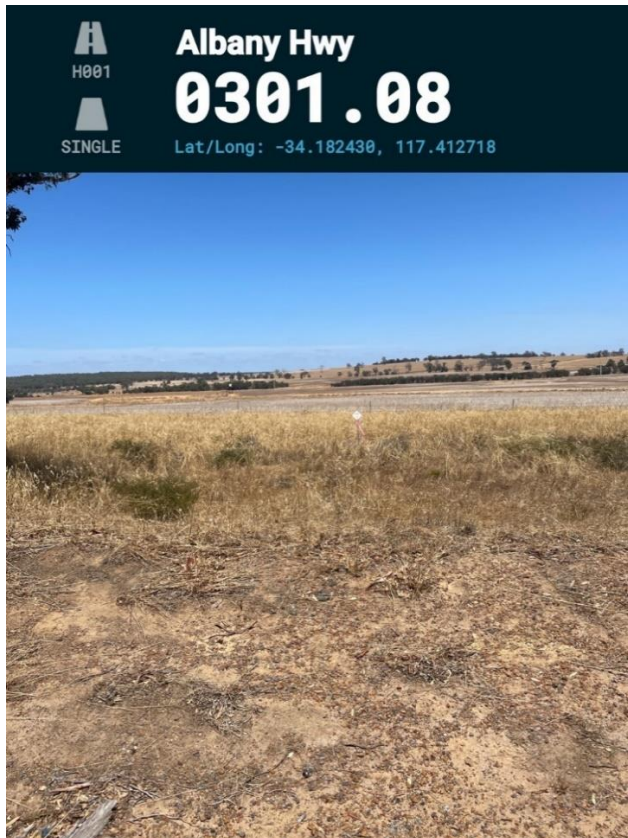
Test Pit 2



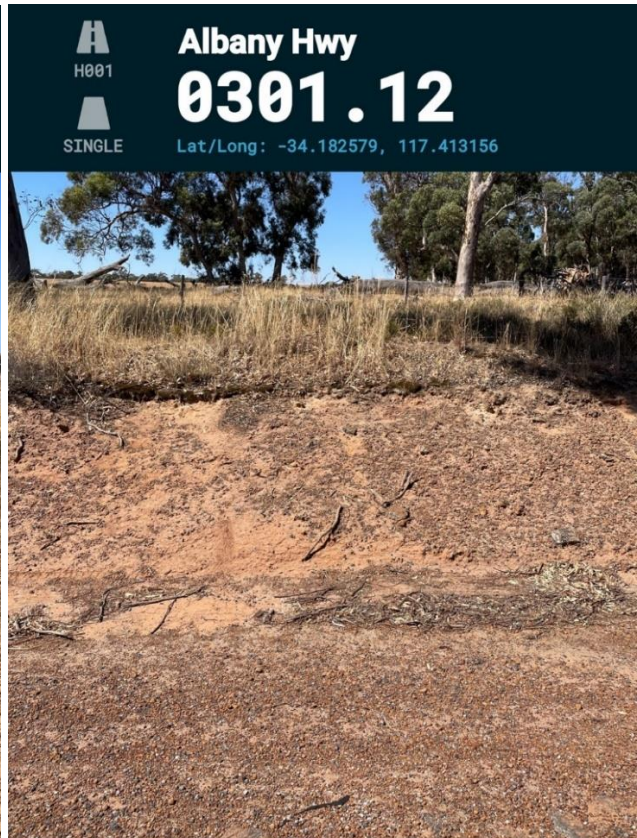
Test Pit 3



Test Pit 4



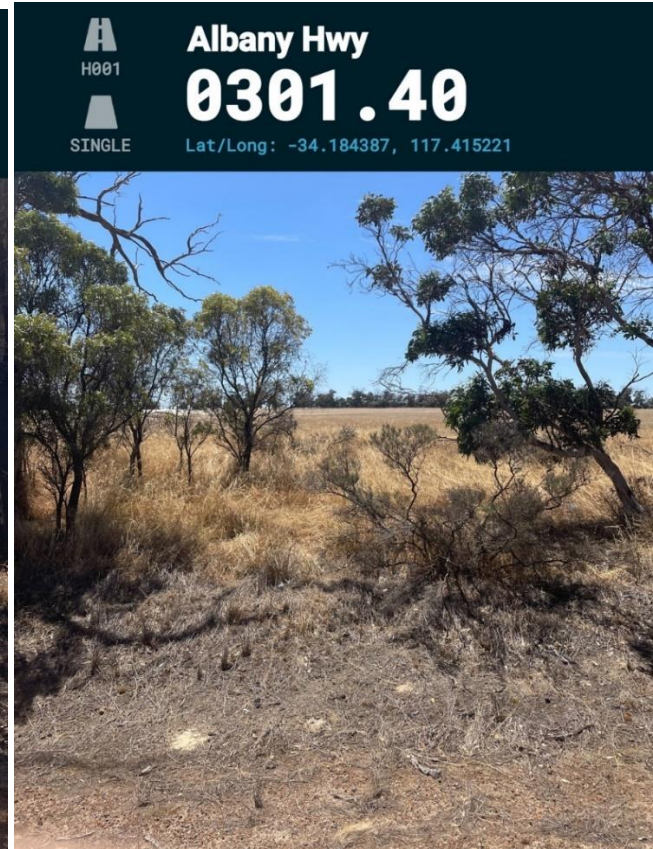
Test Pit 5



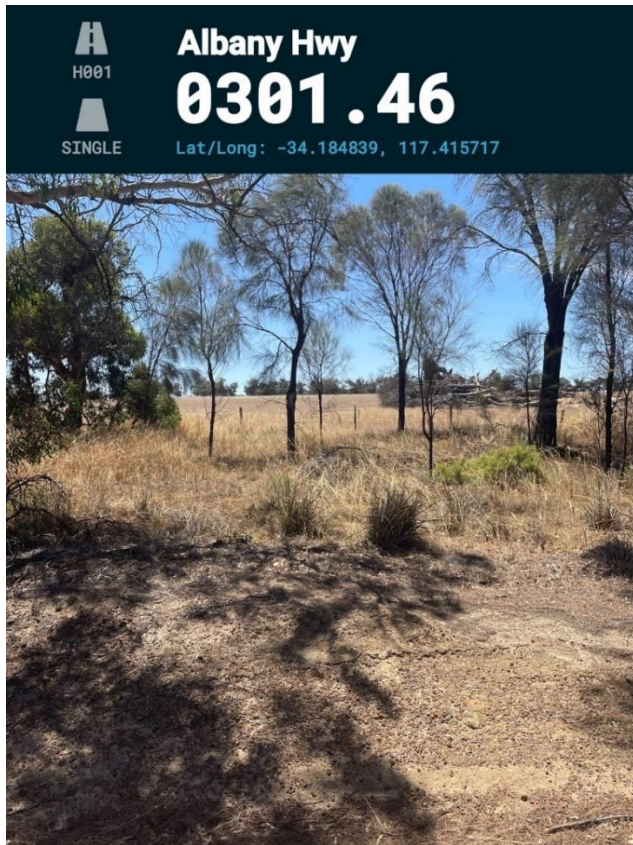
Test Pit 5a



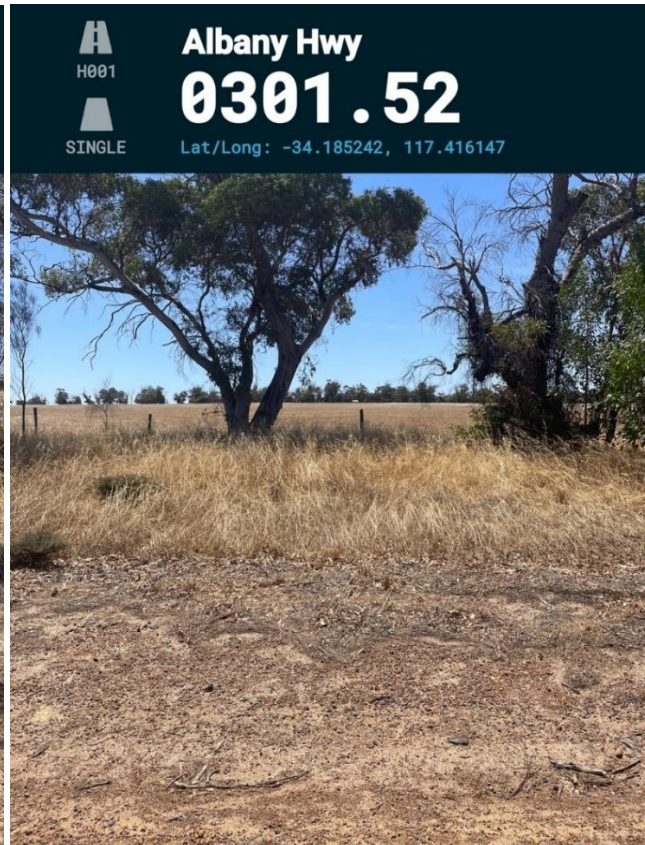
Test Pit 6



Test Pit 7



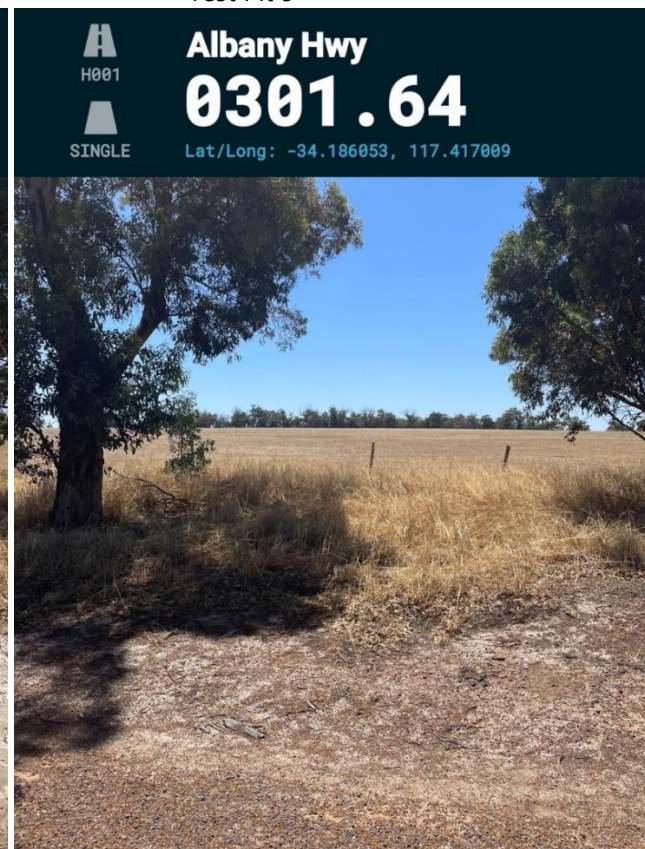
Test Pit 8



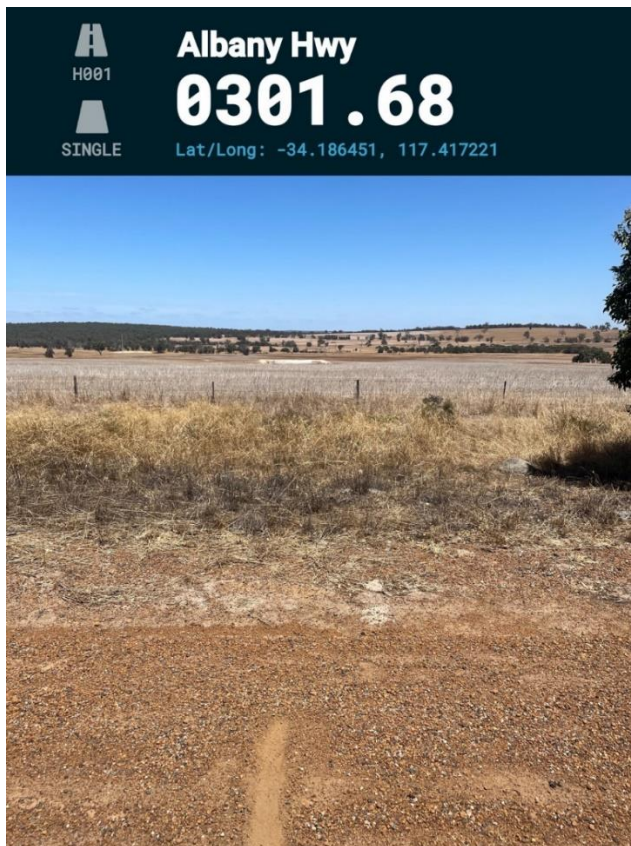
Test Pit 9



Test Pit 10



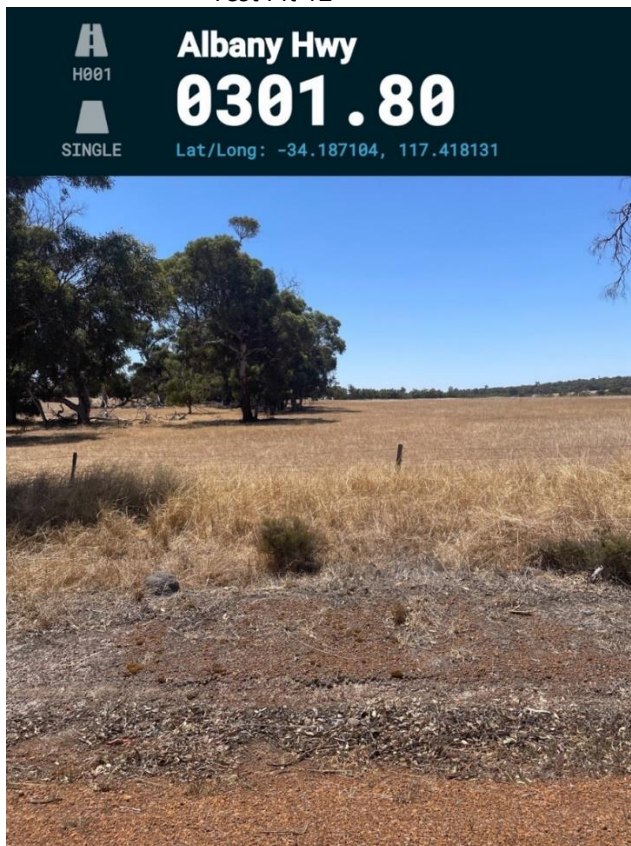
Test Pit 11



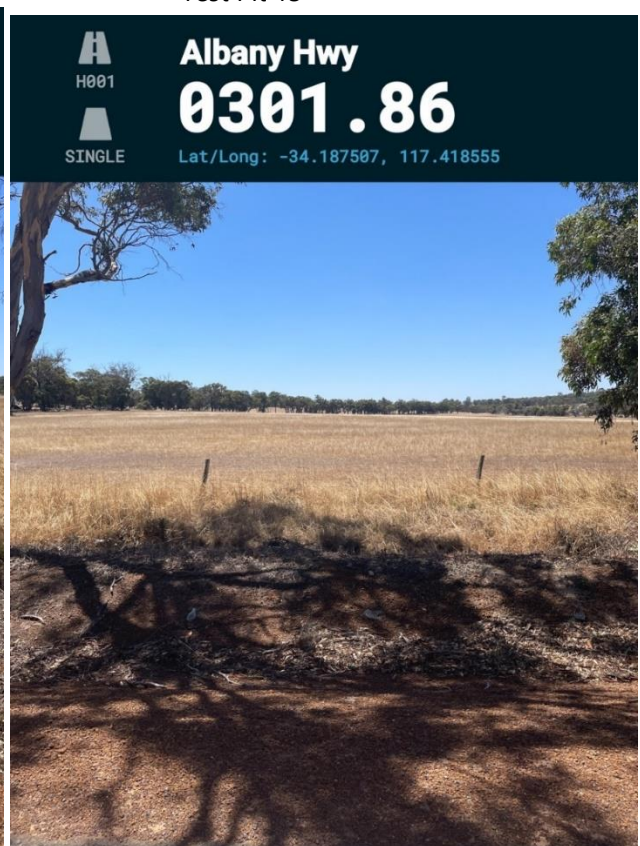
Test Pit 12



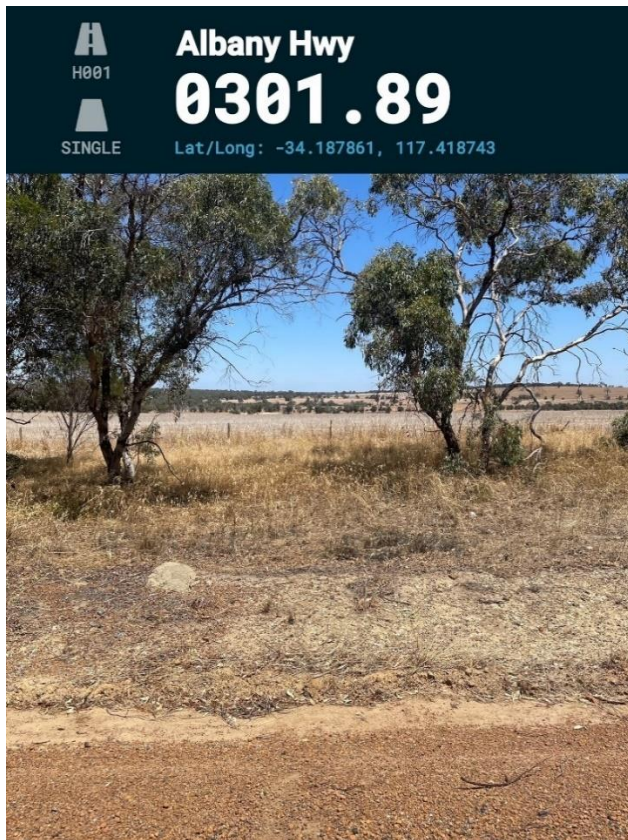
Test Pit 13



Test Pit 14



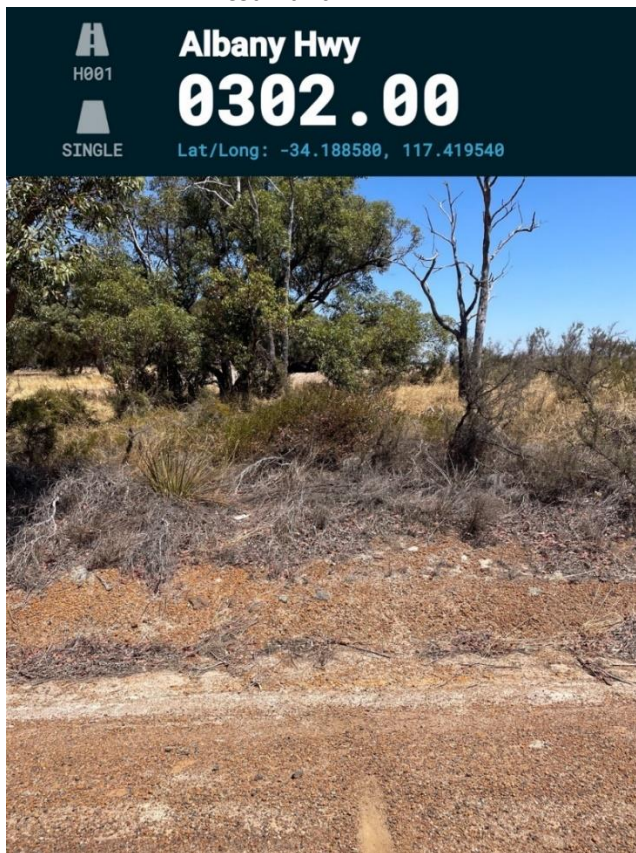
Test Pit 15



Test Pit 16



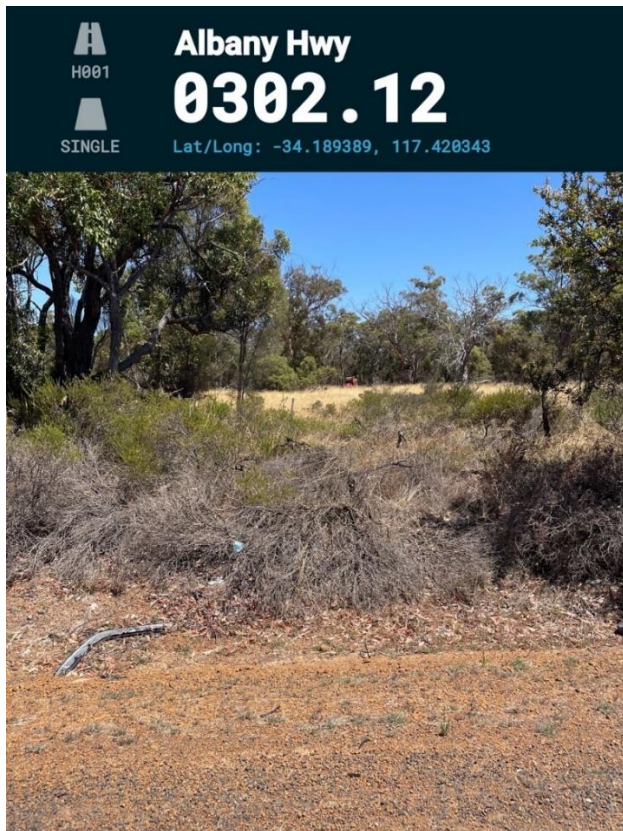
Test Pit 17



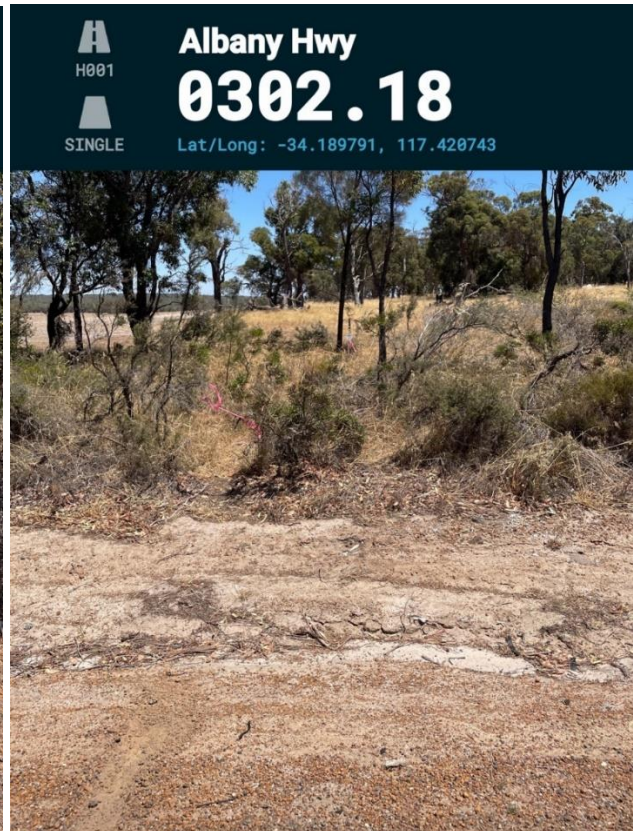
Test Pit 18



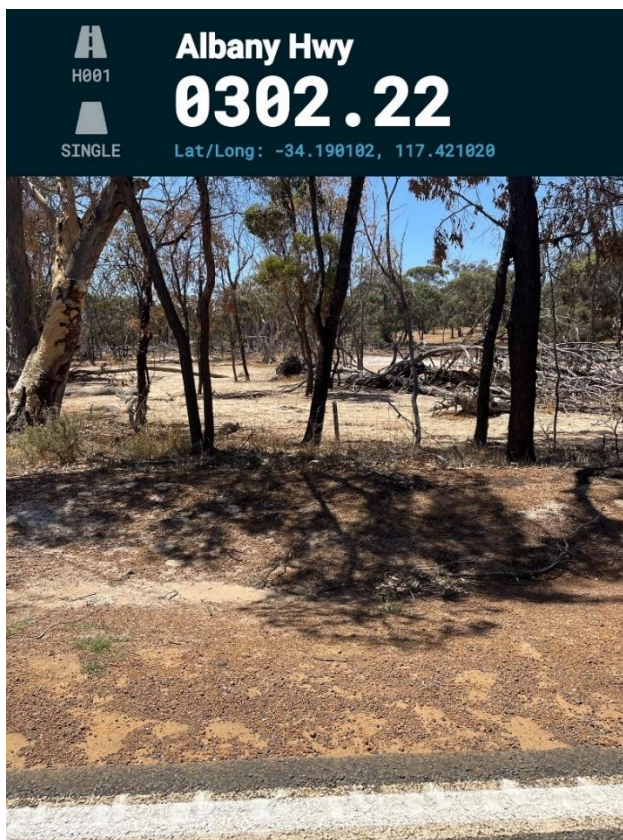
Test Pit 19



Test Pit 20



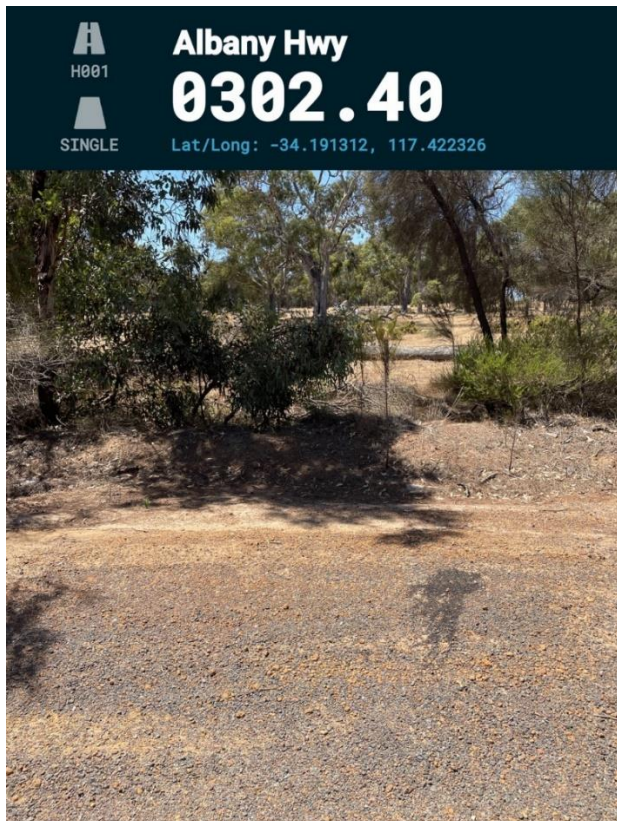
Test Pit 21



Test Pit 22



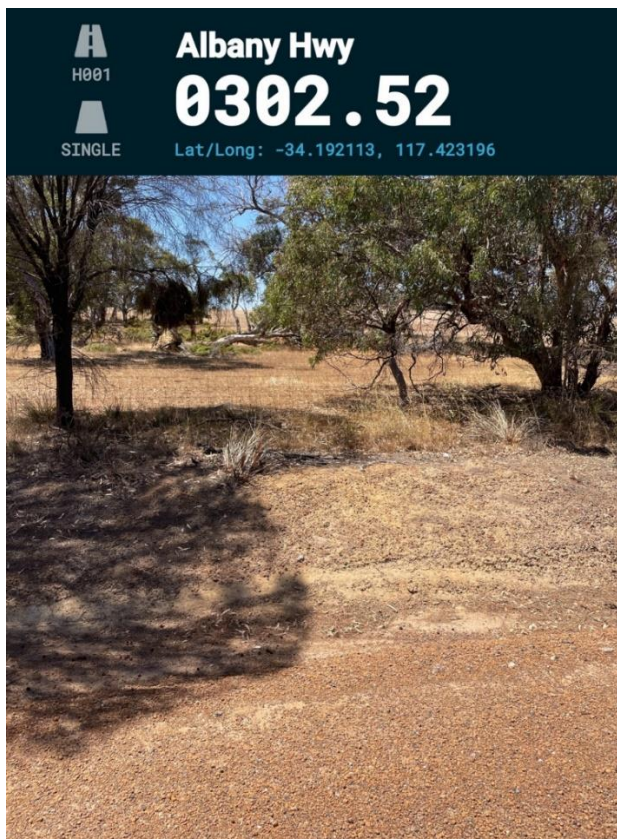
Test Pit 24



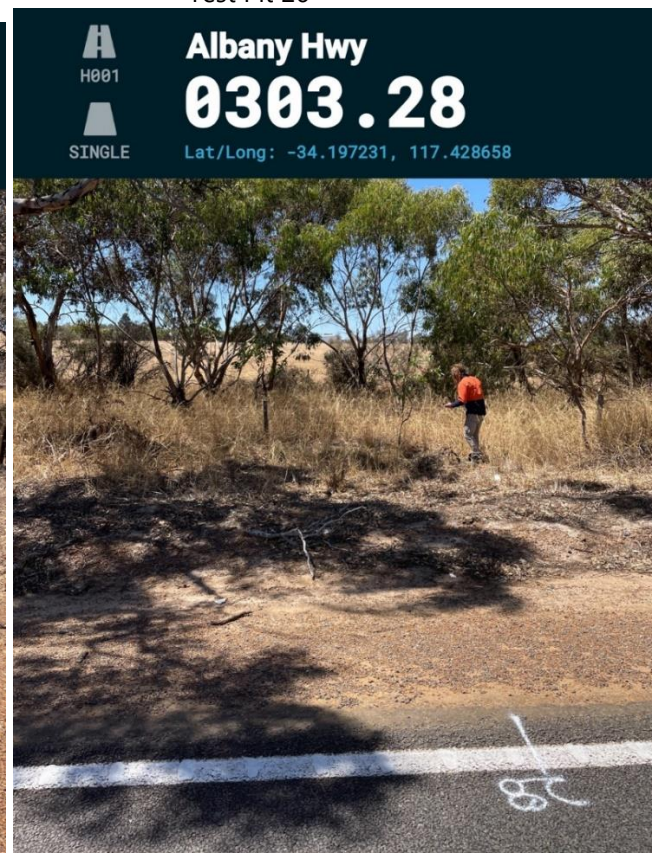
Test Pit 25



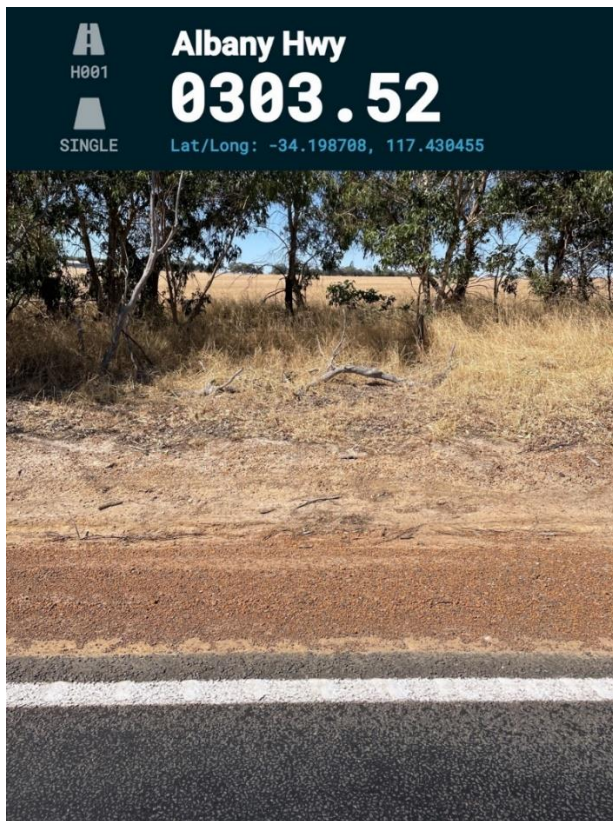
Test Pit 26



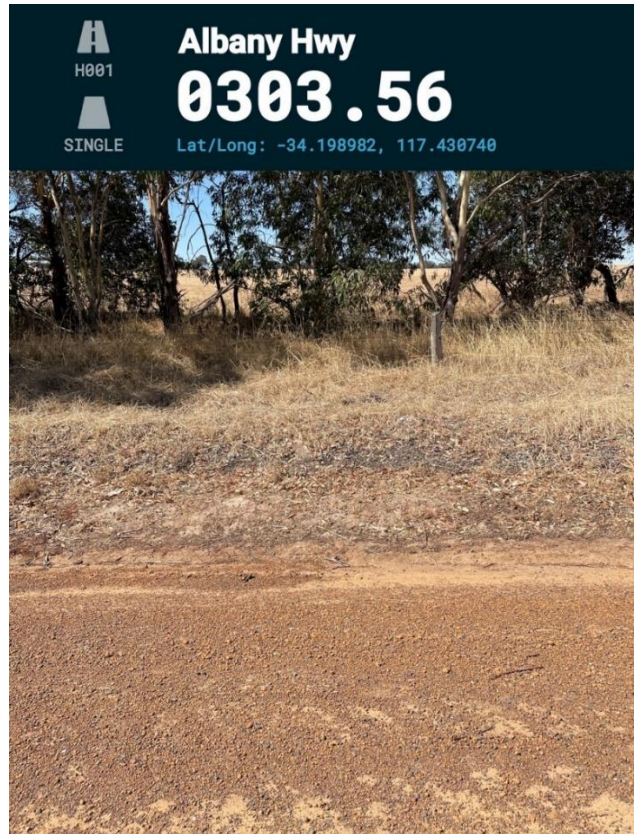
Test Pit 27



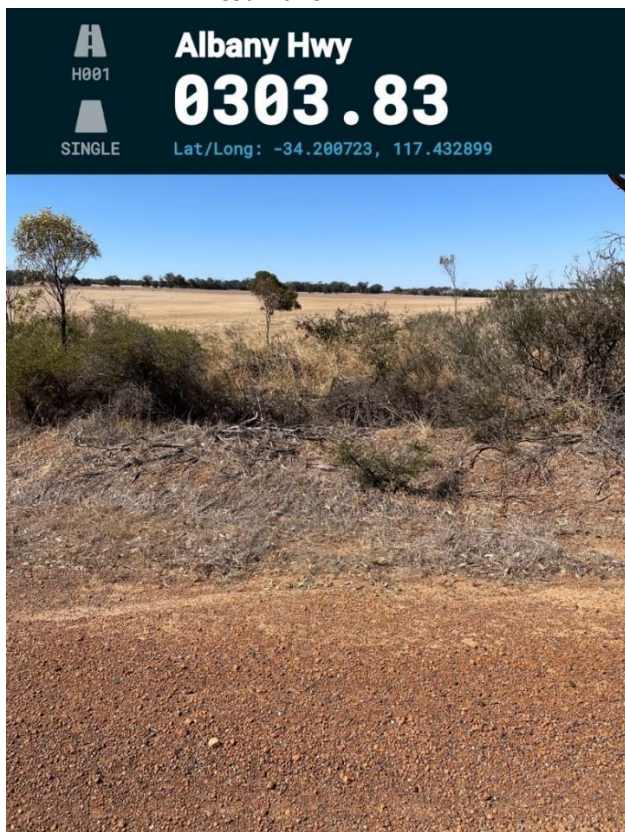
Test Pit 28



Test Pit 29



Test Pit 29a



Test Pit 30



Test Pit 31



Test Pit 32



Test Pit 33



Test Pit 34



Test Pit 35



Test Pit 36



Test Pit 37



Test Pit 38



Test Pit 39



Test Pit 40



Test Pit 41



Test Pit 42



Test Pit 43



Test Pit 44



Test Pit 45



Test Pit 46



Test Pit 47



Test Pit 48



Test Pit 49



Test Pit 50



Test Pit 51



Test Pit 52



Test Pit 53



Test Pit 54



Test Pit 55



Test Pit 56



Test Pit 58



Test Pit 59



Test Pit 60



Test Pit 61



Test Pit 62



Test Pit 63



Test Pit 64



Test Pit 65



Test Pit 66



Test Pit 67



Test Pit 68



Test Pit 69



Test Pit 70



Test Pit 71



Test Pit 72



Test Pit 73



Test Pit 74



Test Pit 75



Test Pit 76



Test Pit 77



Test Pit 78



Test Pit 79



Test Pit 80



Test Pit 81



Test Pit 82



Test Pit 83



Test Pit 84



Test Pit 85



Test Pit 86



Test Pit 87



Test Pit 88



Test Pit 89



Test Pit 90



Test Pit 91



Test Pit 92



Test Pit 93



Test Pit 94



Test Pit 95



Test Pit 96



Test Pit 97