



## Application for Works Approval

### Division 3, Part V *Environmental Protection Act 1986*

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**Works Approval Number** W6207/2018/1

**Applicant** Q Stone Pty Ltd

**ACN** 612 873 177

**File Number** DER2018/001617

**Premises** Potts Road Pegmatite Quarry  
Lot 606 on Plan 142820, Lot 3029 on Plan 203960, Lot 2643  
on Plan 150837 and Road Reserve 11712114, Mount Marshall  
Operations  
WIALKI and WELLBUNGIN WA 6473 and 6477

**Date of Report** 4 September 2019

## 1. Definitions

In this Decision Report, the terms in the Table below have the meanings defined.

Term	Definition
ACN	Australian Company Number
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DMP	Department of Mines and Petroleum
DWER	Department of Water and Environmental Regulation
Emission	has the same meaning given to that term under the EP Act.
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EPBC Act	<i>Environmental Protection Biodiversity and Conservation Act 1999 (Commonwealth)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Risk Event	As described in <i>Guidance Statement: Risk Assessment</i>
Works Approval Holder	Q Stone Pty Ltd

## 2. Classification of premises

Q Stone Pty Ltd (the Applicant) has provided supporting documentation in the form of a “land access agreement” with the landowner and therefore is considered to be the legal **Occupier** of the **Prescribed Premises** for this assessment.

The proposed production throughput exceeds the licence threshold for the proposed Q Stone operation which is a prescribed activity, Category 70, under Schedule 1 of the EP Regulations as described in Table 2 below.

**Table 1: Prescribed Premise Categories**

Classification of Premises	Description	Approved Premises production or design capacity or throughput
Category 70	Screening etc. of material: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated.	Greater than 5,000 tpa and up to 50,000 tpa

Category 70 screening etc. of material is listed in schedule 1 to the EP Regulations relates to the activities of processing materials extracted from the ground by either screening, washing, crushing, grinding, milling, mechanical sizing or separation.. The prescribed category threshold is greater than 5,000 tonnes per year and up to 50,000 tonnes per year. As the application is to process less than 50,000 tonnes of material per year, the emissions and discharges from the operational plant will be assessed to determine the terms and conditions of a works approval and registration.

Mining, free digging, excavating, quarrying, and blasting do not constitute screening etc. of material and therefore do not fall within scope of Category 70. The processing area will contain the crushing and screening plant and therefore will form the category 70 prescribed premises that will be assessed in this **Decision Report**.

### 2.1 Description of proposed activity

Q Stone Pty Ltd (the Applicant) proposes to screen up to 50,000 tonnes per year of Pegmatite material extracted from private farmland, located approximately 29 km north east of Bencubbin and 21 km south east of Beacon in the locality of Wialki and Welbungin in the Shire of Mount Marshall. The extracted material will be crushing and screening to produce a range of aggregates  $\leq 20$  mm dependent upon market demands. Screened material will be stockpiled onsite pending delivery to customers.

No waste products will be generated in the process and all the pegmatite resource will be converted into a saleable product. No chemical additives or reagents will be required, and thus a tailings dam will not be required. If washing of the material occurs then wash water will be recycled and reused on site.

The crushing operation will be conducted by 12 week campaigns which will occur between April and October each year. There will be no permanent infrastructure built onsite other than a shelter/workshop for a front-end loader. The process plant and mobile equipment will be mobilised to site for each campaign. There will be no explosives stored on site and will be transported to site for each blast. No accommodation buildings will be constructed on the site.

There will be portable ablutions placed on site that will be serviced by a local contractor. There will be no permanent fuel storage on site as all fuelling activities will be conducted with the use of a mobile fit for purpose tanker. All hydrocarbons will be stored on appropriate bunded facilities. All hydrocarbon waste will be removed from site and disposed of at an approved

hydrocarbon waste facility, either in Perth or other suitable location. All other waste/rubbish will be removed from site and taken to an approved landfill site.

The infrastructure and equipment are outlined in the table below and the plant layout is shown in Figure 1 and overall quarry layout is shown in Figure 2. The mobile screening and crushing plant will have a design capacity of producing product at a rate of 250 tonnes per hour.

**Table 2: Q Stone Pty Ltd Infrastructure**

Ref	Infrastructure and Equipment	Site Layout Plan Reference (Figure 1)
	Prescribed Activity (Category 70)	
1	Mobile track jaw crusher – 1 x Pegson 1180 Premiertrak Jaw Crusher	Crushing plant
2	Cone crusher – 1 x Pegson 1000 Maxtrak Cone Crusher	Crushing plant
3	Screening circuit – 1x Powerscreen Horizon – 6203 Screen	Screening plant
4	1 x 16/90 stockpiler closed circuit material conveyor; 1 x Edge MS 65 material stacker	Material conveyors
5	Run of Mine working area	Working area
6	1 x Atlas Copco F9 Blast hole drill rig	
7	1 x Volvo EC350 D 36 tonne excavator	N/A – mobile equipment
8	1 x Komatsu WA 500 37 tonne wheel front end loader	
9	Four-wheeled drive ute or service truck	
10	1 x Hino 500 series Water truck -	

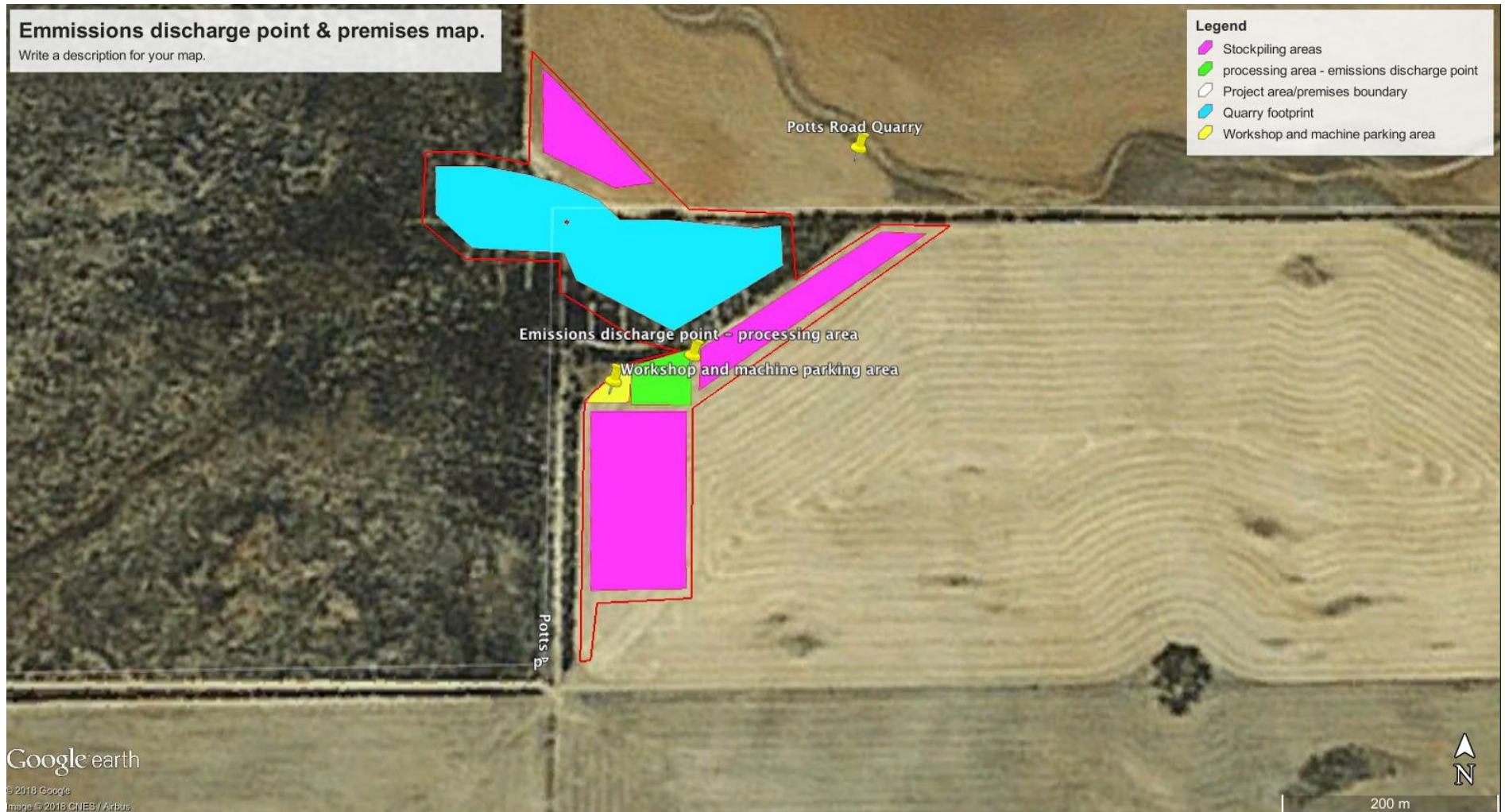
**Figure 1: Plant Layout**

*Image provided as part of works approval supporting documentation*



## Figure 2: Site Layout Plan

Image provided as part of works approval supporting documentation





### 3. Emission sources, pathways and receptors

#### 3.1 Emissions

The potential for emissions to impact on sensitive receptors has been assessed in accordance with the Department's Risk Framework. The key emissions considered in this report are **fugitive dust and noise** from activities including screening equipment placement and use and vehicle movements during construction.

The Applicant has proposed measures to assist in controlling these emissions, where necessary. The control measures have been considered when undertaking the risk assessment detailed in Section 4.

Following completion and compliance with this works approval, a prescribed premises category 70 registration under Part V of the EP Act will be required to authorise emissions associated with the operation of the premises i.e. screening and related activities, including vehicle movements, excavation, loading and unloading and storage of materials. A risk assessment for the operational phase has been included in this Decision Report, however terms and conditions will not be finalised until DWER assesses the registration application.

#### 3.2 Receptors

Risk is assessed as a combination of emission sources, the proximity and sensitivity of receptors to those emission sources and any pathways that can allow the emission to reach and potentially harm the receptor. Figure 3 and 4 plus the table below provides a summary of human and environmental receptors in proximity to the premises and the risk assessment in Section 5 considers these receptors in the context of emissions and potential pathways.

**Table 3: Residential and Environmental Receptors from activity boundary**

Receptor	Distance from Prescribed Premises
<b>Human receptors (597950mE – 6614929mN)</b>	
Freehold house (Lot 21)	Approximately 5.8km west southwest of the crushing and screening operations
Bencubbin town	Approximately 28.7 km south west of operations
Beacon town	Approximately 21.3 km north west of operations
<b>Environmental receptors</b>	
Federal Native Title Claim (Marlinyu Ghoorlie)	Primary activity is located within the claim area.
Avon Wheatbelt Interim Biographic Regionalization of Australia (IBRA) bioregion.	Primary activity is located within a privately owned remnant of approximately 125 Ha, which is located approximately 100 metres west of larger remnant including the Danjinning Nature Reserve. The gap between remnants does not bring about a significant barrier to the dispersal of fauna species, seed and genetic material.
Avon River Catchment.	Primary activity is located within a RIWI Act proclaimed area.
Water courses, wetlands and groundwater	No watercourses or wetlands are located within the application area. The pit excavation below the water table is not proposed.
Fauna species including the priority malleefowl ( <i>Leipoa ocellata</i> ) may exist.	The application area together with the adjoining vegetation is likely to contain a high level of biological diversity. Activity area contains suitable foraging and dispersal habitat for fauna including the priority fauna

	(malleefowl). No other priority fauna species have been recorded within the local area.
Threatened ecological community (TEC).	'Eucalypt Woodlands of the Western Australian Wheatbelt' have been mapped throughout the local area. This vegetation community is listed as critically endangered under the Commonwealth EPBC Act 1999, however the key diagnostic characteristic did not meet the minimum size criteria therefore area where the Primary Activity is to occur is not considered to be the TEC.

### 3.3 Pathways

As fugitive dust and noise are considered potential emissions, the prevailing wind direction has been considered. Using information available on the Bureau of Meteorology's website (February 2019), the closest available weather station for climate data is Bencubbin (No. 010007). Based on the climate data for Bencubbin station (January 1912 to February 2019), the prevailing wind direction is easterly and the design rainfall Intensity, Frequency and Duration (IFD) for a 2 hour, 1 in 10 year event is 32.2mm and the mean rainfall per year is 314.4mm.

Sediment movements from surface run-off across the site may cause an increase in suspended solids in the Avon Catchment, resulting in turbidity and sedimentation. Contamination may also occur if sediments come into contact with contaminants and/or natural processes result in pH changes, releases of naturally occurring substances such as metals and metalloids plus other geochemical changes. These pathways have been considered in the risk assessment table in Section 5.

## 4. Legislative context and other approvals

Clearing of 3.8 hectares of vegetation by mechanical removal will be undertaken within the quarry footprint as depicted in blue in Figure 2 and defined in the Works Approval schedule 1: maps. The clearing will allow for the extraction of the pegmatite and development of quarry access roads.

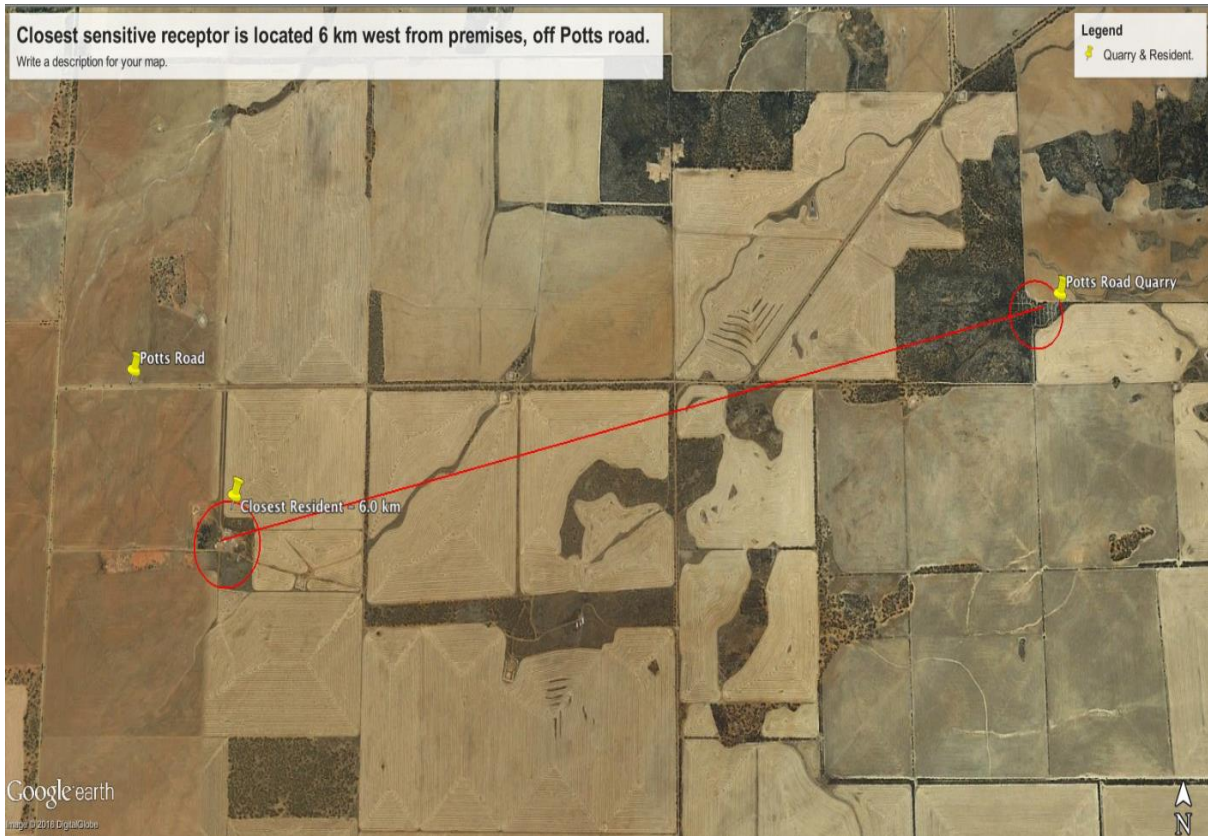
The Applicant requested that clearing be assessed concurrently with this Works Approval application. The clearing assessment is enclosed in Appendix 3 and clearing conditions 10 to 16 of the Works Approval.

Other than placement of screening equipment and associated machinery, portable workshop, demountable building and a portable toilet, no other works are proposed under this application.

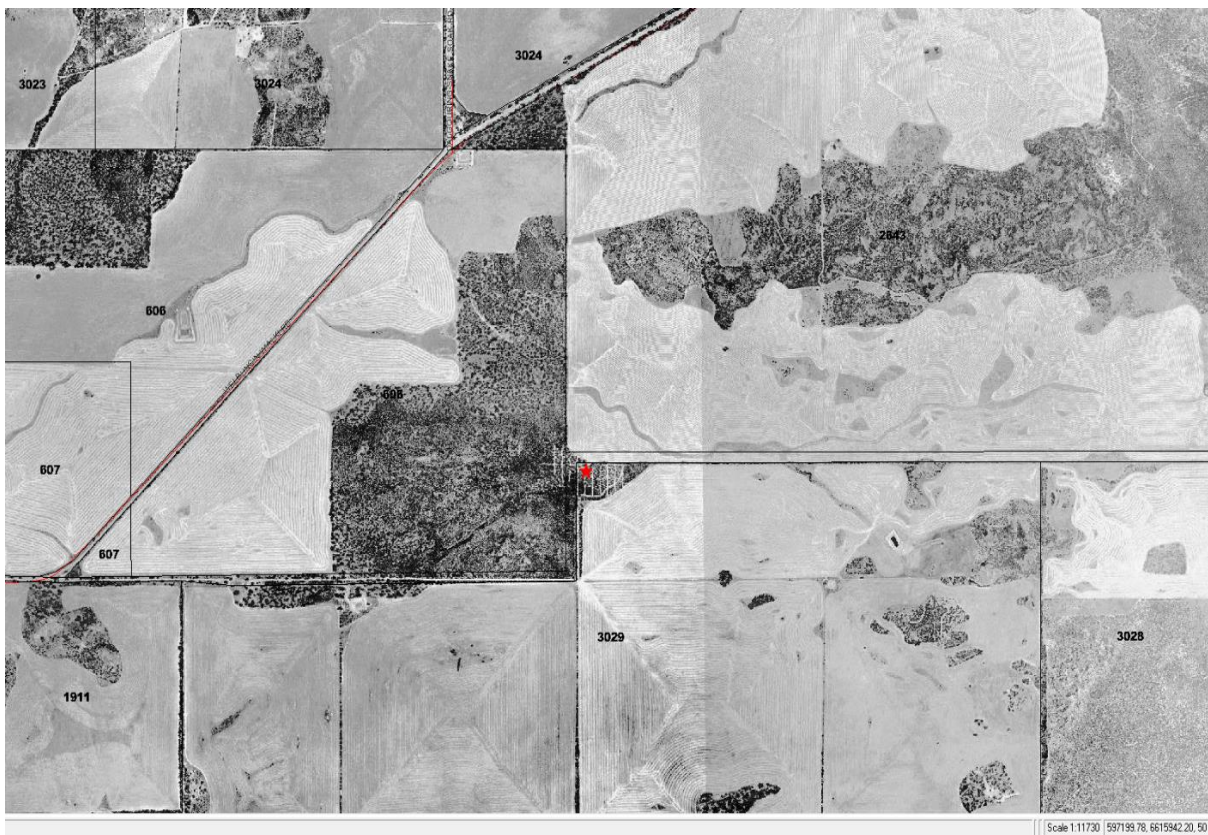
Approvals relevant to the premises are outlined in the table below.

**Table 4: Relevant approvals**

Legislation	Number	Approval
<i>Environmental Protection Act 1986</i>	CPS8324/1	Assessment to clear 3.8 hectares of native vegetation - See Appendix 2
<i>Mining Safety and Inspection Act 1994 &amp; Regulations 1995</i>	PM-729-213566 granted 22/09/2016	Project Management Plan satisfies Department of Mines and Petroleum (DMP) Resource Safety requirements reference SGO234266.
<i>Planning and Development Act 2005</i>	DA4-18	The Applicant has provided evidence that the Shire of Mount Marshall granted Development Approval on 21 August 2018 for a term of 15 yrs.



**Figure 3: Distance to closest sensitive receptors**



**Figure 4: Plan showing the extent of the nearby vegetation and land uses.**



## 5. Risk Assessment

Risk ratings have been assessed for each key emission source and take into account potential source-pathway-receptor linkages. The mitigation measures / controls proposed by the Applicant have been considered in determining the risk rating. Emissions during construction and operation have been assessed separately. This is because separate approvals are needed for each. The works approval that accompanies this report authorises construction only. A registration is required to operate the premises.

**Table 5.1 Risk assessment – construction**

Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Place of screener and associated equipment including vehicle movements	Dust	Air/windborne pathway causing impacts to native vegetation and water quality within the Avon River Catchment (within Premises boundary)	Wetting down roads and plant laydown areas in pit and on open farmland using water truck with water sprays bars.	Slight	Unlikely	Low	The minor construction works (equipment placement) are not expected to generate significant dust emissions. The proposed controls are expected to be sufficient at mitigating dust emissions.	N/A
	Noise	Air/windborne pathway causing impacts to health and amenity of closest human receptors (freehold landowner) located 5.8 km from prescribed operations.	No specified controls for noise emissions				The closest human receptors are located a significant distance (5.8km) from the premises and are not in the direction of the prevailing wind.	

\*Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

**Table 5.2 Risk assessment – operation**

Risk Event				Consequence rating*	Likelihood rating*	Risk**	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Excavation activities Screening activities Crushing activities Unloading, loading and storage of material Vehicle movements	Dust	Air/windborne pathway causing impacts to native vegetation and water quality within the Avon River Catchment (within Premises boundary)	Wetting down processing areas, roads and stockpiles using water truck with spray bars and water cannons. Shot rock will be wet down prior to blasting. Water sprays installed on plant transfer points Crushing circuit installed on cleared farmland. Primary crusher circuit located in base of the pit.	Minor	Unlikely	Low	This receptor is within the Premises boundary however when the sand is extracted, it is damp from the creek bed and unlikely to generate significant dust emissions.  The proposed controls are expected to be sufficient at mitigating dust emissions during operations.	Nil  The operation is reliant upon customer demand for the product and, will be conducted in 12 week campaigns commencing April till October each year therefore fugitive dust is unlikely to escape the Premises.  The Noise Regulations operate as a prescribed standard under the EP Act  In addition, the Applicant must take all reasonable measures to prevent or control noise emissions under s51 (b) of the EP Act, even if they comply with the Noise Regulations  DWER therefore considers dust and noise is adequately addressed by the Applicant.
		Air/windborne pathway causing impacts to health and amenity of closest human receptors (freehold landowner) located 5.8 km from prescribed operations.	Dust skirts and covers (where feasible) on processing equipment.  Material conveyors located low to ground (3.5m) and close distances maintained between transfer points.  Speed limits restricted to reduce emissions.				The closest human receptors is located a significant distance (5.8km) from the prescribed activities and is not in the direction of the prevailing wind.  The proposed controls are expected to be sufficient to mitigating noise emissions during operations.	
	Noise	Equipment and machinery fitted with mufflers and baffles and routinely maintained.  Primary Crusher circuit located in base of the pit.						

Risk Event				Consequence rating*	Likelihood rating*	Risk**	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Processing and storage of material	Sediment	Overland runoff causing impacts to surface water quality of Avon River Catchment (within premises boundary) from an increase in of suspended solids resulting in turbidity and sedimentation and associated riparian flora and fauna.	<p>Wetting down processing areas, roads and stockpiles using water truck with spray bars and water cannons.</p> <p>Water sprays installed on plant transfer points</p> <p>Crushing circuit installed on cleared farmland.</p> <p>Primary crusher circuit located in base of the pit.</p> <p>Dust skirts and covers (where feasible) on processing equipment.</p> <p>Material conveyors located low to ground (3.5m) and close distances maintained between transfer points.</p> <p>Given the low mean annual rainfall in this locality runoff will be at a minimum.</p> <p>Surface water directed to detention sumps within Premises that are designed to capture a 1 in 10 year 2 hour rainfall event (32.2mm).</p> <p>Earthen bunds surrounding processing and storage areas</p>	Minor	Unlikely	Low	<p>Applicant controls are suitable for limiting sediment release and runoff.</p> <p>The Premises design will ensure surface water runoff is directed to detention sumps that are adequately sized to contain the runoff.</p> <p>All collected surface water is contained on the premises, and either reused when required or evaporated when in abundance.</p> <p>Mean annual rainfall is 314.4mm per year with evaporation greater than 1200mm.</p> <p>DWER therefore considers off-site impacts from contaminated surface water runoff would only occur in exceptional circumstances.</p>	<p>Nil</p> <p>The operations is reliant upon customer demand for product and will be conducted in 12 week campaigns commencing April till October each year.</p> <p>The operation is reliant upon customer demand for the product and, will be conducted in 12 week campaigns commencing April till October each year therefore contaminated runoff is unlikely to escape the Premises.</p>

\*The works approval that accompanies this Report authorise construction only. A registration is required for operations.

\*\*Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

## 6. Consultation

**Table 6: Direct Interest Public Authority comments**

Method	Comments received	DWER response
On 18 February 2019 the Application was advertised in newspaper and DWER website.	No submissions received.	N/A
Direct interest stakeholders notified	Shire of Mount Marshall approved Development on 21 August 2018 with 2 year substantial commencement clause and valid for 15 years to 21 August 2033.	The term of the Works Approval will reflect the Development Approval term of 15 years.
Applicant notified of draft	Draft sent to Applicant on 30 August 2019.  Applicant confirmed Works Approval term will match Development Approval term of 15 years from 21 August 2018.	Works Approval expiry date set as 21 August 2033.

## 7. Conclusion

The assessment of the risks of the primary activities at the prescribed premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this decision report (summarised in Appendix 2).

Based on the assessment, it is determined that a Works Approval will be granted subject to conditions commensurate with the management controls, administration and reporting requirements. The Works Approval is included in Appendix 4.

DWER notes that it may review the appropriateness and adequacy of conditions at any time and that, following such a review, DWER may initiate amendments to the works approval under the EP Act.

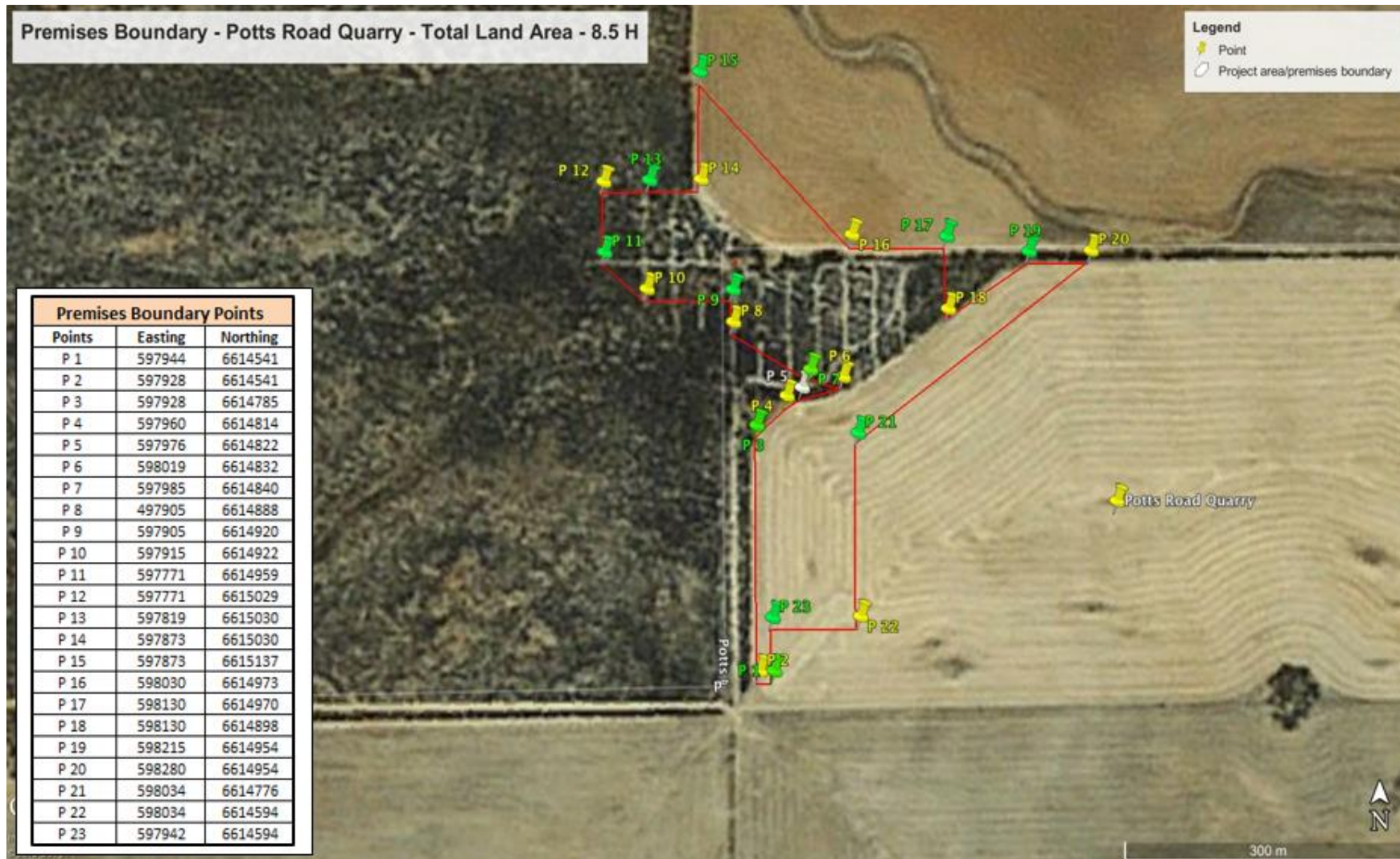
This assessment also determined that a Registration will be granted given the controls to be implemented by the Applicant following confirmation of the reporting requirements conditioned in the Works Approval.

**Tim Gentle**  
**Manager – Resource Industries**  
**REGULATORY SERVICES**

Delegated Officer  
 Under section 20 of the *Environmental Protection Act 1986*



## Appendix 1: Premises map



## Appendix 2: Key Documents

Document title	Availability
Works Approval (W6183/2018/1) application form and supporting documentation (23 October 2018)	DWER records (A1731683, A1751599 to A1751607)
Email from John Guthrie of 11 February 2019 explaining the Category 70 process plant specifications	DWER record A1804434
DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	
DER, August 2016. <i>Guidance Statement: Licence duration</i> . Department of Environment Regulation, Perth.	
DER, February 2017 <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	
DER, February 2017. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.	

# Appendix 3: Clearing Assessment



### 1. Application details

#### 1.1. Permit application details

Permit application No.: 8324/1  
Permit type: Works Approval / Registration Assessment

#### 1.2. Applicant details

Applicant's name: Q Stone Pty Ltd

#### 1.3. Property details

Property: Lot 606 on Plan 142820, Wialki  
Lot 3029 on Plan 203960, Welbungin  
Lot 2643 on Plan 150837, Wialki  
Road reserve - 11712114, Welbungin  
Local Government Authority: Mount Marshall, Shire of  
Localities: Wialki and Welbungin

#### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.8	-	Mechanical Removal	Extractive industry

#### 1.5. Site Information

Clearing Description	The application is to clear 3.8 hectares of native vegetation for the purpose of mineral extraction (Figure 1).
Vegetation Description	<p>One Beard vegetation association is mapped within the application area, 551, which is described as shrublands; <i>Allocasuarina campestris</i> thicket (Shepherd et al. 2001).</p> <p>The flora and vegetation survey (Natural Area 2018) found two vegetation types within the application area:</p> <ul style="list-style-type: none"> <li>Allocasuarina Shrubland: <i>Allocasuarina acutivalvis</i> over <i>Melaleuca radula</i> and mixed sparse shrubs and an understorey of <i>Neurachne alopecuroidea</i>; and</li> <li>Eucalyptus Woodland: <i>Eucalyptus salubris</i> over <i>Acacia acuminata</i> and <i>Melaleuca stereophloia</i> Shrubland and a very sparse understorey of <i>Borya sphaerocephala</i> and <i>Neurachne alopecuroidea</i>.</li> </ul> <p>The Allocasuarina Shrubland was the most widespread vegetation type within the application area, with Eucalyptus Woodland restricted to small patches. A larger representation of Eucalyptus Woodland was found 100 metres to the north of the application area (Natural Area 2018).</p>
Vegetation Condition	<p>Vegetation condition within this assessment has been assessed using the vegetation condition scale developed by Keighery (1994). All references to vegetation condition throughout this assessment therefore, reference this scale.</p> <p>The flora and vegetation survey (Natural Area 2018) found the application area to be in a good to very good condition, described as:</p> <ul style="list-style-type: none"> <li>Good: Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it; and</li> <li>Very Good: Vegetation structure altered, obvious signs of disturbance.</li> </ul>
Soils	Tandegin, Yelbeni subsystem (258TaYE) described as gently undulating sandplain plain, in the central Zone of Ancient Drainage, with yellow sandy earth (occasionally acid), yellow deep sand, gravel and pale deep sand; Heath, shrubland and mallee scrub.
Comment	<p>The local area is defined as a 10 kilometre radius measured from the perimeter of the application area.</p> <p>The condition of the vegetation within the application area was determined from a Flora and Vegetation assessment undertaken by Natural Area (2018) and digital aerial imagery.</p> <p>A previous application for clearing 5 ha of native vegetation within a 10 ha clearing area was received on 1 August 2016 (CPS 7212/1). This application was withdrawn on 18 January 2018 whilst further survey data was collected.</p>





Figure 1: Application area shown in blue

## 2. Avoidance and minimisation

The previous application (CPS 7212/1) for 5 ha of clearing has been reduced to 3.8 ha of native vegetation for this application (CPS 8324/1).

## 3. Assessment of application against clearing principles

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001). The local area (10 kilometre radius around the application area) is extensively cleared with approximately 15 per cent (9,750 hectares) vegetation remaining and the mapped beard vegetation association retains approximately 20 per cent native vegetation (Government of Western Australia 2018). As the local area and vegetation association are below the recommended 30 per cent threshold, the proposed clearing is considered to be a significant remnant within a highly cleared landscape, and the proposed clearing is at variance to this Principle (e). To mitigate impacts to clearing within an extensively cleared landscape, the applicant will be required to rehabilitate the area after mining has been completed.

The application area is located within a privately-owned remnant of approximately 125 hectares, which is located approximately 100 metres west of a larger remnant that includes the Danjinning Nature Reserve and an area subject to a conservation covenant. Molloy et al. (2009) found that "while gaps in vegetation will, to some degree, compromise the capacity of flora and fauna species to persist, where the cleared gap between patches is less than 100 metres those impacts will be limited in that such a gap does not bring about a significant barrier to the dispersal of many fauna species, seed and other genetic material". Given this, the application area is likely to be ecologically synonymous with the larger remnant. As the greater the remnant size, the greater its capacity to maintain a larger more viable suite of species (Molloy et al. 2009), the application area together with the adjoining vegetation is likely to contain a high level of biological diversity within the local area.

The flora survey undertaken by Natural Area (2018) indicated that a species recorded during the survey has the potential to be the Priority 3 *Leucopogon* sp. Yanneymooring (F. Molleman 3797). The survey was undertaken outside of the flowering season and the presence of the species was therefore not confirmed. DBCA (2019) advised that, in the Shire of Mt Marshall, there are no species of Ericaceae that could reasonably be confused with *Leucopogon* sp. Yanneymooring (F. Molleman 3797). Therefore, DWER considers this species is present within the application area. DBCA (2019) noted that due to the relatively small proposed clearing area, the clearing would not result in a significant impact to the *Leucopogon* sp. Yanneymooring (F. Molleman 3797). If further area is considered for development, a flora survey is recommended for the additional area which should include confirmation of the occurrence of *Leucopogon* sp. Yanneymooring (F. Molleman 3797) and the likely local impact. No other threatened or priority flora species were recorded within the application area (Natural Area 2018)

Considering the application area is likely to be ecologically synonymous with the larger remnant and is considered to contain the Priority 3 species *Leucopogon* sp. Yanneymooring (F. Molleman 3797), the proposed clearing may be at variance to Principle (a). However, as the proposed clearing is not likely to affect the viability of the adjoining vegetation or affect the movement of fauna and flora between remnants, the vegetation within the application area is not likely to be significant for maintaining the broad



ecological value of the larger remnant. Weed management practices will assist in mitigating impacts to vegetation located adjacent to the application area.

The 'Eucalypt Woodlands of the Western Australian Wheatbelt' threatened ecological community (TEC) has been mapped throughout the local area. This TEC is listed as critically endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and is also listed as Priority 3 Priority Ecological Community (PEC) by DBCA. This TEC is known to occur approximately 100 meters north of the application area. Natural Area (2018) found that vegetation characteristics of the TEC/PEC are present within the application area, however, the areas which met the key diagnostic characteristics did not meet the minimum size criteria to be deemed to be patches of the TEC/PEC. This conclusion is supported by the DBCA (2019) and therefore the application area is not considered to be representative of this TEC/PEC. No other TEC/PEC were recorded within the application area (Natural Area 2018).

The application area is likely to be ecologically synonymous with the larger remnant and is likely to contain a high level of fauna diversity within the local area. However, the vegetation within the application area is not likely to be significant in the maintenance of the ecological values of the larger remnant. One threatened fauna species, malleefowl (*Leipoa ocellata*), has been recorded within the local area with multiple records of this species recorded within the large remnant of vegetation (DBCA 2007-). The malleefowl occurs in shrublands and low woodlands that are dominated by mallee vegetation, and require a sandy substrate and abundance of leaf litter to build mounds for roosting purposes (DotEE, 2015). Noting the mapped vegetation types and presence of adjoining vegetation, the application area is likely to contain suitable foraging and dispersal habitat for this species; however, given the presence of rocky substrate, the vegetation within the application area is not likely to contain suitable nesting habitat for this species. No Priority fauna species have been recorded within the local area.

No watercourses or wetlands are mapped within the application area. Although the Tandegin Yelbeni land sub system has been mapped with a high subsurface acidification risk (Schoknecht et al. 2004), excavation below the water table is not proposed (Q Stone 2018). Given this, the proposed clearing is not likely to deteriorate ground water or surface water quality, cause or exacerbate land degradation or exacerbate the intensity of flooding.

Given the above, the proposed clearing may be at variance to Principle (a), is at variance to Principle (e), and is not likely to be at variance to the remaining clearing Principles.

The applicant has stated that the vegetation removed will be stockpiled for regeneration of the site as the ore body is mined out (Q Stone 2018). The proposed clearing area is to be revegetated with local provenance sourced tube stock or seed and with a composition reflecting the local vegetation types present on site (Natural Areas 2018). Considering the area is classified as a significant remnant within a highly cleared landscape, the proposed revegetation will assist in mitigating the loss of vegetation within a highly cleared landscape.

#### **4. Recommendation**

##### **Recommendation**

An assessment of the environmental impacts of the proposed clearing has been undertaken in accordance with DWER's Regulatory Principles, taking into consideration the clearing principles contained in Schedule 5 of the *Environmental Protection Act 1986* (EP Act). Section 62(1) of the EP Act provides for conditions to be placed on a works approval to prevent, control, abate or mitigate pollution or environmental harm. Recommended conditions are as follows:

##### **1. Clearing authorised**

The works approval holder shall not clear more than 3.8 hectares of native vegetation within the area cross-hatched yellow on attached Plan 8324/1.

##### **2. Weed control**

When undertaking any clearing or other activity authorised under this works approval, the works approval holder must take the following steps to minimise the risk of the introduction and spread of weeds:

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

##### **3. Retain vegetative material and topsoil, revegetation and rehabilitation**

The works approval holder shall:

- (a) retain the vegetative material and topsoil removed by clearing authorised under this works approval and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) at an *optimal time* following completion of the extractive industry, *revegetate* and *rehabilitate* the areas that are no longer required for the purpose for which they were cleared under the works approval by:
  - (i) re-shaping the surface of the land so that it is consistent with the surrounding five metres of uncleared land;
  - (ii) ripping the ground on the contour to remove soil compaction;
  - (iii) ripping the pit floor and contour batters within the extraction site; and
  - (iv) laying the vegetative material and topsoil retained under condition 3(a) on the cleared area.
- (c) within two years of laying the vegetative material and topsoil on the cleared area in accordance with condition 3(b) of this works approval:
  - (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and

- (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 3(c)(i) of this works approval will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.
- (d) where additional planting or direct seeding of native vegetation is undertaken in accordance with condition 2(c)(ii) of this works approval, shall repeat condition 2(c)(i) and 2(c)(ii) within 24 months of undertaking the additional *planting* or *direct seeding* of native vegetation.
- (e) where a determination by an *environmental specialist* that the composition, structure and density within areas *revegetated* and *rehabilitated* will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 2(c)(i) and 2(c)(ii) of this works approval, submit that determination for the CEO's consideration. If the CEO does not agree with the determination made under condition 2(c)(ii), the CEO may require the works approval holder to undertake additional planting and direct seeding in accordance with the requirements under condition 2(c)(ii).

#### 4. Records

The works approval holder must maintain the following records for activities done pursuant to this works approval:

- (a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Easting and Northings or decimal degrees;
- (b) that date that the area was cleared;
- (c) the size of the area cleared (in hectares);
- (d) actions taken to minimise the risk of the introduction and spread of weeds in accordance with condition 2 of this works approval;
- (e) activities undertaken in relation condition 3 of this work approval:
  - (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
  - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
  - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);
  - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*; and
  - (v) a copy of the *environmental specialist's* report.

#### 5. Reporting

- (a) The works approval holder must provide to the CEO on or before 30 June of each year, a written report:
  - (i) of records required under condition 4 of this works approval; and
  - (ii) concerning activities done by the works approval holder under this works approval between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this works approval was undertaken between 1 January to 31 December of the preceding calendar, a written report confirming that no clearing under this works approval has been carried out, must be provided to the CEO on or before 30 June of each year.
- (c) Within six months of the date of expiry of this works approval, the works approval Holder must provide to the CEO a written report of records required under condition 4 of this works approval where these records have not already been provided under condition 5 (a) of this works approval.

#### DEFINITIONS

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

**Direct seeding** means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.

**Environmental specialist** means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist.

**Local provenance** means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.

**Optimal time** means the period from April to June for undertaking direct seeding, and the period from May to June for undertaking planting.

**Planting** means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.

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

**Revegetate/ed/ion** means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration (re-establishment of vegetation from in situ seed banks and propagating material [such as lignotubers, bulbs, rhizomes] contained within the topsoil), direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

**Weed/s** means any plant -

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



Mathew Gannaway  
MANAGER  
NATIVE VEGETATION REGULATION

29 May 2019

## 5. References

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- Natural Area (2018). Level 2 Flora and Vegetation Survey – Lots 606, 3029 and 2643 Potts Road, Welbungin, Shire of Mount Marshall (DWER Ref: A1758842)
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- Schoknecht, N., Tille, P. and Purdie, B. (2004) Soil-Landscape mapping in South-Western Australia – Overview of Methodology and outputs' Resource Management Technical Report No. 280. Department of Agriculture.
- Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

### GIS datasets

- Conservation estate
- DPIRD Land degradation risk categories
- Pre-European vegetation
- Threatened and Priority ecological communities
- Threatened and Priority flora
- Vegetation extent
- WA Herbarium

## Appendix 4: Works Approval – W6207/2018/1