

**Lot 1857 (No. 653)  
Monjebup Road,  
Monjebup**

**Environmental Assessment Report and Operations  
Plan**



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Bio Diverse Solutions

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Author (s): Bianca Theyer, Katie White & Kath Kinnear

Reviewer (s): Kath Kinnear, Charlize van der Mescht,

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Client: Peter Ruland & Peter Hassell – D V Faming Co

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Bio Diverse Solutions Australia Pty Ltd

Albany Office  
29 Hercules Crescent  
Albany WA 6330  
08 9842 1575

Denmark Office  
Unit 7, 40 South Coast Highway  
Denmark WA 6333  
98481309

Esperance Office  
Unit 2A, 113 Dempster Street  
Esperance WA 6450  
90721382

[www.biodiversesolutions.com.au](http://www.biodiversesolutions.com.au)

ABN 46 643 954 929

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## 1 Introduction, scope and background information

Bio Diverse Solutions (Environmental Consultants) was commissioned by Peter Ruland and Peter Hassell of D V Faming Co (“The Client”) as environmental consultants to prepare an Environmental Assessment, Flora and Fauna, and Revegetation Report for the proposed extraction project at Lot 1857 (No. 653) Monjebup Road, Monjebup within the Shire of Gnowangerup. This report specifically covers the Environmental Impact Assessment Report and Operations Plan. The purpose of this document is to assess the environmental values for the site, develop management strategies to minimise and avoid impact, and assess the proposed extraction pit to provide supporting documentation for a Development Application with the Shire of Gnowangerup. The document provides and outlines details of emissions (noise and air, as gas, dust or odours) associated with the project and associated mitigation measures.

### 1.1 Alignment to Legislation, Policy and Guidelines

In assessing the proposed extraction facility, Bio Diverse Solutions has prepared this report aligned to the following legislation:

- *Biosecurity and Agriculture Management Act 2007 (BAM Act)*;
- *Environmental Protection Act 1986 (EP Act)*;
- *Environmental Protection Regulations (1987)*
- *Environmental and Protection and Biodiversity Conservation Act 1999 (EPBC Act)*;
- *Biodiversity and Conservation Act 2016*;
- *Conservation and Land Management Act 1980 (CALM Act)*;
- Environmental Protection Authority (EPA) *Separation Distances between Industrial and Sensitive Land Uses – Guidance Statement No. 3* (current and endorsed guideline; 2005);
- Due regard to the EPA *Draft Separation Distances between Industrial and Sensitive Land Uses (2015)*;
- Department of Biodiversity, Conservation and Attractions (DBCAs) *Environmental Weeds Strategy for Western Australia* (1999);
- Department of Protection *Environmental Code of Practice – Extractive Industries (1990)*; and
- *Water Quality Protection Note No.15 Basic raw materials extraction* (DWER, 2019a).

The preparation of this plan is to guide extraction activities completed by D V Faming Co (proponents Peter Ruland and Peter Hassell) on Lot 1857 (No. 653) Monjebup Road, as per the above legislation and guidelines. Licensing of extraction is the delegated authority of the Local Government Authority. Any operations which are subject to regulation under the *EP Act* are delegated to the Department of Water Regulation (DWER) and compliance to administered licensing under the *Environmental Protection Regulations (1987)*. Interpretation of the regulations is defined through guidelines. The current and endorsed guideline pertaining to sensitive land uses and setback requirements is the Environmental Protection Authority’s (EPA) *Separation Distances between Industrial and Sensitive Land Uses – Guidance Statement No. 3* (EPA, 2005).

The activity of crushing and screening is only examined in this document as a component of the noise management plan. Buffers, setbacks and licensing conditions are to be dealt with by DWER as part of a works approval application by the proponent.

## 2 Background

### 2.1 Site Details

The “property” is defined as Lot 1857 (No. 653) Monjebup Road, Monjebup and is located approximately 16km northwest of the Boxwood Hill town centre along Monjebup Road in the municipality of the Shire of Gnowangerup. The property is 1108 hectares in total and is zoned as “General Agriculture” under the Shire of Gnowangerup Local Planning Scheme No. 2 (DPLH, 1990). The “extraction area” is defined as the 4.76ha area in which extraction will occur with 5 stages, as defined by the area identified in Figure 1. The 4.76ha area is part of a larger area of remnant vegetation (approximately 29ha) of which the remainder will remain untouched. There are 5 pits within each stage, with 1 ha staged planned approach. The “crushing and screening extents” are defined as the area in which crushing and screening operations will occur. Please refer to Figure 1 below and Map 1 Appendix A - Site Facility Mapping.

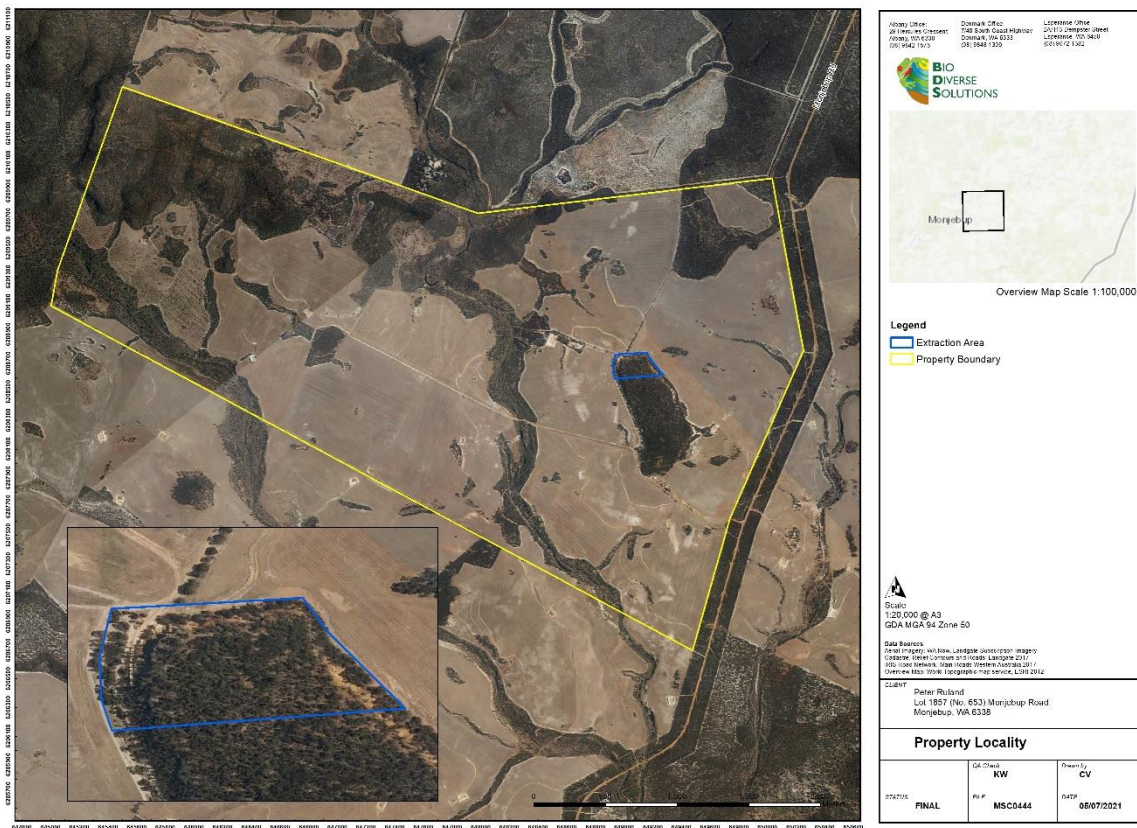


Figure 1: Property Locality

### 2.2 Existing Land Uses

Currently the private property is being utilised for general agriculture, primarily broad acre cropping. A single residential dwelling is present on-site but is currently only occupied seasonally for seeding and harvest operations. The adjacent surrounding properties are also zoned as “General Agriculture”. The area identified for extraction is currently covered by native vegetation and was previously covered under a ‘Conservation Covenant’ under the *Soil and Land Conservation Act 1945*, with an ‘Agreement To Reserve’ (ATR; McConnell, 2021; Section 6.7). Attachment E provides an approved request from the Commissioner of Soil and Land Conservation to amend ATR for approximately 5 ha area specified for the purpose of extracting raw materials. After extraction activities are complete (anticipated within 10-20 years), the area identified for extraction will be rehabilitated, following DWER requirements under clearing permit application CPS 9260-1 (BDS, 2021a). Native vegetation will be returned to its current condition and status, and the specific area present will not be considered a change in land use, for example, changing to cropping pastoral land use. There are numerous areas of native vegetation fenced off within the private property, with other areas covered under the ATR.

### **2.3 Adjacent Land uses and Tenure**

The subject site is located within an agricultural area, with agricultural properties to the north, east and south. The vast majority of these properties are used for broad acre cropping or for pastoral purposes. The Monjebup Reserve is located directly to the west, adjacent to the property. There are two other nature reserves within a 5 km radius of the property, including Corackerup Nature Reserve and Greaves Road Nature Reserve. Additionally, Bush Heritage Australia manage a private property to the southeast of the property, as part of the Gondwana Link program. The property is located within the Shire of Gnowangerup local government area. However, it is directly on the LGA boundary, with south of Monjebup Rd properties within the Shire of Jerramungup.

### 3 Desktop Assessment

A desktop assessment of government databases was undertaken to ascertain environmental aspects both within the property and the surrounding area. This assessment was conducted to various levels, ranging from state-wide to area specific information and includes information on climate, geology and soils, environmentally sensitive areas, acid sulfate soils, public drinking water areas, water bodies and Aboriginal heritage. Desktop inventory of potential Threatened and Priority flora and fauna species likely to occur within 10km of the property was undertaken using the following databases:

- 10km NatureMap Database Search (combined data from DBCA, WA Museum and WA Herbarium; DBCA, 2007 -);
- Protected Matters Search Tool (DAWE, 2021); and
- WA Herbarium records accessed through Flora Base (Western Australian Herbarium, DBCA; WAH, 1998 -).

Based on results from the above databases there are 60 conservation significant flora species and 31 conservation significant fauna species potentially present within the 10km of the property. The full species list compiled from all available data is based on observations from a 10km study area and is likely to include species that would not occur in the property due to a lack of suitable habitat, and can be found in the Reconnaissance Flora, Vegetation and Basic Fauna Survey (BDS, 2021b).

The conservation significance of flora and fauna species has been assessed using data from the following sources:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Administered by the Australian Government Department of Agriculture, Water and Environment (DAWE);
- *Biodiversity Conservation Act 2016* (BC Act). Administered by the Western Australian Department of Biodiversity Conservation and Attractions (DBCA); and
- DBCA Priority Flora list. A non-legislative list maintained by DBCA for management purposes (DBCA, 2021a).

#### 3.1 Climate

The nearest Bureau of Meteorology (BoM) operational station is Ongerup (Site No. 010622). The average maximum temperature is 22.0°C whilst the average minimum temperature is 9.7°C. The average annual rainfall for the station is 387.5mm, with the majority of rainfall occurring between May and September (BoM, 2021).

#### 3.2 Topography

The property is located in an undulating landscape in the Monjebup area. The property has eastern, western and southern aspects with slopes from the western boundary ranging from 115m AHD to 190m AHD. The northern boundary of the property slopes from 155m AHD to 115m AHD. The eastern side of the property is flatter with slopes ranging from 115m AHD to 125m AHD.

#### 3.3 Geology and Soils

Database searches show the property lies within the Middle Pallinup System (243Mp) and the Jerramungup Zone. The Middle Pallinup System is described as “*Gently undulating rises, in the Jerramungup Sandplain Zone, with alkaline grey shallow duplex (sandy and loamy), grey sandy duplex (shallow and deep) and red shallow loamy duplex. Mallee scrub and yate woodland.*” (DPIRD, 2021). The Jerramungup Zone is described as having “*Level to gently undulating plain dissected by a number of short rivers flowing south. On Eocene marine sediments overlying Proterozoic granitic and metamorphic rocks. Soils are alkaline sandy duplex soils with some clays, sands and gravels.*” (DPIRD, 2018a).

#### 3.4 Water

The property lies within the Beaufort Inlet Pallinup River Catchment area and the Jerramungup Plain Hydrological Zone (HZ23\_JS) which is described as “*Level to gently undulating plain dissected by a number of short rivers flowing south. On Eocene marine sediments overlying Proterozoic granitic and metamorphic rocks. Soils are alkaline sandy duplex soils with some clays, sands and gravels.*” (DPIRD, 2018b). The Monjebup Creek is a significant stream that runs through the property, to the west of the survey area (DWER, 2018a). It does not intersect the “extraction area”. No other wetland areas were identified as being present within the extraction area during the desktop assessment.

The property is not located in a Public Drinking Water Source Area (DWER, 2020a).



The property is located within the Albany Coast Surface Water Management Area (DWER, 2018b), the Pallinup River Water Surface Subarea (DWER, 2018c), and the Albany Coast WRIMS Surface Water Area (DWER, 2021). The property is not located in a Public Drinking Water Source Area (DWER, 2018c).

### 3.5 Acid Sulfate Soils

There are no areas within the property mapped as containing Acid Sulfate Soils.

### 3.6 Remnant Vegetation

The property lies within the Fitzgerald ESP01 IBRA subregion. Comer *et al* (2001) describes the IBRA region as “*myrtaceous and proteaceous scrub and mallee heaths on sandplain overlying Eocene sediments; rich in endemics. Herbfields and heaths (rich in endemics) on abrupt granite tors and quartzite ranges that rise from the plain. Eucalypt woodlands occur in gullies and alluvial foot-slopes.*”

The vegetation has been mapped on a broad scale by J.S. Beard (Shepherd *et al.* 2002) in the 1970s, where a system was devised for state-wide mapping and vegetation classification based on geographic, geological, soil, climate structure, life-form and vegetation characteristics (Sandiford and Barrett, 2010). Vegetation units were regarded as associations and were grouped into Vegetation Systems representing a particular pattern of association distribution within a given area. A GIS search of J.S. Beard’s (Beard *et al.* 2013) vegetation classification places the subject site within one System and Vegetation Association (DPIRD, 2019):

- **System Association Name:** Jerramungup
- **Vegetation Association Number:** 516.
- **Structure Description:** Mallee
- **Floristic Description:** Eucalypt shrubland *Eucalyptus eremophila*, *E. redunca*, *E. spp.*
- **Remnant Vegetation by Beard Association Rarity in LGA:** 11.01% remaining (GoWA, 2019).
- **Remnant Vegetation by Beard Association Rarity in IBRA Region:** 68.96% (GoWA, 2019).

### 3.7 Aboriginal Heritage

The subject site is located on Magyl Kaip and Southern Noongar land, of the Noongar nation (SWALSC, 2021). Database records show the property does not lie within any aboriginal heritage sites (DPLH, 2021). However, it should be noted due to the widespread loss of cultural knowledge, it is possible that the site holds Aboriginal and Cultural values that are not listed through database searches.

## 4 Site Assessment

Site assessment of the property and extraction area was undertaken on 7<sup>th</sup> July 2021 by Katie White and Bianca Theyer (Bio Diverse Solutions). This assessment included ground truthing of desktop findings, including bushfire risks to 150m. A reconnaissance flora and vegetation survey and basic fauna assessment was undertaken (BDS, 2021b), as the large areas of intact remnant vegetation within the subject site will be cleared during this extraction project. Vegetation assessment and comments on condition of remnant vegetation within the subject site are provided below. Refer to Appendix B for vegetation mapping applicable to the site.

The subject site (4.76ha) is part of a larger remnant patch of vegetation of approximately 29ha. The specific vegetation types and below mapping applies only to the subject site, with the wider area not assessed as part of this survey.

### 4.1 Vegetation Types

#### 1. Vegetation Type A: Mallee Forest on slope at base of Breakaway

This vegetation type occurs around the perimeter of the geological feature of the breakaway, forming the base and slopes of the area. It is characterised by seasonally wet, dark brown clay-sand with an underlying lateritic/spongelite geology. The vegetation community can be described as *Eucalyptus platypus* and *Eucalyptus sporadica* Open Mallee Forest, over *Cyathostemon ambiguus*, *Melaleuca bracteosa* and *Melaleuca torquata* shrubland, over *Hibbertia pulchra* and *Grevillea huegellii* sparse heathland. The vegetation condition ranges from Very Good to Excellent (refer to Keighery, 1994). Please refer to Figure 2 for photographs of vegetation type and Table 1 for condition ratings. It is proposed that vegetation will be cleared as part of the extraction project. Refer to Section 6.7 for further information.



Figure 2: Photographs of the Vegetation Type A, Mallee Forest on slope at base of Breakaway.

#### 2. Vegetation type B: Mixed Paperbark, Melaleuca, Callitris and Mallee Woodland on top of plateau of Breakaway

This vegetation type occurs on the top of the plateau of the geological feature of the breakaway. It is characterised by orange/brown, seasonally wet clay sand. The vegetation community can be described as *Eucalyptus phenax* subsp. *phenax*, *Eucalyptus sporadica*, *Eucalyptus redunca* Mallee Woodland, over *Melaleuca carrii*, *Callitris preissii* and *Kunzea newbeyi* (P1) shrubland, over *Lepidosperma squamatum*, *Lepidosperma pubisquamatum* open sedgeland, over *Drosera glanduligera*, *Drosera macrantha* and Orchid open forbland. The vegetation condition over the entire Vegetation Type B is classified as Pristine (Keighery 1994). Please refer to Figure 3 for photographs of vegetation type and Table 1 for condition ratings. It is proposed that vegetation will be cleared as part of the extraction project. Refer to Section 6.7 for further information.



Figure 3: Photograph of Vegetation Type B, Mixed woodlands at top of plateau of breakaway.

Table 1: Condition Rating Scale (adapted from Keighery 1994).

Vegetation Condition Rating	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.
Very good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees and shrubs.

## 5 Proposed Development

### 5.1 Extraction process, staging and haulage routes

The location and extent of the proposed gravel extraction area is shown in Map 1 Appendix A 'Location and Site Facility Mapping' covering an area of 4.76 hectares in remnant vegetation. It is assumed that the average amount of 10,000 – 12,500 tonnes per year will be extracted over the life of the extraction project (*Pers. Comm. P. Ruland 2021*). Ultimately the volume of extracted materials will be reliant upon industry demand. It is proposed that the entire life of the project will be approximately 10-20 years. Extraction is planned to commence as soon as possible after all required approvals are obtained. The extraction facility is located on private property, with controlled and restricted access to the property. Refer to Management Plans in Section 7.

The extraction of gravel including crushing and screening will take place on site by appointed contractors Bremer Bay Lime and excavation will occur at a maximum depth of existing ground level at the base of the breakaway. The rock material on the surface is the anticipated resource. Excavations' maximum depths are capped to retain some geological/soil type for successful revegetation, as the presence of Vegetation B is ecologically linked to the geology. Extracted products will then be transported to suppliers as required. Mobile plant is utilised to push up and stockpile topsoil and mulch vegetation as well as to extract, push up and stockpile extracted material. Unprocessed raw material is fed into the crushing and screening plant, and then stockpiled prior to being loaded onto trucks. No blasting will be required, whilst portable crushing and screening equipment will be utilised, the crushing of large gravel "boulders" will only occur when required and it is therefore expected that most of the extracted resource will not require crushing.

It is proposed that extraction will be staged, with the stages depicted on the Site Plan Mapping, Map 1 Appendix A. Within these proposed stages, the rock material (no greater than 1ha in size ) will be exposed/operated at any given time. This area will then be rehabilitated (BDS, 2021a) prior to the next stage of extraction can commence. Extracted material will be stockpiled within the stage / pit area adjacent to the next pit, for use as demand requires. It is estimated that the maximum amount of time gravel will be stockpiled is 6-12months. Stockpiles of extracted material will be no higher than 3 metres.

Trucks will access the property via the existing access way through the property, off Monjebup Road (the property is on the boundary of the Shire of Jerramungup and Shire of Gnowangerup managed roads. Monjebup Road is managed by the Shire of Jerramungup. From here, vehicles can follow a route towards the Shire of Gnowangerup managed Border-Bremer Bay Road.

### 5.2 Vegetation, Topsoil Removal and Extraction depths

This proposal requires clearing of native vegetation, as the subject site consists of 4.76 ha of remnant vegetation, which is part of a larger remnant patch of native vegetation of ~29ha. The extraction area does not extend into the nearby paddocks, as the targeted basic raw material is directly linked to the geological feature of the breakaway outcrop where the native vegetation is present. Topsoil will be removed to a depth of 150 – 200mm. All topsoil removed will be stockpiled in windrows 5-8m wide and stored parallel to the borders of the extraction area. Topsoil and mulch ('the overburden') will be stockpiled in piles no higher than 3m, which will then be respread over the pit area once excavation activities have ceased, to ensure the soil seed bank and seed stored in the brushing vegetative material is used for rehabilitation (BDS, 2021a).

### 5.3 Operation Times

Extraction and plant operation times will be restricted to the hours between 7:00am and 5:00pm Monday to Friday and 8:30am to 1:00pm on Saturday (in times of high demand / peak periods), not including Public Holidays. Actual operation times will vary as a result of product demand, if demand is low due to no construction projects being carried out then the facility will not be operational.

### 5.4 Vehicles and Machinery

No hydrocarbons, chemicals, fuels, coolants etc. will be stored onsite. These will be transported onsite as required by a contained mobile service vehicle which will be appropriately equipped with spill kits in the unlikely event there is a spillage. Furthermore, no trucks will be stored on site outside of operation hours, only screening and crushing equipment will be stored

on site. If major servicing of these machines is required, they will be removed from site. In the unlikely event of a major breakdown on site all necessary precautions will be undertaken to ensure no hydrocarbons or other liquids enter the environment, and any contaminated soil will be removed and disposed of at an appropriate location.

## 6 Environmental Considerations

### 6.1 Noise

D V Faming Co. will ensure all extraction, crushing and screening operations are to be carried out only between 7:00am and 5:00pm Monday to Friday and 8:30am to 1:00pm on Saturday (in times of high demand / peak periods), not including Public Holidays. The surrounding properties are also zoned as “General Agriculture” and it is expected that operational noise will not be louder than the surrounding agricultural and forestry operations within the immediate vicinity.

Noise considerations are subject from three key areas:

- Extraction processes (excavation, pushing and moving material on site);
- Crushing and screening; and
- Truck and vehicle movements to and from site.

#### Extraction processes

The extraction processes involve the stripping of topsoil and mounding, ripping and pushing of ripped material for export off site or for crushing (if required). The estimated times for this process for 1 ha (i.e. a stage) is:

- 1 day - Strip/ push up topsoil;
- 1 day - Rip entire area;
- 1-2 days - Push up ripped material for export/crushing; and
- Crushing material depending on size and requirement of resource by client:
  - Low demand: 0 - 3 days.
  - High demand / peak periods: 7 days.

The volume and amount required is purely dependant on demand. Location of extraction and staging is defined in the Staging Plan in Appendix A. The house located within the property is approximately 767m to the south. There is a neighbouring residential property approximately 1428m to the southeast of the extraction area. Refer to Site Buffers Mapping in Appendix A.

To create noise (and visual) buffers, the client will utilise the overburden (topsoil and brushing vegetative material) stockpiles around the perimeters of the extraction stages / pits as they are established. These stockpiles will be between 2 and 4m high to assist in noise and dust attenuation. Traffic routes internal to the site will be planned out in such a way as to minimise vehicle reversing requirements and thus minimise reversing alarm noise (particularly for the nearest residences). Replacing standard “beeping” reversing alarms with a mixed frequency alarm (which does not carry as far) should also be considered to further reduce noise issues.

To assist with general reduction of noise, it is recommended that regular maintenance of onsite plant and machinery occurs, to help to reduce unnecessary noise pollution. Any equipment identified as noisy will either be removed from site or its use terminated until repairs are made. All employees and contractors will be educated through site inductions raising awareness and outlining company practices to be employed to help mitigate noise pollution whilst on site and when entering and exiting the property. It will be the site manager’s responsibility to ensure all personnel adhere to noise reduction measures. A noise complaint system/register should be implemented to ensure any complaints are dealt with appropriately. A notice should be placed at the front gate providing the contact details of the site manager. Any noise related complaints will be recorded by the site manager and acted on immediately and resolved within 24 hours. Any complaints made should be kept in a register. Refer to Section 7.2 for Noise Management to be implemented during all operations.

#### Crushing and screening

Noise from crushing and screening operations will be the largest consideration to the project. Crushing and screening operations will be only undertaken in the designated crushing and screening extents within the pits to create further buffers to neighbouring residents and sensitive receptors. The current endorsed *EPA Separation Distances between Industrial and Sensitive Land Uses is Guidance No. 3 (2005)* whereby noise (and dust) is assessed on a “case by case”

basis. The Guidance (EPA, 2005) outlines that a 500m to 1000m buffer is considered appropriate and has been *given due regard* in the preparation of this document.

The crushing and screening areas are located greater than 1000m from the neighbouring residential properties. The nearest residential dwelling (located on the agricultural property to the southeast) is ~1428m away from the crushing and screening / extraction area, exceeding the 500-1000m threshold. The residential dwelling located within the property (seasonally occupied by the land owners) is approximately 767m to the extraction / crushing and screening areas. All proposed crushing and screening areas are to be licensed via DWER and a Works Approval application to be submitted for the operations.

#### Truck movements

Truck movements and noise is deemed to be low along upon entering Monjebup Road adjacent to the subject site, as trucks will be at low speed and low gearing to enter and exit the property. Road and truck noise is more probable along the unsealed Monjebup Road for the 6.7 km until entering the sealed Borden-Bremer Bay Road, where it joins other agricultural and industrial haulage routes. The extraction and subsequent carting of the gravel material is subject to demand and truck movements, noting on some days will be nil to minimal, whilst other days may be subject to a higher demand.

### **6.2 Dust and Erosion**

Dust emissions are anticipated during topsoil removal, resource excavation, crushing and screening, loading, haulage and wind erosion of exposed surfaces in adverse weather conditions. However, dust management will be implemented in order to mitigate dust emissions, ensuring dust levels cannot reach levels that adversely impact health, welfare, surrounding amenities and the environment (see Section 7.1 for further detail).

All overburden (topsoil and vegetative material) stockpiles and extracted material stockpiles will be no greater than four metres in height (minimum of 2m). Long-term stockpiling should be avoided where possible and will be dependent on demand; it is expected stockpiling will range between 6-12months. Stockpiles will not be located in areas subject to adverse environmental conditions (e.g., prevailing winds) such as prominent ridges, and will be located within the stage or extraction pit currently in operation. Operations temporarily cease during times of high winds, and water trucks and water shall be available to suppress dust. At the sign of any erosion, measures shall be put in place to mitigate any erosion. All post development runoff is contained onsite with drain basins, table drains and well-draining soils.

### **6.3 Light**

Extraction activities will not be conducted outside of daylight hours, therefore there will be no light emissions.

### **6.4 Discharges to Land**

There will be no discharges to land.

### **6.5 Wetlands and Public Drinking Water Source Areas (PDWSA)**

The desktop survey identified that the site is not in close proximity to conservation category wetlands or located within a PDWSA. The Monjebup Creek is a significant stream that runs through the property, to the west of the extraction area but does not intersect the “extraction area”. The property does however lie within the Albany Coast Surface Water Management Area (DWER, 2018b), the Pallinup River Water Surface Subarea (DWER, 2018c), and the Albany Coast WRIMS Surface Water Area (DWER, 2021).

### **6.6 Discharges to water**

There will be no discharge to surface or ground water. Surface water will be managed according to Section 7.3.

### **6.7 Flora and Vegetation**

The entire 4.76ha of proposed extraction site currently consists of native vegetation ranging from Good to Pristine condition, with the vast majority of vegetation in Excellent to Pristine condition. The extraction site does not cover areas that have been previously cleared. The entire area of native vegetation is currently being proposed to be cleared for extraction purposes. A Reconnaissance Flora and Vegetation and Basic Fauna survey was conducted on the 7<sup>th</sup> July by Bio Diverse Solutions

Environmental Consultants (Bianca Theyer and Katie White) (BDS, 2021b). This report has been used to guide the recommendations for management of extraction in this report and the accompanying Revegetation Plan (BDS, 2021a). Additionally, the Reconnaissance report has been used to guide environmental approvals to clear native vegetation through Clearing Permit (CPS 9260/1 – Gannaway, 2021), which at date of report is currently being assessed by the Department of Water and Environmental Regulations (DWER). No clearing of native vegetation (and therefore extraction of material) can occur prior to the approval of Clearing Permit CPS 9260/1 or an approved Development Approval (DA).

## 6.8 Fauna

A basic fauna survey was conducted by Bianca Theyer (Bio Diverse Solutions) on 7<sup>th</sup> July 2021 (BDS, 2021b) which aimed to assess and map the fauna habitat within the survey area, assess the likelihood of conservation fauna species utilising the general area and/or particular vegetation types, record actual presence of conservation fauna taxa, and undertake opportunistic inventory of vertebrate species encountered whilst traversing the survey area on foot. During the survey, 13 species of fauna were recorded, of these 13 species 10 were birds and three were mammals.

No conservation significant species were identified during the survey period. However, there is suitable habitat within the survey area for tammar wallaby (P4), western brush wallaby (P4), chuditch (VU), malleefowl (VU), grey falcon (VU), and marginal habitat for western whipbird (EN) western heath whipbird (EN) and western wheatbelt whipbird (P4). The survey area (~5ha) lies within the northern portion of a significant area of remnant vegetation (approx. 29ha). The southern portion of this remnant vegetation will remain undisturbed and available for fauna refuge.

If rehabilitation efforts as per BDS (2021a) are successful and replicate existing vegetation composition and structure, the impact on conservation significant taxa is unlikely to be significant. Clearing of habitat areas is planned to occur in a staged manner, ensuring there are areas of habitat preserved within the survey area throughout the life of the extraction project. There may be some loss of micro habitat as a result of proposed activities (e.g. rock ledges). This is not expected to have a significant impact on fauna within the survey area in the long-term.



## 7 Management Plans

### 7.1 Dust Management

Dust has potential to impact on the surrounding social and natural environment through decreases in visibility, air quality, vegetation health and general amenity.

Crushing and screening operations have the potential to generate dust through:

- Land clearing, vegetation and topsoil removal;
- Excavation, crushing and screening, transfer and loading of product for haulage;
- Wind erosion from topsoil stockpiles and other exposed surfaces;
- Use of access tracks; and
- Topsoil spreading during rehabilitation.

Dust emissions are anticipated during topsoil removal, resource excavation, crushing and screening, loading, haulage and wind erosion of exposed surfaces in adverse weather conditions. However, dust management can be implemented in order to mitigate dust emissions, ensuring dust levels cannot reach levels that adversely impact health, welfare, surrounding amenities and the environment.

All overburden (topsoil and brushing vegetative material) stockpiles and stockpiled gravel will be no greater than 3 metres in height. Long-term stockpiling will be avoided, but will be dependent on demand. Stockpiles will not be located in areas subject to adverse environmental conditions (e.g., prevailing winds) such as prominent ridges, and will be located within the stage or extraction pit currently in operation. Operations will cease during times of high winds (i.e., if visible dust seen leaving the property), and during times when a northwest, westerly or south-easterly wind (prevailing winds) are present. Water trucks and water will be used to suppress dust via a tanker on site. At the sign of any wind erosion, measures shall be put in place to mitigate any erosion. Measures to mitigate erosion include (but are not limited to) contouring of soils, surface water management (i.e., directing surface water away from the area if necessary) and bunding.

The aims of the dust management plan are to:

- Ensure dust is not prevailing over adjacent residences and properties;
- Maintain a dust free working environment for all employees on site;
- Ensure all employees and sub-contractors are educated to minimise dust from all operations; and
- Ensure dust is controlled and minimised at all times.

The following is to be implemented by D V Faming Co during operations:

- Land clearing will be kept to the minimum required for the project, and clearing and topsoil stripping will be avoided on high wind days;
- Clearing will be carried out in stages as the project progresses to minimise dust generation from cleared areas;
- All crushing and screening to occur within the designated boundary of the crushing and screening extents;
- Topsoil and vegetative material mounds to be no greater than 3 metres in height;
- Stockpiles of extractive material are to be located in pit areas and along the edge of pits to assist in noise and dust reduction to the properties and will be no greater than a height of 3m;
- Gradual rehabilitation will be undertaken to minimise the area of exposed surfaces (BDS, 2021a);
- Stockpiles to be configured to accommodate easy access for watering/dust minimisation;
- The access road, immediate extraction area and fixed plant (screen) to be watered as required to minimise dust emissions;
- Manage operations to minimise work in windy conditions to minimise dust emissions. Works only to occur in low velocity winds (i.e. operations to cease if visible dust seen leaving the property);
- Visually monitor emissions of dust from the works, if dust is visible, water trucks are to be utilised to suppress dust and / or operations are to cease temporarily;
- Works to cease temporarily if visible dust is seen leaving the site when there are strong winds (in excess of 25 km/hr) and dust suppression measures (i.e. water application to area) implemented;

- Trucks to be fully covered by tarpaulins when fully loaded, prior to leaving extraction area;
- Vehicle travel speeds will be restricted to 40 km/hour on unsealed surfaces on site;
- Education to employees and sub-contractors to raise awareness of dust management issues; and
- Dust complaint register in place to record any issues from neighbours. A contractor sign at the front gate to be erected clearly showing D V Faming Co contact details.

## 7.2 Noise Management

The noise management plan is to be implemented by D V Faming Co at all times of operation.

The aims of the Noise Management measures are to:

- Ensure compliance with *Environmental Protection (Noise) Regulations 1997*;
- Ensure noise does not significantly impact adjacent residences and properties by ensuring crushing and screening plant remains more than 500m from the closest adjacent residence (sensitive receptor);
- Ensure all D V Faming Co employees and sub-contractors are educated to minimise noise from all operations; and
- Ensure noise is controlled and minimised at all times.

The following actions are to be implemented by the contractor during excavation operations:

- All plant movements, extraction, crushing and screening operations are to be carried out between 7:00am and 5:00pm Mondays to Fridays, and 8:30am to 1:00pm on Saturday (in times of high demand / peak periods), not including Public Holidays;
- Mounding of topsoil along the edge of pits to act as noise bunds to further reduce noise at nearby properties, mounding is to be parallel to the excavated pit and maintained regularly for any defects, stabilised for dust management;
- Regular inspections of all plant and machines on site to ensure all are working and functioning correctly, without excess noise;
- Regular inspections of bunds to ensure noise is contained within the site and bunds are to required specified heights;
- Turning off equipment when not in use;
- Regular inspections of road trains and trucks used for carting to ensure all muffler and exhaust systems are functional, specific to noise attenuation;
- Vehicle travel speeds will be restricted to 40 km/hour on unsealed surfaces on site;
- Education to D V Faming Co employees and sub-contractors to raise awareness of noise management issues;
- Noise complaint register in place to record any issues from neighbours. A contractor sign at the front gate to be erected clearly showing D V Faming Co contact details; and
- Any noise related complaints will be recorded by the site manager and acted on immediately and resolved within 24 hours.

### Excavation processes

Excavation processing operations generate noise through the operation of machinery – dozers, excavators, light vehicles and trucks. These can be considered commensurate with general farm vehicle agricultural operations. Adhering to the plan above will ensure there is no adverse impact from excavation processes on the site. A formal list of machinery involved in the excavation process will be provided in the Works Approval form.

### Crushing and screening

Crushing and screening operations generate noise through the operation of machinery, crushing and screening plant. This noise has potential to impact on nearby sensitive receptors and is required to comply with the *Environmental Protection (Noise) Regulations 1997*. All crushing and screening operations is to be licensed by the Department of Water and Environmental Regulation (DWER) as per the *EP Act* “prescribed premises”. The regulation and compliance of the crushing and screening operations are via the DWER License for the premises as issued under the *EP Act*.

No blasting will be required, whilst portable crushing and screening equipment will be utilised, the crushing of large gravel “boulders” will only occur when required and it is therefore expected that most of the extracted resource will not require crushing.

As mentioned in Section 1.1 of this document, the activity of crushing and screening is only examined in this document as a component of the noise management plan. Buffers, setbacks and licensing conditions are to be dealt with by DWER as part of a works approval application by the proponent.

### **Truck and vehicle noise**

Truck movements and noise is deemed to be low along Monjebup Road, when immediately exiting the subject site, as trucks will be at low speed and gearing to enter and exit the property. Road and truck noise are more probable along the 6.7 km along Monjebup Road to the Borden-Bremer Bay Road, which services other agricultural land uses. The extraction and subsequent carting of the gravel material is subject to demand and truck movements on some days will be nil to minimal, whilst other days may be subject to a higher demand.

### **7.3 Truck Movements**

D V Farming Co are expecting to use 55 tonne trucks and 4-6 wheel pocket road trains for haulage of extracted material (*Pers. Comm. Peter Ruland, 2021*). Truck movements (2 movements = 1 truck would enter and exit the site per day) will be dependent on demand of materials. On average it is expected there will be 4-5 truckloads per week, resulting in a total 8-10 truck movements per week. During peak periods / times of high demand it is expected there will be an increase in truck movements and truckloads per day by approximately double (i.e. 10 truckloads and 20 truck movements correspondingly). It is anticipated for 50% of the year nil operations will occur when demand is low. Truck signs are to be installed prior to operations commencing before the access point along Monjebup Road and Borden-Bremer Bay Road, warning of truck movements. Monjebup Road is managed by the Shire of Jerramungup (due to the property being on the boundaries of the two local government areas) and may require consultation with both the Shire of Jerramungup and Gnowangerup for the appropriate location and set back of signage.

### **7.4 Stormwater Management**

The overall extraction area will be designed, constructed and operated to avoid disruption to surface water flows, minimise erosion and ensure that potential contaminants are not released into the environment. Stormwater management measures are:

- The site will be graded along contours to ensure that all stormwater, wash-down and spillage water run-off is either directed to a low point within the prescribed premises, or a collection and settling basin from where it can be recycled for dust suppression purposes;
- Perimeter bunding will be installed if required to minimize stormwater entering the site;
- Runoff from stockpiles diverted to low point within the prescribed premises;
- Contouring of pit edges to contain surface water;
- Encourage point source infiltration across the existing rural areas (future stages) and in rehabilitated areas; and
- Ensure all surface water is contained and treated on site.

Refer Section 7.13 for daily and weekly stormwater monitoring and controls of structures.

### **7.5 Weed Management**

Weed management is to be used in conjunction with Dieback hygiene management (Section 7.6) to address the biosecurity considerations of the project. The following Weed Management Plan is to apply to all aspects of site operations. All operations shall conform to this Weed Management Plan, and monitoring to occur post construction for any infestations. Weed management will primarily be undertaken through avoiding introducing new weeds to the site, to protect the high condition and lack of weed infestations currently present.

#### **7.5.1 Aims of Weed Management Plan**

The aims of the weed management program will be:

- Maintain a weed free environment, with the area currently predominately in Excellent to Pristine condition;
- Ensure all vehicles are clean on entry prior to any soil or vegetation movement;
- All weeds on site removed promptly on discovery;

- Do not use weed affected soils for rehabilitation (existing top soil present on site sufficient; BDS, 2021b); and
- Regularly monitor the site for invasive species.

If weeds are discovered on site, they will be treated using the following methodology:

- Large woody weeds will be burned, poisoned or removed from site and disposed to approved green waste;
- Small weeds will be sprayed by a licensed contractor or landholder; and
- Initial follow up spraying will be undertaken at 6 months and 18 months and repeated as necessary.

### 7.5.2 Program for Weed Control

The following program for weed management will be implemented prior to commencement of extractive activities, during extractive activities, and post extraction monitoring activities. Table 2 (below) is a guide for aggressive common species (adapted from Department of Agriculture and Food, DAFWA, 2007; Moore and Wheeler, 2008 and Department of Biodiversity Conservation and Attractions (DBCA, FloraBase; WAH, 1998 -) recommended management technique and should be used as a guide to treat relevant species within the proposal area. Further information for any species and recommended treatment not listed in Table 3 should be gained from the Department of Primary Industry and Regional Development (DPIRD).

**Table 2: Generalised Weed Management Program for Common Species**

Species	Treatment
<b>Grasses</b>	
Kikuyu <i>Cenchrus clandestinus</i>	Control with herbicides whilst growing.
African Love Grass <i>Eragrostis curvula</i>	Removal of small plants/infestations Annual Spray during winter, small infestations all year round as required.
Flat weed <i>Hypochaeris sp.</i>	Annual Spray during winter, small infestations all year round as required.
Hare's-tail Grass <i>Lagurus ovatus</i>	Prevent seed set for 2-3 years by the removal of the topsoil through civil works. Hand removal of small infestations. Annual spray during winter
Perennial Grasses <i>Phalaris sp.</i>	Selective control can be achieved with 800mL/ha Verdict®520 plus 1% spray oil. Or use 10mL Verdict®520 plus 100mL of spray oil per 10L water for hand sprays.
<b>Woody Weeds</b>	
Golden wattle <i>Acacia longifolia</i>	Hand pull seedlings. Fell mature plants, apply herbicides and diesel to trunk, or cut and paste or inject with Glyphosate
Tayloriana <i>Psoralea pinnata</i>	Treat seedlings early summer with Glyphosate, juveniles can be hand pulled. Fire not recommended. Slash or doze large trees.
<b>Grasses</b>	
## Blackberry <i>Rubus ulmifolius</i>	Mechanical control difficult. Annual summer applications of Grazon, 3 applications required, use Glyphosate in sensitive areas (i.e. creek lines).
Ink weed <i>Phytolacca octandra</i>	Uproot heavy infestations and cut remaining plants 5cm below ground. Spraying is effective.
Kangaroo Apple <i>Solanum laciniatum</i>	Herbicide treatment of 150mL Access® in 10L diesel to the lower 50cm of the trunk of the plant. Young growing seedlings can be sprayed with 1L/ha Starane® or hand pulled. Control spread for a radius of 5km. Plant perennial species to provide a good mulch on the soil.
<b>Herbs</b>	
Spear thistle <i>Cirsium vulgare</i>	Spray control effective for seedlings and adults. Manual control by eliminating seed production by close mowing/cutting twice per season
## Arum Lily <i>Zantedeschia aethiopica</i>	Mechanical control only effective if all root fragments removed. Multiple rotary hoeing over a few years provides control. Herbicides are most effective use 1g chlorsulfuron(750g/kg) plus 10mL 2,4-D amine(500g/L) plus 25mL Pulse® per 10L of water. Or use 1g metsulfuron(600g/L) plus 25mL Pulse® per 10L of water.
Curled Dock <i>Rumex crispus</i>	Remove isolated plants by cutting their roots at least 20cm below ground level. Small infestations 0.5g chlorsulfuron(600g/kg) plus 100mL Tordon®75-D in 10L of water in winter will control existing plants and seedlings for about a year.

**NB: # denotes declared weed**

Table 2 continued.

Species	Treatment
<b>Herbs</b>	
Cape Weed <i>Arctotheca calendula</i>	Manual removal before flowering effective. For large infestations apply Lontrel® 6 ml/10 L (300 ml/ha) in early growth stages. Glyphosate at 0.2% will provide some selective control if the plants are young or at the budding stage, otherwise spot spraying glyphosate at 10 ml/L. Introduction of native species which provide shade.
## Paterson's Curse <i>Echium plantagineum</i>	Isolated plants can be manually removed and burnt if flowering or seeding. Graze heavily with weathers (castrated ram) over spring to reduce seed production. Spray graze pasture with 500mL/ha Tigrex® in early winter before the weed has reached the 6-leaf stage and repeat if necessary.
Penny Royal <i>Mentha pulegium</i>	Improve drainage, spray with 40 g/ha metsulfuron before flowering, establish a vigorous perennial pasture such as kikuyu then spray graze annually in early winter with 750 mL/ha 2,4-D amine.
Smooth Cats-ear <i>Hypochaeris glabra</i>	Mowing and grazing ineffective. Hand remove small infestations and/or isolated plants, ensuring the taproot is removed. For dense infestations, apply Lontrel® and wetting agent. Introduction of native species which provide shade.

NB: # denotes declared weed

## 7.6 Dieback and General Plant Pathogen Hygiene Management

Over 40% of native flora species are susceptible to *Phytophthora cinnamomi*, with infection causing rapid and mass plant deaths. It also affects many horticultural crops (such as Avocados and citrus) and garden plants (such as roses), representing a significant biosecurity threat for the horticulture, agricultural and conservation industry. Often presence of *P. cinnamomi* is cryptic and difficult to ascertain. It is primarily spread through the movement of infected soil and mud, through vehicles/machinery and footwear, and naturally through free water and root-to-root plant contact. There are numerous other native plant pathogens or fungi active in Western Australia, and more broadly Australia representing a biosecurity concern, and basic hygiene management principles should be applied in general regardless of the site.

The area of native vegetation present is primarily uninterpretable, with only 12 of the 65 native species present within the subject site readily known as susceptible to *P. cinnamomi*. However, given the pristine nature of the site and the lack of any signs of plant deaths, it is likely the site remains free of non-native plant pathogens. The focus of the Dieback Hygiene Management Plan should be on preventing the introduction of Dieback or other plant pathogens from outside areas.

The aims of the dieback and hygiene management are to:

- To ensure there is zero spread of *Phytophthora* and other plant pathogens or diseases into and out of the area; and
- Implement measures for successful completion of the project in terms of education to personnel, decontaminating equipment, and defining access measures.

The following will apply to all aspects of operations and will form part of the hygiene management briefing to all site workers:

- Visual inspections on vehicles, plant, equipment and footwear are clean (free of any clods or patches of dirt or mud across the entire site,) when entering the site;
- Earth moving vehicles and equipment are to be cleaned prior to entering site with attention to:
  - Tyres: tread, trim, hub, wheel arches wheels;
  - Body: external areas, crevices, chassis, bumpers, side steps etc.
  - Internal: footwells of vehicles, engine bay, grill, radiator etc.
- Access to the site during excavation will be controlled (fenced and gated and locked when unattended);
- Completed areas will be rehabilitated as soon as practicable;
- The rehabilitated surface will be free draining and not contain wet or waterlogged soils;
- Materials used in rehabilitation will be from on-site stockpiled material; and
- Road and transport vehicles are to be restricted to defined road reserve, loading and turn around areas.

### Clean down specification:

A visual inspection is necessary of in-coming and out-going vehicles to determine whether or not vehicles, machinery or equipment is free of a build-up of:

- Clods of soil and plant material and / or slurry consisting of a mixture of soil, plant and water;
- Dust and grime adhering to the sides of vehicles need not be removed before entering the site;
- Records of inspections and clean downs are to be maintained; and
- As a contingency measure, if vehicles or plant are entering the site and require a clean down, a wash down facility with hard-stand bunding should be used that does not allow run-off of the washdown to infect the surrounding area.

## 7.7 Bushfire Risks and Management

Vegetation Classification to AS3959-2018 was undertaken by Kathryn Kinnear (level 2 BPAD Practitioner, BPAD 30794). Refer to Vegetation Classes Map in Appendix C. As per the requirements of State Planning Policy (SPP) 3.7 (WAPC, 2015) a Bushfire Hazard Level (BHL) map was produced as per the defined methodology of the Guideline for Planning in Bushfire Prone Areas Version 1.3 (WAPC, 2017).

A method 1 BAL Assessment of the subject site was undertaken for the excavation area. The assessment found that there is Forest Type A within the subject site and Grassland Type G and Forest Type A adjacent to the excavation area. Refer to Mapping Appendix C. Forest Type A is classified as an Extreme Bushfire Hazard Level (BHL) and Grassland Type G is classified as a Moderate BHL. Upon excavation works the subject site will be a Moderate BHL (open pits) due to being within 100m of Extreme BHL (Forest areas remaining to the south). Refer to post development BHL Appendix C (needs updating). It is recommended that a minimum setback to any Extreme BHL's (i.e. to the south) that a minimum of 10m mineral earth fire break (can have the earth bund) with a 6m trafficable surface for fire appliances to attend to a bushfire if required in the remnant (remaining) vegetation.

### **Bushfire Management Statement**

Planning in Bushfire Prone Areas Version 1.3 (WAPC, 2017) requires assessment to the bushfire protection criteria – a process where land is assessed for compliance to the criteria. The bushfire protection criteria (Appendix C in WAPC, 2017) are performance-based criteria in assessing bushfire risk management.

The bushfire protection criteria (Appendix C in WAPC, 2017) outline four elements, being:

- Element A1: Location;
- Element A2: Siting and Design of Development;
- Element A3: Vehicle Access; and
- Element A4: Water.

The subject site is located in a Bushfire Prone Area (OBRM, 2019), refer to Figure 4 over the page.

The proposal is required to meet the “Acceptable Solutions” of each Element of the bushfire mitigation measures (WAPC, 2017). The proposal will be assessed against the bushfire protection criteria Acceptable Solutions for Elements A1, A2, A3 and A4. A summary of the assessment is provided below in Table 3. Please refer to the summary table over the page, Table 3.

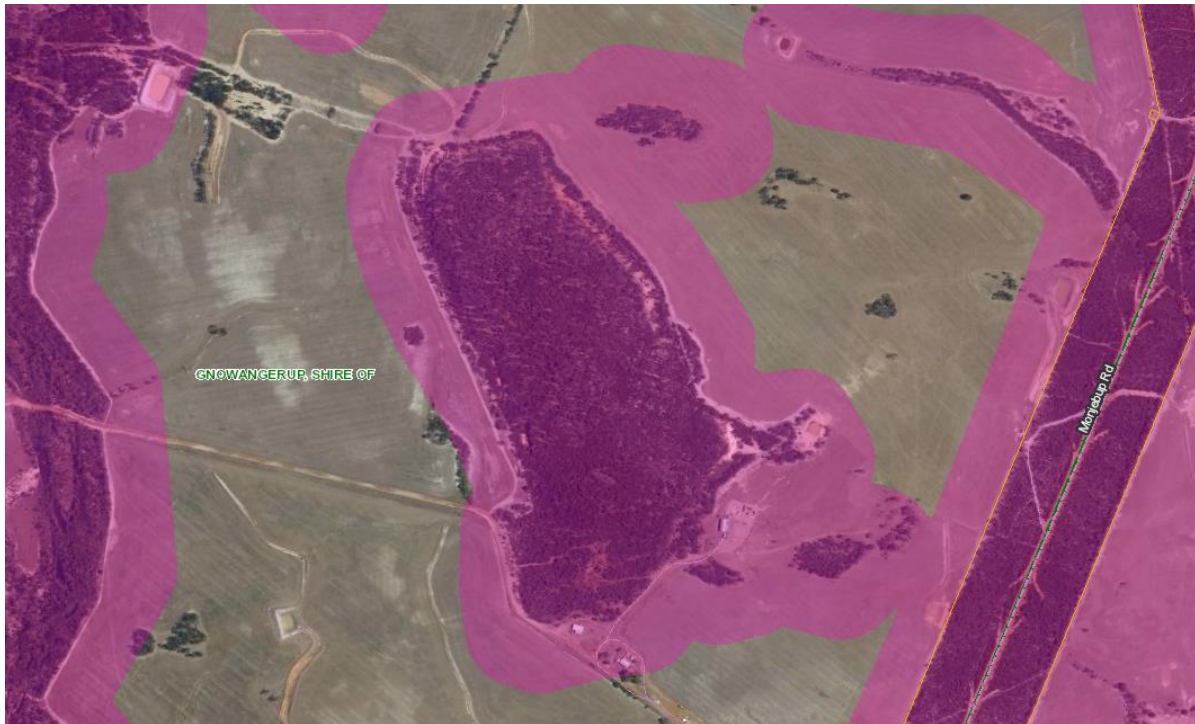


Figure 4: State Bushfire Prone Mapping (OBRM, 2019).

Table 3: Bushfire protection criteria applicable to the site

Element	Acceptable Solution	Applicable or not Yes/No	Meets Acceptable Solution
Element 1 – Location	A1.1 Development Location	Yes	Compliant. As per SPP.3.7 and the Guidelines for Planning in Bushfire Prone Areas, upon removal of the trees the subject site will be a moderate BHL with extreme and moderate BHL adjacent. There are no proposed habitable buildings for this development (site office or dwellings) on the extraction site. Proposal deemed to meet Acceptable Solution A.1.1.
Element 2 – Siting and Design	A2.1 Asset Protection Zone	Yes	Compliant. The Crushing and screening equipment will be in low fuel areas as defined by AS3959 Exc 2.2.3.2 whereby bare areas will exist. No habitable buildings are proposed for this development. Proposal deemed to meet Acceptable Solution 2.1.
Element 3 – Vehicular Access	A3.1 Two Access Routes	Yes	Compliant. Site personnel will have access in alternative directions north and south along Monjebup Road. Monjebup Road connects to Borden-Bremer Bay Road to the south and to Boxwood Hill-Ongerup Road to the north. Proposal deemed to meet Acceptable Solution A3.1.
	A3.2 Public Road	No	No public roads are proposed for this proposal. Not assessed to Acceptable Solution A3.2.
	A3.3 Cul-de-sacs	No	No cul-de-sacs are proposed. Not assessed to Acceptable Solutions A3.3.
	A3.4 Battle axes	No	No battle axes are proposed. Not assessed to Acceptable Solution A3.4.
	A3.5 Private driveways	Yes	Compliant. Internal access driveways and pit areas will have adequate turn around areas as per the minimum requirements as per Figure 5 below. Proposal deemed to meet Acceptable Solution A3.5.
	A3.6 Emergency Access Ways	No	No EAWs proposed as the public road network will be utilised. Not assessed to Acceptable Solution A3.6.

Table 3 continued.

Element	Acceptable Solution	Applicable or not Yes/No	Meets Acceptable Solution
	A3.7 Fire Service Access Ways	No	No FSA's proposed as the public road network will be utilised. Not assessed to Acceptable Solution A3.7.
	A3.8 Firebreaks	Yes	Compliant. Firebreaks are currently in place around the subject site and should remain in perpetuity as per the LGA Fire Management Notice. Development deemed to meet Acceptable Solution 3.8.
Element 4 – Water	A4.1 Reticulated areas	No	Not assessed to A4.1.
	A4.2 Non-reticulated areas	Yes	Water will be required for bushfire safety and dust control. Reticulated water will not be available. A minimum 10,000L standalone tank will be required solely dedicated for firefighting supply. Appropriate storz fittings are to be installed for fire services to access supply. The proposal will meet Acceptable Solutions A4.3.
	A4.3 Individual lots in non-reticulated areas	No	Not assessed to A4.3.

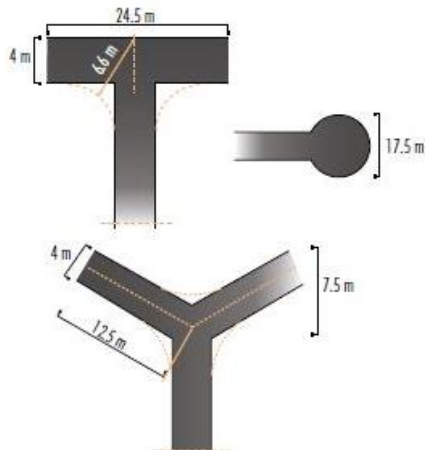


Figure 5: Private driveway design requirements (WAPC, 2017)

Table 4: Vehicular Access Technical Requirements (WAPC, 2017)

Technical requirements	Private Driveways & Battle Axes
Minimum trafficable surface (m)	4
Horizontal clearance (m)	6
Vertical clearance (m)	4.5
Maximum grades	1 in 10
Minimum weight capacity (t)	15
Maximum crossfall	1 in 33
Curves minimum inner radius (m)	8.5
Maximum Length	50m

### Other bushfire mitigation measures

There is a potential bushfire risk from operations on “Extreme” “Fire Danger Index” (FDI) rated days. The predominant bushfire risk associated with the site is the adjacent native vegetation (east and west) where heavily vegetated areas (Extreme Risks) under hot conditions can give rise to hot and intense fires. The following fire control methods should be enforced at all times during summer periods.

### Summary of bushfire control methods to apply to this development:

- Driveway construction standards as outlined in this document (responsibility of the contractor);
- Abide by LGA imposed Vehicle Movement and/or Harvest ban due to dangerous fire weather conditions or if there are bush fires already burning during the Restricted and Prohibited Burning Times (i.e. High-Very High Fire Danger days) (responsibility of the contractor);
- 10,000L dedicated water supply on site; and
- A mobile firefighting appliance dedicated to firefighting operations is located on the property at all times during bushfire season operations (November - April) (responsibility of the contractor).



## 7.8 Rehabilitation Management

The area is required to be rehabilitated through returning the area to native vegetation, known as revegetation. This is a requirement of Clearing Permit CPS 9260-1 (Section 6.7; Gannaway, 2021). A revegetation plan has been written by Bio Diverse Solutions (2021a), which provides further details on the rehabilitation of the site.

### 7.8.1 Site Preparation

Small areas of infestation of common agricultural and cropping species were present on the periphery of the area. It is recommended that any areas that vehicles or extractive machinery were to traverse or be stored within the farm is treated prior to any clearing occurring. This is to ensure that weeds are not further dispersed by the machinery and activity on site. Avoid herbicide drift or overspray as this will impact the health, vigour and fecundity of the native vegetation and potentially impact the revegetation success.

### 7.8.2 Methodology

Revegetation will be completed through stockpiling of overburden (topsoil and mulch) methods following clearing. A broad plan is outlined below:

1. Vegetative material will be cleared and stored in a stockpile, as mulch. The topsoil will be removed to a depth of 150-200 mm, capturing the dominant layer of soil seed bank.
2. Where feasible, temporary topsoil and mulch (known as 'overburden') should be separated into separate stockpiles, as this is known to increase the success of the revegetation through different types of seed stored separately (e.g. Geo-sporous compared to serotinous seed storage mechanisms);
3. The overburden will be stored within the areas approved for excavation and clearing. The overburden will be stockpiled in piles no greater than 3 metres and in windrows of 5-8 m wide. Overburden is likely to remain in stockpiles for an expected 6 months, and at a maximum 12 months.
4. Excavations are only to occur at existing ground level at base of breakaway. The unique geology and soil type of the breakaway is likely required to replicate Vegetation B and will be retained to minimise impact of the extraction activities.
5. The sites are to be progressively rehabilitated and the topsoil and mulch are to be returned to the excavated areas as soon as possible to avoid erosion and wind drift.
6. Revegetation will occur through the staging of the project. Refer to detailed revegetation plan/report.
7. Following excavation, the overburden will be returned to the area, releasing the stored seed as a tool for revegetation. This occurs through by firstly spreading the topsoil, shaping and ripping to reduce compaction. Batters involved in re-shaping of area should not exceed 1:5 m slopes. Secondly, the mulch is spread over the ripped area to provide potential plant niches, release any seeds retained in serotinous or woody propagules and prevent wind or soil erosion.
8. Exclude and limit disturbances to the revegetation area, including fire and grazing. Currently the surrounding land use is pastoral cropping. If agricultural practices were to be changed to livestock, it is recommended that fencing surrounding area remain and all livestock are excluded from the area in perpetuity.
9. Monitor and measure – see Revegetation Plan (BDS, 2021a).

## 7.9 Control of Environmental Incidents

An important aspect in the environmental program is management of non-conformance or incidents. An environmental incident is an event which could result in pollution to the local environment. The planning of site works and methodology as outlined within this management plan limits the risk and harm of construction works impacting on-site or off-site.

If an incident or event occurs during operations and excavation, it should be emphasised to all personnel working on site that all incidents are documented. Investigations should be conducted and action plans established in order to ensure the event does not happen again. The Site Operations Manager will be responsible for maintaining records of environmental incidents and reporting.

Examples of an “incident” for this project may include:

- Hygiene protocols not adhered to;
- Topsoil has not been appropriately placed;
- Unplanned vegetation clearing has occurred;
- Mechanical breakdown occurring along a waterway and hydraulic oil spill occurs;
- Refuelling occurs within the creek area;
- Complaints from “stakeholders” or neighbours; and
- Any event which causes non-compliance with the Operations Management Plan.

Should an incident occur which leads to a non-conformance, the Site Manager shall inform the owner of the property of any non-compliance or potential non-compliance within seven days of that non-compliance being known, and if further action is required then the SoG will be informed.

### 7.10 Corrective and Preventative Actions

An environmental investigation should include the following basic elements:

- Identify the cause of the incident;
- Identifying and implementing the necessary corrective action;
- Identifying the personnel responsible for carrying out corrective action;
- Implementing or modifying controls necessary to avoid repetition;
- Recording changes in written procedures required; and
- Reporting to the appropriate government agencies if required.

### 7.11 Contingency Procedures

Contingency measures are included within this management plan. These protocols are designed to reduce adverse environmental impacts and provide an early detection of non-conformance and subsequent corrective action. Any modifications to the outlined strategies and methodologies to meet unexpected conditions shall be agreed to by the Site Manager. Monitoring shall be used to confirm the effectiveness of any changes.

Should it be identified by any personnel involved in the project there is a non-conformance to the acceptable methodology or there is reason to cause environmental harm, in consultation with the Site Manager and owner of the property, activities should cease during resolution of the required change in methodology.

The Site Manager should be notified of any environmental non-conformances and undertake site investigation. It will be the responsibility of the Site Manager to report any environmental incidents to the appropriate government agencies (e.g. Department of Water and Environmental Regulation – contamination, spills etc., Parks and Wildlife Service (PAWS/DBCA) - impacts to flora or fauna).

### 7.12 Spill Management Procedures

The methodology should be employed should a spill from fuel or chemical occur.

#### Dealing with minor spills

A small spill is considered to be a spill of 5L or less providing the product is not concentrated. For concentrated products of any quantity the spill must be treated as a large spill.

**1. Assess safety.** Make sure that people are kept clear, and that you have the right training and equipment to deal with the spill.

**2. Stop the source.** Providing it is safe to do so, stop the spill at its source. This may involve righting an overturned container or sealing holes or cracks in containers.

**3. Contain and clean up the spill.** The spill should be mopped up immediately.

**4. Record the spill.** Record when, what, how and where the spill occurred, clean up measures undertaken and the names of any witnesses. Also, make note of what changes can be made when handling, transporting or storing chemicals to ensure a similar incident does not happen again.

#### **Dealing with large spills**

A large spill is considered to be anything over 5L or concentrated chemicals of any volume.

**1. Assess safety.** Make sure that people are kept clear, and that you have the right training and equipment to deal with the spill.

**2. Consult the Material Safety Data Sheet (MSDS).** The MSDS will have instructions on how to deal with specific chemical spills.

**3. Put on protective clothing.** If necessary, put on gloves and goggles, a mask and an apron.

**4. Stop the source.** Providing it is safe to do so, stop the spill at its source. This may involve righting an overturned container or sealing holes or cracks in containers.

**5. Contain and control the flow.** The spill should be prevented from filtrating into the ground or entering the stormwater system. The outer edge of the spill should be dammed with rags, blankets, sand, sands bags, mops and/or absorbent booms.

**6. Clean up the spill.** Promptly cover the spill using absorbent materials such as the correct absorbent granules for the product (Note that some strong acids will react with some types of granules and sawdust), sand and rags, being mindful not to splash the spill. Using a dustpan or spade, the absorbent granules or sand must then be scooped up and placed into a container. This waste material is not to be buried or thrown into the environment. The method of disposing this waste will depend on the amount and the type of chemical that was spilt. The Department of Environment Controlled Waste Section will advise on the appropriate disposal of hazardous substances. There are several contractors that will dispose of contaminated substances and soils. All contact phone numbers can be found below

**7. Notify the appropriate authority.** If the spill does enter a stormwater drain or open ground, the Department of Environment and your local council must be notified. Please refer to the phone numbers listed below. If there is a hazard to health or property, call Fire and Rescue on 000 immediately.

**8. Record the incident.** Record what, how and where the spill occurred and the names of any witnesses. Also, make note of what changes can be made when handling, transporting or storing chemicals to ensure a similar incident does not happen again.

#### **Who to call in an emergency**

##### **All hours' phone numbers**

Life / property emergencies: Ambulance, Fire or Police	000
Pollution emergencies - Department of Water and Environment Regulation	1300 784 782
Poisons Information Centre	13 11 26
Water Corporation – Emergencies and water service difficulties	13 13 75

#### **7.13 Monitoring and Contingency Planning**

Environmental controls during construction will be checked at frequent intervals as outlined in Table 6 below. This will be the responsibility of the Site Supervisor and the Environmental Officer to ensure all the below activities are carried out.

**Table 5: Environmental Monitoring Activities During Construction**

<b>Frequency &amp; Compliance Number</b>	<b>Activity</b>
<b>Daily</b>	Check all sediment controls
	Check waste materials collected from site are correctly sorted and stored (i.e. green waste, refuelling in designated areas only).
	Check personal safety equipment before each use.
	Check dust filters on equipment.
	Visually check vehicles and equipment for leaks or potential oil spills.
	Check signage, gates and demarcation tapes (trees and dieback) in place
	Check noise suppression devices on equipment prior to working.
	Check no disturbance to soils in wetlands/creek areas for disturbance of ASS.
	Check vehicle/hygiene requirements have been met.
	Check topsoil has been appropriately placed.
	Check no unplanned vegetation clearing has occurred.
	Incident reports have been completed if required.
	Check containers of hazardous materials are properly stored and not damaged (away from site)
<b>Twice weekly</b>	Ensure dust suppression controls in place
	Visually check vehicles and equipment for leaks or potential oil spills
<b>Weekly</b>	Inspect all sediment control structures
<b>After rain (i.e. &gt;10mm)</b>	Check all drains are free from debris or chemicals (i.e. hydrocarbons)
	Stormwater structures are checked and/or are cleaned out
	Check for erosion after wet periods and winter months
	Ensure drainage structures are working as required
	Ensure sediment controls are working appropriately
<b>Monthly</b>	Ensure rehabilitation areas are healthy and free of weeds
	Apply stabilisation on any bare regenerating areas
	Remove weeds as per Weed Management Plan
	Ensure public access is restricted and signage in place

## 8 Consultation Process

To ensure that all aspects of the project encompass current best practise, legislative requirements and guidelines, the following consultation plan shall be implemented.

Consultation shall occur with government agencies, if required:

- At approval of the Shire of Gnowangerup Planning Approval and prior to implementation, for Shire of Gnowangerup feedback and comment regarding the document;
- A site meeting/walk over with government agency representatives (if requested) prior to commencement of any site works to confirm refuelling area, demarcation, turnarounds, areas of concern etc.; and
- Post construction periods.

Recommended government agencies to consult are:

- Department of Water and Environmental Regulation – regarding all storm water and water quality issues and approval of the Permit to Clear Native Vegetation, CPS 9260/1;
- Department Biodiversity, Conservation and Attraction (Parks and Wildlife Service) – vegetation and flora, fauna, wetlands weeds, disease, flora and fauna issues. This is particularly pertinent to the presence of Priority One species, *Kunzea newbeyi*, with regional DBCA flora and conservation officers likely required to be consulted.
- Shire of Gnowangerup – regarding site construction activities, areas of environmental concern, haulage routes utilised and signage placement along Borden-Bremer Bay Rd, pit and track design, control measures implemented and ongoing management; and
- Shire of Jerramungup – regarding haulage routes utilised and signage placement along Monjebup Rd.

Regular consultation can occur during operations with other stakeholders as required and may include but not be limited to:

- Neighbours;
- Community groups;
- Shire of Gnowangerup representatives;
- Parks and Wildlife Service (DBCA); and
- Interest groups as identified.

The client and site supervisor shall have overall responsibility of conveying information to relevant government agencies regarding any environmental or operational issue or concern.

## 9 Implementation Process

A generalised implementation program for the proposal is shown below in Table 6. Carting of extraction materials will occur during times of high demand. Each stage / pit is to be rehabilitated prior to the next stage being opened, which should take no more than 1 week to complete. The implementation program outlined below is a generalised plan and is subject to change depending on demand for resource and general availability at the site. The Shire of Gnowangerup licence is generally granted for 10 years and is subject to renewal at the end of that period. It is noted that this period is the “renewal license period” only not a life of project.

**Table 6: Implementation Program**

Note. Example table, dependent on information of staging of project.

Year	2022	2023	2024	2025	2026	2027	2028	2029
<b>Stage</b>								
<b>Stage 1 extraction</b>								
Rehabilitation								
<b>Stage 2 extraction</b>								
Rehabilitation								
<b>Stage 3 extraction</b>								
Rehabilitation								
<b>Stage 4 extraction</b>								
Rehabilitation								

It is recommended that this management plan is reviewed post initial excavation stages to ensure site management is occurring to the plan and any modifications are undertaken to the document consistent with operational duties and environmental requirements. Any factors which need to be considered for long term management should be documented into an updated post completion report or long-term maintenance schedule. At each stage/activity the management goals/objectives should be met prior to commencement of the next stage of works.

## 10 References

AS 3959-2018 Australian Standard, Construction of buildings in bushfire-prone areas, Building Code of Australia, Primary Referenced Standard, Australian Building Codes Board and Standards Australia.

BDS, Bio Diverse Solutions (2021a). *Revegetation Plan for CPS 9260-1, for Lot 1857 (No. 653), Monjebup Rd, Boxwood Hill*. Prepared by Katie White as unpublished report for D V Farming Co.

BDS, Bio Diverse Solutions (2021b). *Reconnaissance Flora and Vegetation and Basic Fauna Survey Report for Lot 1857 (No. 653) Monjebup Rd, Boxwood Hill*. Prepared by Bianca Theyer and Katie White as unpublished report for D V Farming Co.

Beard, J. S., Beeston, G.R., Harvey, J.M., Hopkins, A. J. M. and Shepherd, D. P. (2013). The vegetation of Western Australia at the 1:3,000,000 scale. Explanatory memoir. Second edition. *Conservation Science Western Australia* 9: 1-152.

BoM, Bureau of Meteorology Australia (2021) *Climate Statistics for Australian Locations – Ongerup (Site No. 010622)* Accessed: June 2021 [www.bom.gov.au](http://www.bom.gov.au)

Comer, S., Gilfillan, S., Barrett, S., Grant, M., Tiedemann, K., and Lawrie, K. (2001). *Esperance 2 (ESP2 – Recherche subregion). A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002*. Department of Conservation and Land Management.

DAFWA, Department of Agriculture and Food of Western Australia (2007). *Soil and Land Conservation Act 1945 as Amended to Agreement to Reserve and Conservation Covenant, Part 1V A for Lot 1857 on Deposited Plan 209448*. Landgate.

DAWE, Department of Agriculture, Water and Environment (2021). *Protected Matters Search Tool*.

DBCA, Department of Biodiversity, Conservation and Attractions (1999). *Weeds Strategy for Western Australia 1999*.

DBCA, Department of Biodiversity, Conservation and Attractions (2007 –) *NatureMap: Mapping Western Australia's Biodiversity*. Department of Parks and Wildlife. URL: <https://naturemap.dbca.wa.gov.au/>

DBCA, Department of Biodiversity, Conservation and Attractions (2021), *Threatened and Priority Flora Database Search for Lot 1857 No. 653 Monjebup Road Boxwood Hill* accessed on the 30/06/2021. Prepared by the Species and Communities program for Bianca Theyer, Bio Diverse Solutions (34-0621FL) for reconnaissance flora and vegetation survey.

DPIRD, Department of Primary Industries and Regional Development (2018a). *Soil landscape land quality - Zones (DPIRD-017) dataset*.

DPIRD, Department of Primary Industries and Regional Development (2018b). *Hydrological Zones of Western Australia (DPIRD-069) dataset*.

DPIRD, Department of Primary Industries and Regional Development (2019). *Pre-European Vegetation (DPIRD-006) dataset*.

DPIRD, Department of Primary Industries and Regional Development (2021). *Soil Landscape Mapping - Systems (DPIRD-064) dataset*.

DPLH, Department of Planning, Lands and Heritage (2021). *Aboriginal Heritage Inquiry System (AHIS)*.

DPLH, Department of Planning, Lands and Heritage (1990). *Shire of Gnowangerup Local Planning Scheme No. 2*. Accessed: <https://www.dplh.wa.gov.au/getmedia/63c0302f-4034-4c40-b7d3-12ac765f5498/Gnowangerup-Scheme-Text>

DWER, Department of Water and Environmental Regulation (2018a). RIWI Act, Rivers (DWER-036) dataset accessed July 2021 from <https://maps.slip.wa.gov.au/landgate/locate/>

DWER, Department of Water and Environmental Regulation (2018b). Surface Water Management Areas (DWER-041) dataset. Accessed August 2021. <https://maps.slip.wa.gov.au/landgate/locate/>

DWER, Department of Water and Environmental Regulation (2018c). Surface Water Management Subareas (DWER-042) dataset. Accessed August 2021. <https://maps.slip.wa.gov.au/landgate/locate/>

DWER, Department of Water and Environmental Regulation (2019). Water Quality Protection Note No. 15, Basic Raw Material Extraction. Government of Western Australia.

DWER, Department of Water and Environmental Regulation (2020) *Public Drinking Water Source Areas (DWER033) dataset* accessed July 2021 from <https://maps.slip.wa.gov.au/landgate/locate/>

- DWER, Department of Water and Environmental Regulation (2021). WRIMS - Surface Water Areas (DWER-082) dataset. Accessed August 2021. <https://maps.slip.wa.gov.au/landgate/locate/>
- EPA, Environmental Protection Authority Western Australia (2005) *Environmental Assessment Guideline for Separation Distances between Industrial and Sensitive Land Uses – Guidance Statement No. 3*. Government of western Australia.
- EPA, Environmental Protection Authority Western Australia (2015) *Draft Environmental Assessment Guideline for Separation Distances between Industrial and Sensitive Land Uses*. Government of western Australia.
- Gannaway, M. (2021). Correspondence: *Application to clear Native Vegetation under the Environmental protection Act 1986 – Request for further information, CPS 9260-1*. Department of Water and Environmental Regulation.
- GoA, Government of Australia (1999). *Environmental Protection and Biodiversity Conservation Act 1999*.
- GoWA, 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.
- GoWA, Government of Western Australia (2016). *Biodiversity Conservation Act*.
- GoWA, Government of Western Australia (2007). *Biosecurity and Agricultural Management Act 2007*.
- GoWA, Government of Western Australia (1986). *Environmental Protection Act and Environmental Protection regulations*
- GoWA, Government of Western Australia (1980). *Conservation and Land Management Act 1980*
- GoWA, Government of Western Australia (1945). *Soil and Conservation Act*
- Keighery, B. (1994) *Bushland Plant Survey, A Guide to Community Survey for the Community*, Wildflower Society of WA.
- McConnell, C. (2021). *Request to vary agreement to reserve on lot 151 on Deposited Plan 49854 on the Certificate of title Volume 2658, Folio 898. Memorial K082472*. Department of Primary Industries and Regional Development.
- Moore, J, and Wheeler, J. (2008), *Southern weeds and their control*. Department of Primary Industries and Regional Development, Western Australia, Perth. Bulletin 4744.
- Sandiford, E.M. and Barrett, S. (2010) *Albany Regional Vegetation Survey, Extent Type and Status, A project funded by the Western Australian Planning Commission (EnviroPlanning “Integrating NRM into Land Use Planning” and State NRM Program), South Coast Natural Resource Management Inc. and City of Albany for the Department of Environment and Conservation*. Unpublished report. Department of Environment and Conservation, Western Australia.
- SWALSC, South West Aboriginal Land and Sea Council (n.d.). *Noongar Land Estate, Interactive Map*. Accessible: <https://www.noongar.org.au/land-base-map>
- OBRM, Office of Bushfire Management (2019). *Map of Bushfire Prone Areas*. Data retrieved from State Information Land Portal (SLIP): <https://maps.slip.wa.gov.au/landgate/bushfireprone/>
- Personal communication (2021). Comments received from P. Ruland to Bio Diverse Solutions during report preparation.
- 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 WA.
- WAH, Western Australian Herbarium (1998- ). *FloraBase: The Western Australian Flora*. Accessed July 2021 online at: <https://florabase.dpaw.wa.gov.au/>
- WAPC, Western Australian Planning Commission (2017). *Guidelines for Planning in Bushfire Prone Areas v1.3*. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia.
- WAPC, Western Australian Planning Commission (2015). *State Planning Policy 3.2 Planning in Bushfire Prone Areas*. Department of Planning WA and Western Australian Planning Commission.



## **11 Appendices**

Appendix A – Site Facility Mapping

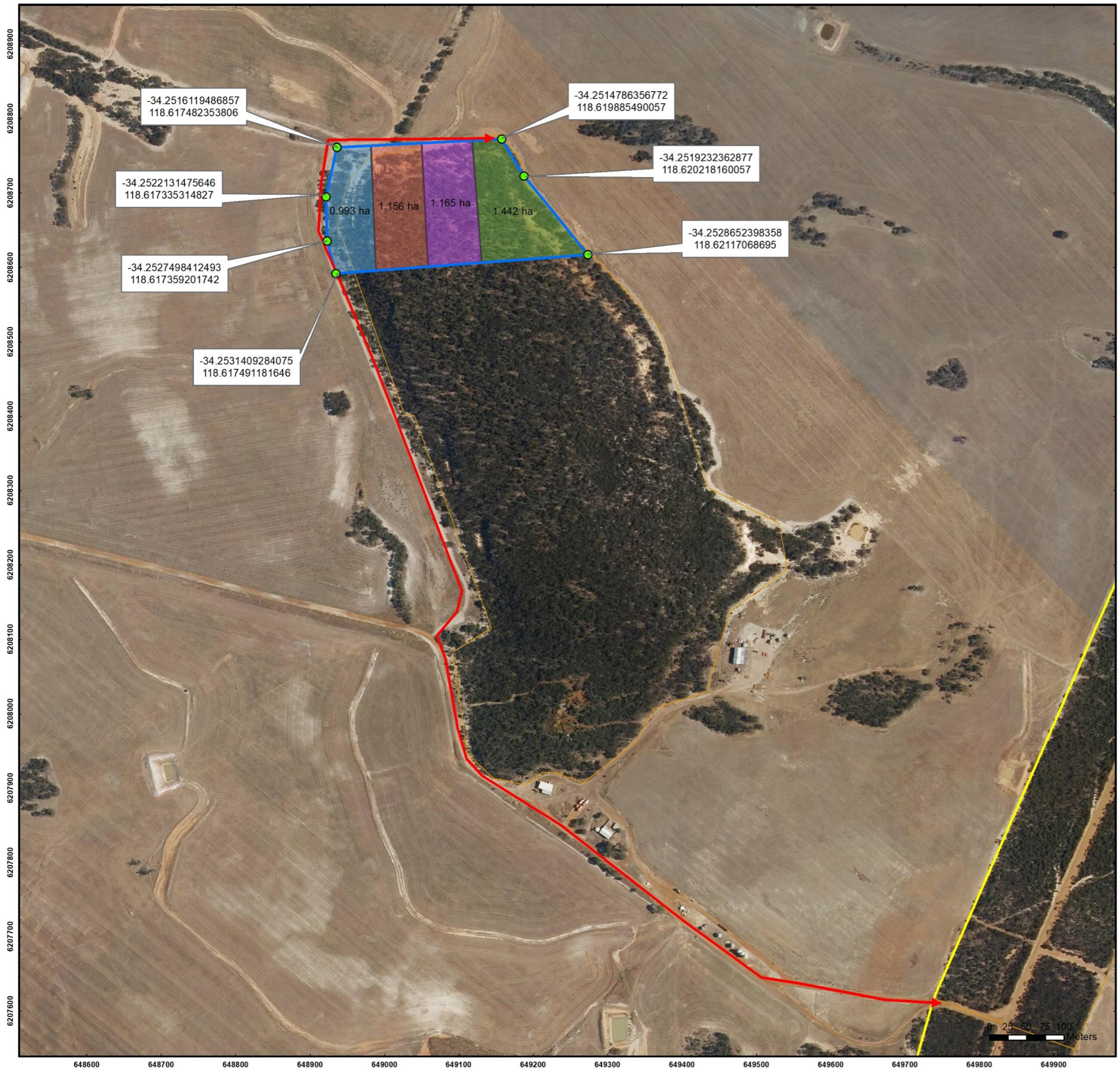
Appendix B – Native Vegetation Mapping

Appendix C – Bushfire Mapping

Appendix D – Amendment to Agreement to Reserve (ATR)

# **Appendix A**

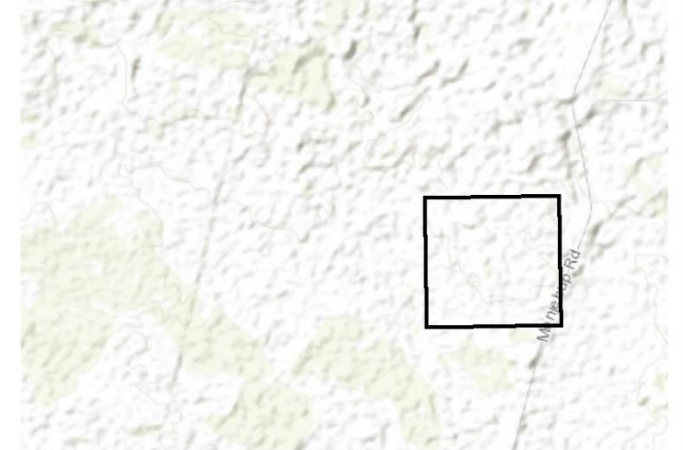
## Site Facility Mapping



Albany Office:  
29 Hercules Crescent  
Albany, WA 6330  
(08) 9842 1575

Denmark Office:  
7/40 South Coast Highway  
Denmark, WA 6333  
(08) 9848 1309

Esperance Office:  
2A/113 Dempster Street  
Esperance, WA 6450  
(08) 9072 1382



Overview Map Scale 1:100,000

**Legend**

- Property Boundary
  - Extraction Area
  - Cadastre
  - Extraction Area GPS Points
  - ↔ Access route
  - Pits
- Stages**
- 1
  - 2
  - 3
  - 4



Scale  
1:5,000 @ A3  
GDA MGA 94 Zone 50

**Data Sources**  
Aerial Imagery: WA Now, Landgate Subscription Imagery  
Cadastre, Relief Contours and Roads: Landgate 2017  
IRIS Road Network: Main Roads Western Australia 2017  
Overview Map: World Topographic map service, ESRI 2012

**CLIENT**  
D V Faming Co  
Lot 1857 (No. 653) Monjebup Road  
Monjebup, WA 6338

**Staging Plan**

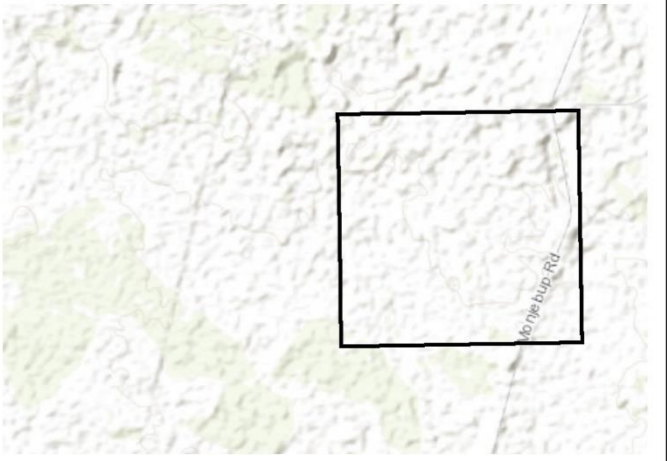
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STATUS <b>FINAL</b>	FILE <b>MSC0444</b>	DATE <b>11/08/2021</b>



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Albany, WA 6330  
(08) 9842 1575

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(08) 9848 1309

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Esperance, WA 6450  
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Overview Map Scale 1:100,000

**Legend**

- Property Boundary
- Extraction Area
- Cadastre
- 5m Contours
- Existing Dwelling
- Separation Distance
- Pits
- Buffers**
- 100m Waterway/Waterbody Buffer
- 500m Noise & Dust Buffer (EPA)
- 1000m Noise & Dust Buffer (EPA)



Scale  
1:9,000 @ A3  
GDA MGA 94 Zone 50

**Data Sources**  
Aerial Imagery: WA Now, Landgate Subscription Imagery  
Cadastre, Relief Contours and Roads: Landgate 2017  
IRIS Road Network: Main Roads Western Australia 2017  
Overview Map: World Topographic map service, ESRI 2012

**CLIENT**  
D V Faming Co  
Lot 1857 (No. 653) Monjebup Road  
Monjebup, WA 6338

**Site Buffers Mapping**

	QA Check <b>KK</b>	Drawn by <b>BT</b>
STATUS <b>FINAL</b>	FILE <b>MSC0444</b>	DATE <b>11/08/2021</b>

# **Appendix B**

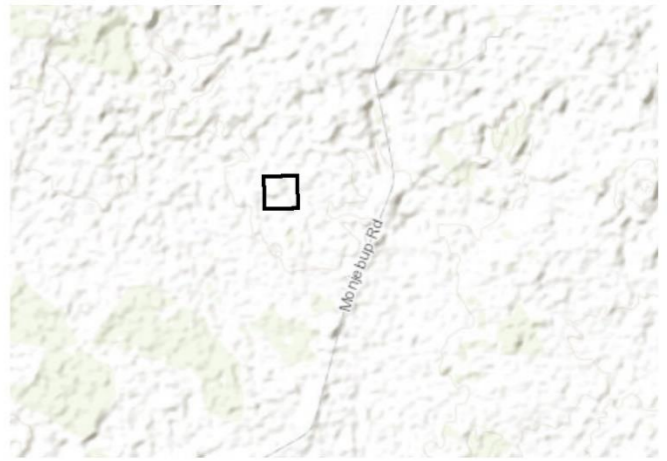
## Vegetation Mapping



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(08) 9072 1382



Overview Map Scale 1:5,000,000

**Legend**

-  Subject Site
- Pre European Vegetation (DPIRD\_006)**
-  Jerramungup 516
-  Native Vegetation Extent (DPIRD\_005)



Scale  
1:1,250 @ A3  
GDA MGA 94 Zone 50

**Data Sources**  
Aerial Imagery: WA Now, Landgate Subscription Imagery  
Cadastre, Relief Contours and Roads: Landgate 2017  
IRIS Road Network: Main Roads Western Australia 2017  
Overview Map: World Topographic map service, ESRI 2012

**CLIENT**  
D V Faming Co  
Lot 1857 (No. 653) Monjebup Road  
Monjebup, WA 6338

**Desktop Vegetation Mapping**

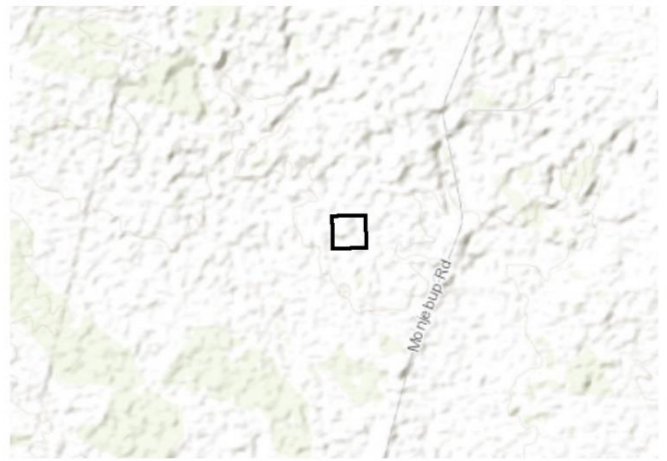
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STATUS <b>FINAL</b>	FILE <b>MSC0444</b>	DATE <b>11/08/2021</b>



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Albany, WA 6330  
(08) 9842 1575

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(08) 9848 1309

Esperance Office: 2A/113 Dempster Street  
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Overview Map Scale 1:100,000

**Legend**

- Extraction Area
- Vegetation Units**
- Veg Unit A
- Veg Unit B



Scale  
1:1,250 @ A3  
GDA MGA 94 Zone 50

**Data Sources**  
Aerial Imagery: WA Now, Landgate Subscription Imagery  
Cadastre, Relief Contours and Roads: Landgate 2017  
IRIS Road Network: Main Roads Western Australia 2017  
Overview Map: World Topographic map service, ESRI 2012

**CLIENT**  
D V Farming Co  
Lot 1857 (No. 653) Monjebup Road  
Monjebup, WA 6338

**Native Vegetation Mapping**

	QA Check <b>KK</b>	Drawn by <b>BT</b>
STATUS <b>FINAL</b>	FILE <b>MSC0444</b>	DATE <b>11/08/2021</b>

## **Appendix C**

### **Bushfire Mapping**

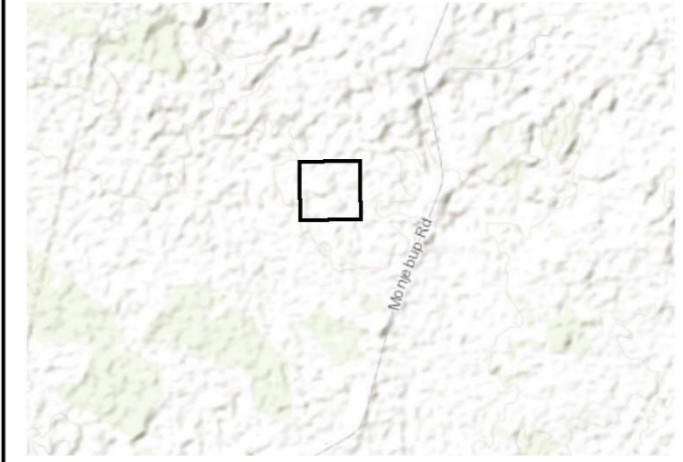




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Albany, WA 6330  
(08) 9842 1575

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(08) 9848 1309

Esperance Office:  
2A/113 Dempster Street  
Esperance, WA 6450  
(08) 9072 1382



Overview Map Scale 1:100,000

**Legend**

- Subject Site
  - 100m Assessment Boundary
  - 150m Assessment Boundary
  - Cadastre
  - Slopes Degrees
  - 2m Contours
  - Future Low Fuel
  - Vegetation/Plot Boundary
- Vegetation**
- Forest Type A
  - Grassland Type G
  - Low fuel or non vegetated 2.2.3.2



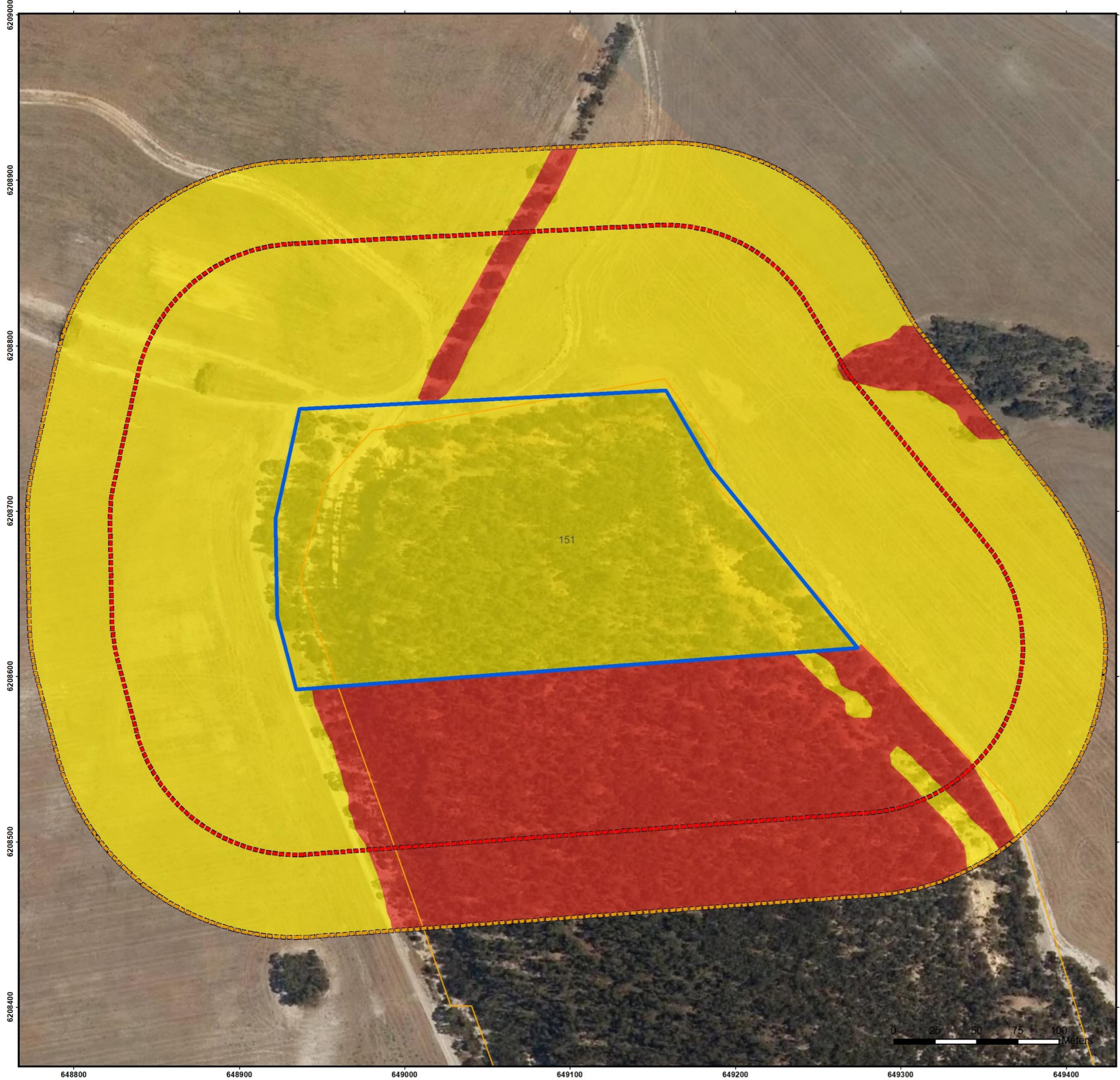
Scale  
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GDA MGA 94 Zone 50

**Data Sources**  
Aerial Imagery: WA Now, Landgate Subscription Imagery  
Cadastre, Relief Contours and Roads: Landgate 2017  
IRIS Road Network: Main Roads Western Australia 2017  
Overview Map: World Topographic map service, ESRI 2012

**CLIENT**  
D V Farming Co  
Lot 1857 (No. 653) Monjebup Road  
Boxwood Hill WA 6338

**Vegetation Classes**

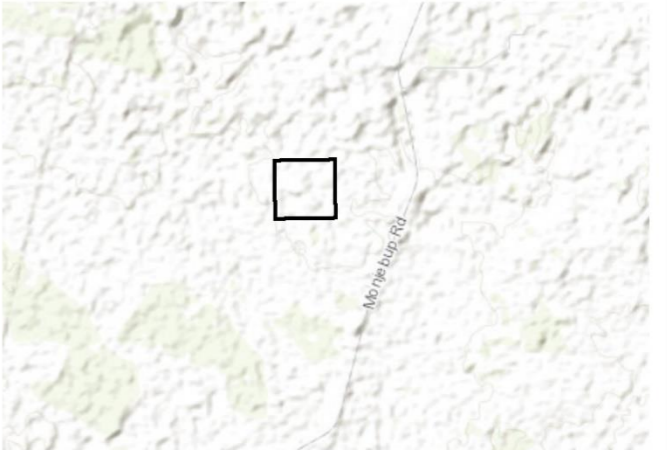
BAL Assessor <b>KK</b>	QA Check <b>BT</b>	Drawn by <b>CV</b>
STATUS <b>FINAL</b>	FILE <b>MSC0444</b>	DATE <b>15/07/2021</b>



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Albany, WA 6330  
(08) 9842 1575

Denmark Office:  
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Denmark, WA 6333  
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Esperance Office:  
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Esperance, WA 6450  
(08) 9072 1382



Overview Map Scale 1:100,000

**Legend**

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre
- Bushfire Hazard Level**
- Extreme
- Moderate



Scale  
1:2,250 @ A3  
GDA MGA 94 Zone 50

**Data Sources**  
Aerial Imagery: WA Now, Landgate Subscription Imagery  
Cadastral, Relief Contours and Roads: Landgate 2017  
IRIS Road Network: Main Roads Western Australia 2017  
Overview Map: World Topographic map service, ESRI 2012

**CLIENT**  
D V Farming Co  
Lot 1857 (No. 653) Monjebup Road  
Boxwood Hill WA 6338

**Bushfire Hazard Level Post Development**

BAL Assessor <b>KK</b>	QA Check <b>BT</b>	Drawn by <b>CV</b>
STATUS <b>FINAL</b>	FILE <b>MSC0444</b>	DATE <b>15/07/2021</b>

## **Appendix D**

### Amendment to 'Agreement to Reserve'



Department of  
**Primary Industries and  
Regional Development**

Our Ref: 040533V01  
Enquiries: Monica Coates  
Telephone: 9368 3282  
Date: 19 February 2021

Mr Peter Ruland  
16 Anchorage Vista  
ALBANY WA 6330

Dear Mr Ruland

**REQUEST TO VARY AGREEMENT TO RESERVE ON LOT 151 ON DEPOSITED PLAN 49854 ON THE CERTIFICATE OF TITLE VOLUME 2658, FOLIO 898. MEMORIAL K082472**

I refer your request to vary the Agreement to Reserve dated 6 February 2007, in respect of areas of land within Lot 151 On Deposited Plan 49854 on the Certificate Of Title Volume 2658, (formerly Lot 1857 on Deposited Plan 209448), which were set aside for the purpose of protection and management of vegetation in accordance with section 30B of the *Soil and Land Conservation Act 1945 (WA)* (**the ATR**).

Specifically, you are seeking to amend the ATR to release an area of land of approximately 5 hectares from the ATR marked in purple as shown on the attached plan (**specified land**) (see **Attachment 1**).

I understand that you are seeking to release the specified land from the obligations of the ATR in order to extract raw materials from that specified land.

Having considered your request, in this instance, I am willing to exercise my discretion and not enforce the terms of the ATR in relation to that specified land as marked in Attachment 1, subject to the continued use of that specified land for that purpose (i.e. to extract raw materials) or as otherwise being notified by the Commissioner. The ATR shall otherwise remain in full force and effect.

If, alternatively, you still wish to formally vary the ATR to release that area, I would be prepared to consider discharging the ATR and entering into a replacement ATR over the amended area, subject to you agreeing to pay the costs of the required survey, and any other incidental costs that may arise.

Please note that if you accept this proposal, you will need to liaise with the Department of Water and Environmental Regulation to obtain permission to clear the specified land on grounds other than land degradation.

Please contact my office on 9368 3282 or if you would like to discuss this further.

Yours sincerely

Ms Cecilia McConnell  
COMMISSIONER OF SOIL  
AND LAND CONSERVATION

05

**K 82472 MS**

08 Feb 2007 11:18:41 Perth



**MEMORIAL  
DEPARTMENT OF AGRICULTURE AND FOOD**

LODGED BY	DEPARTMENT OF AGRICULTURE AND FOOD
ADDRESS	Locked Bag 4 Bentley Delivery Centre WA 6983
PHONE No.	08 9368 3906
FAX No.	08 9368 3654
REFERENCE No.	040533V01M00
ISSUING BOX No.	999

PREPARED BY	Kevin Denham
ADDRESS	Office of the Commissioner Department of Agriculture and Food Locked Bag 4 Bentley Delivery Centre WA 6983
PHONE No.	08 9368 3906
FAX No.	08 9368 3654

INSTRUCT IF ANY DOCUMENTS ARE TO ISSUE TO OTHER THAN LODGING PARTY.

$\frac{2}{4}$
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TITLES, LEASES, DECLARATIONS ETC. LODGED HEREWITH

1. Agreement to Reserve	Received Items
2.	Nos
3.	Receiving Clerk
6.	<i>[Signature]</i>

EXAMINED
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Registered/Lodged pursuant to the provisions of the TRANSFER OF LAND ACT 1893 as amended on the day and time shown above and particulars entered in the Register.



FORM APPROVAL NO. B4813

## MEMORIAL

### SOIL AND LAND CONSERVATION ACT 1945 AS AMENDED AGREEMENT TO RESERVE & CONSERVATION COVENANT PART 1V A

DESCRIPTION OF LAND	EXTENT	VOLUME	FOLIO
<b>Kent Location 1857, Lot 1857 on Deposited Plan 209448 being part of the land described on the Certificate of Title Volume 2073 Folio 99, as delineated cross-hatched in orange in the attached plan.</b>	<b>Part</b>	<b>2073</b>	<b>99</b>

#### REGISTERED PROPRIETOR OF LAND

**PETER CHARLES HASSELL AND LISA DIANA HASSELL - BOTH OF 2 DREW LANE, ALBANY - AS JOINT TENANTS IN 2/6 SHARE  
PETER WILLIAM RULAND OF 16 ANCHORAGE VISTA, ALBANY - IN 3/6 SHARE AND PETER CHARLES HASSELL OF 2 DREW LANE, ALBANY - IN 1/6 SHARE AS TENANTS IN COMMON**

The within Instrument dated the **Sixth** day of **February** 20 **07** is:

A) An agreement to reserve or a duplicate or copy thereof under section 30 (b) 1, of the Soil and Land Conservation Act over the Land above described.

OR

B) ~~A Conservation Covenant under section 30 (b) 1, of the Soil and Land Conservation Act over the Land above described.~~

#### Duration of Agreement or Covenant

In Perpetuity or Limited in Time to the day of 20

Dated this **Sixth** day of **February** 20 **07**

Commissioner / Deputy Commissioner  
of Soil and Land Conservation

Witness, an Officer of  
Department of Agriculture and Food

# AGREEMENT TO RESERVE SOIL AND LAND CONSERVATION ACT

**SECTION 30B**

File : 040533V01M00

The registered proprietors, Peter Charles HASSELL, Lisa Diana HASSELL and Peter William RULAND of that land described as Kent Location 1857, Lot 1857 on Deposited Plan 209448 on the Certificate of Title Volume 2073 Folio 99, recognise the value of sound land management practices and the value of protecting areas within the land described on this plan.

The registered proprietors of the land agree that an instrument known as an Agreement to Reserve be entered into in respect of areas of land within Lot 1857 on Deposited Plan 209448 for the purpose of setting aside land for the protection and management of vegetation under Section 30B of the Soil and Land Conservation Act 1945. Accordingly :

We : Peter Charles HASSELL and Lisa Diana HASSELL of 2 Dray Lane ALBANY  
and Peter William RULAND of 16 Anchorage Vista ALBANY  
[Proprietors of the Land]

Agree to retain and protect 80.0 hectares of native vegetation in perpetuity, as shown on this plan as areas cross hatched orange and contained within Lot 1857 on Deposited Plan 209448 and as defined on Deposited Plan 49854 in accordance with the following conditions :

The area of land described above is to be adequately fenced to exclude all classes of livestock and be managed in such a way as to retain and promote the growth of native vegetation.

Within the area of land described above, clearing is permitted for maintenance of existing access tracks, boundary fence lines or firebreaks in accordance with the requirements of any written law.

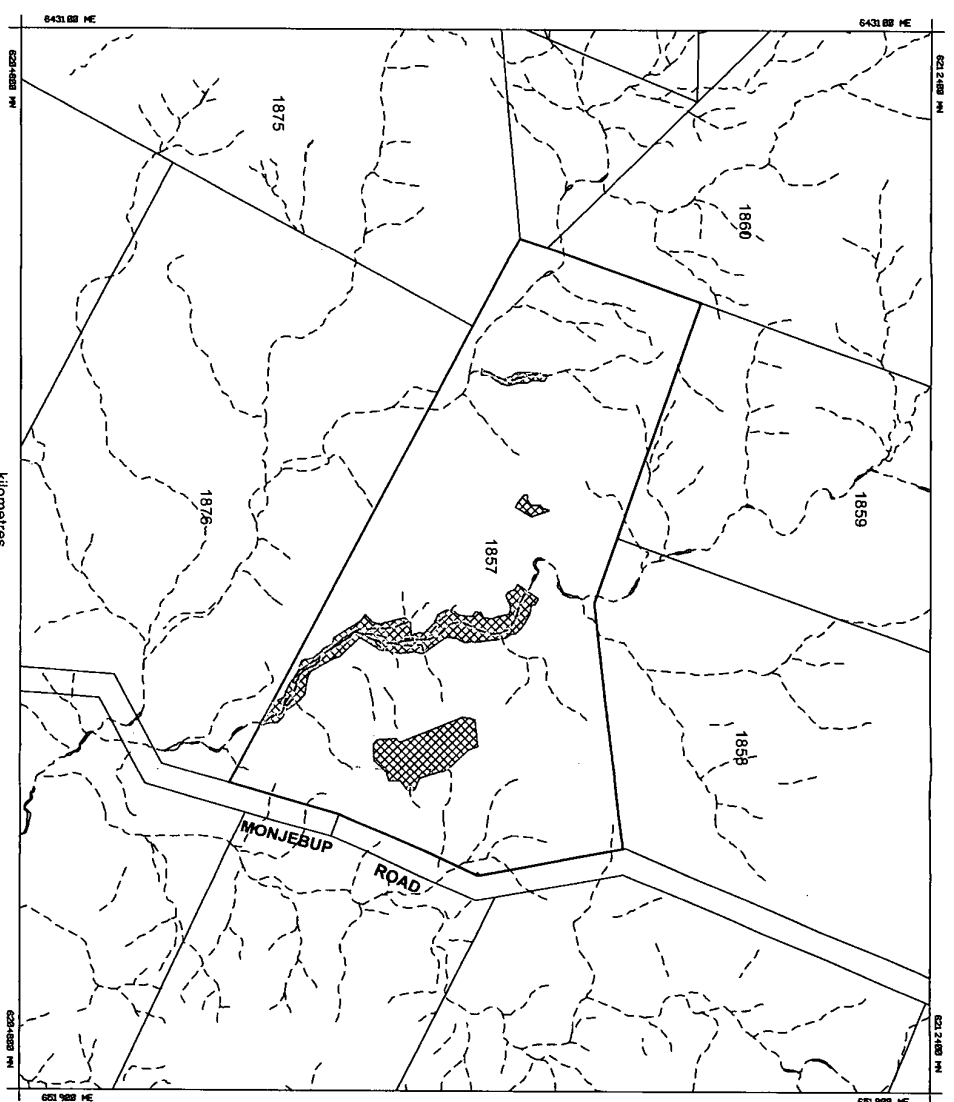
Subject to sections 30B, 30C and 30E of the Soil and Land Conservation Act 1945, this Agreement to Reserve is to have effect in perpetuity.

An Agreement to Reserve registered on Certificate of Title by Memorial binds each person successively becoming a proprietor or occupier of the land.

LANDHOLDER : ..... DATE : 14 / 9 / 2006  
LANDHOLDER : ..... DATE : 20 / 9 / 2006  
LANDHOLDER : ..... DATE : 20 / 9 / 2006

*[Signatures]*

Commissioner of Soil and Land Conservation ..... DATE : 6 / 2 / 2007



**LEGEND:**

- AREA TO BE RETAINED AND PROTECTED AS NATIVE VEGETATION : 80.0 ha, 7.2%
- EXISTING INTERNAL FENCING
- SURVEYED INTERNAL BOUNDARIES
- ROADS
- WATERWAYS
- DAMS

**SCALE 1:40 000**

AREA OF KENT LOT 1857 - 1108.85 ha

0 1 2 3 4  
kilometres

**NOTE 1:** ALL MEASUREMENTS AND AREAS ARE ONLY APPROXIMATE AND SUBJECT TO ON-SITE ASSESSMENT BY A LAND CONSERVATION OFFICER FROM MARIKULTRA W. A.

2. DIGITIZER SET UP AVERAGE ERROR - NIL
3. DATA CAPTURE SCALE OF COORDINATE 1 : 5 000
4. CAPTURE SCALE OF VEGETATION 1 : 1 25 000
5. DETAILS OF Aerial PHOTOGRAPHY ORTHOPHOTO AERIAL CHEMICAL 2828, PALLIUM, 2827, JAN, 2004
6. DM94 ZONE - 56, 847388 M, 623888 M

DRAWN BY : ..... DATE : 04/08/2006  
CHECKED BY : ..... DATE : 06/08/2006

05H955SP, ATR 15 JUNE, 2006 FILE NO 040533V01 M00

# AGREEMENT TO RESERVE SOIL AND LAND CONSERVATION ACT SECTION 30B

File : 040533V01M00

The registered proprietors, **Peter Charles HASSELL, Lisa Diana HASSELL and Peter William RULAND** of that land described as **Kent Location 1857, Lot 1857 on Deposited Plan 209448** on the Certificate of Title Volume 2073 Folio 99, recognise the value of sound land management practices and the value of protecting areas within the land described on this plan.

The registered proprietors of the land agree that an instrument known as an Agreement to Reserve be entered into in respect of areas of land within Lot 1857 on Deposited Plan 209448 for the purpose of setting aside land for the protection and management of vegetation under Section 30B of the *Soil and Land Conservation Act 1945*. Accordingly :

We : **Peter Charles HASSELL and Lisa Diana HASSELL of 2 Drew Lane ALBANY and Peter William RULAND of 16 Anchorage Vista ALBANY**  
[ Proprietors of the Land ]

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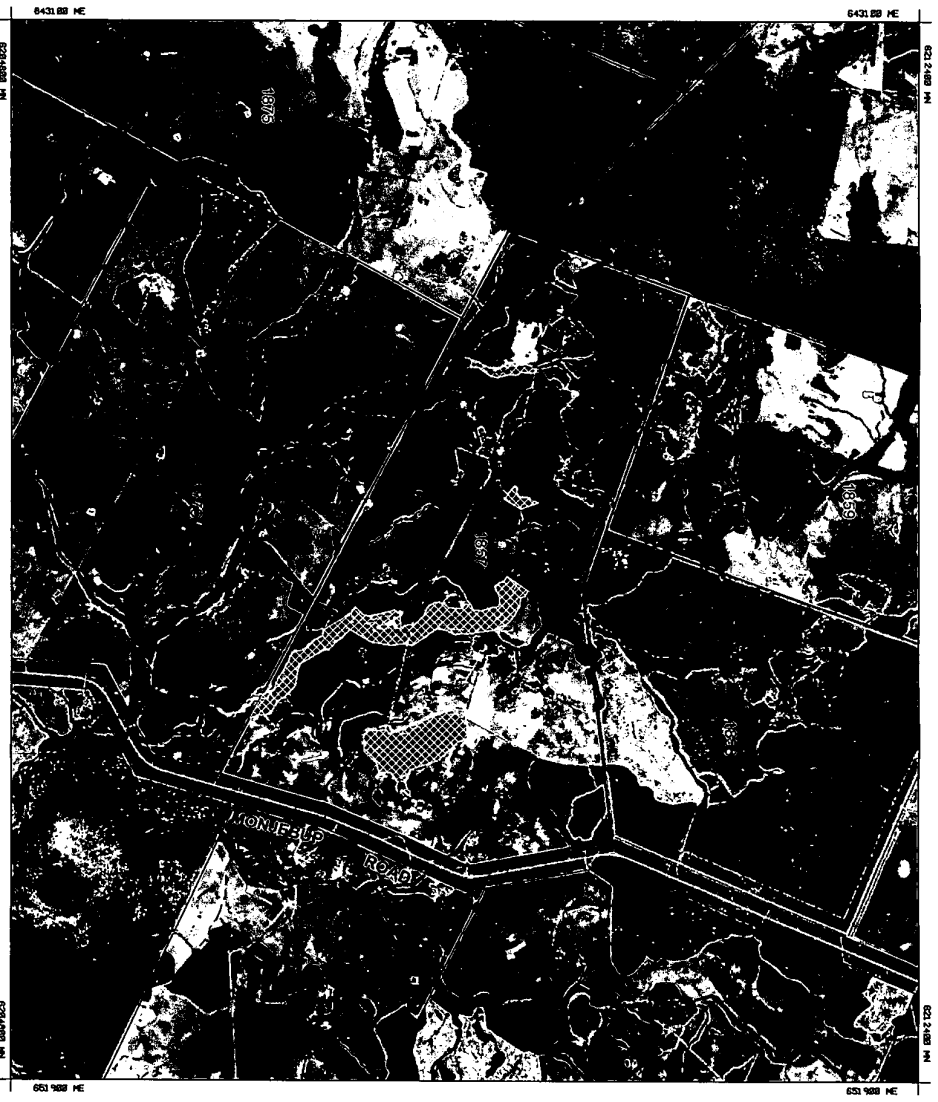
Within the area of land described above, clearing is permitted for maintenance of existing access tracks, boundary fence lines or firebreaks in accordance with the requirements of any written law.

Subject to sections 30B, 30C and 30E of the *Soil and Land Conservation Act 1945*, this Agreement to Reserve is to have effect in perpetuity.

An Agreement to Reserve registered on Certificate of Title by Memorial binds each person successively becoming an owner or proprietor of the land.

LANDHOLDER : ..... DATE : 14 9, 2006  
 LANDHOLDER : ..... DATE : 20 9, 2006  
 LANDHOLDER : ..... DATE : 20 9, 2006

DATE : 6 / 2 / 2007  
 Commissioner of Soil and Land Conservation



- LEGEND:
- AREA TO BE RETAINED AND PROTECTED AS NATIVE VEGETATION : 80.0 ha, 7.2%
  - EXISTING INTERNAL FENCING
  - SURVEYED BOUNDARIES
  - ROADS
  - WATERWAYS
  - DAMS

SCALE 1:40 000  
 AREA OF KENT LOT 1857 - 1108.85 ha



NOTE 1: ALL MEASUREMENTS AND AREAS ARE ONLY APPROXIMATE AND SUBJECT TO ON-SITE ASSESSMENT BY A LAND CONSERVATION OFFICER FROM AGRICULTURE, V. A.  
 2. DOTTED SET UP AVERAGE ERROR - NIL  
 3. DATA CAPTURE SCALE OF CADASTRE 1 : 5 000  
 4. CAPTURE SCALE OF VEGETATION 1 : 25 000  
 5. DETAILS OF AERIAL PHOTOGRAPHY ORTHOPHOTO MOSAIC CHEMEX 2023, FALLINGP. 2627, JAN. 2004  
 6. DAMS ZONE - 56, 847288 NE, 629488 NW  
 DRAWN BY ..... DATE : 04/09/2006  
 CHECKED BY ..... DATE : ..... / 2006  
 05HASSP - ATR 15 JUNE, 2006 FILE NO 040533V01M00