

Appendix 5

Assessment of Biodiversity Offsetting Obligations

prepared by
Niche Environment and Heritage Pty Ltd

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Nick Warren
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19 January 2018

Via email: nick@rwcorkery.com

**RE: Austen Quarry Stage 2 Extension Project Modification Application – Offsetting obligation (Task 1)
(Niche Ref 3995)**

Dear Nick,

It is understood that Hy-Tec Industries Pty Ltd is proposing a number of modifications (four in total) to approved operations at the Austen Quarry Stage 2 Extension Project (approved on 15 July 2015 under Development Consent SSD 6084) requires. Niche were commissioned by RW Corkery & Co. Pty Ltd (RWC) to assist with one of the proposed modifications, as detailed below:

A modification to the wording of conditions relating to biodiversity offsetting obligations to reflect biodiversity credits only rather than the currently approved biodiversity offset strategy and a modification to biodiversity offsetting requirements commensurate with the proposed reduction in disturbance.

The flora and fauna impacts and offsetting requirements of the Austen Quarry Stage 2 Extension Project was originally assessed by Niche Environment and Heritage Pty Ltd in 2014 (Niche 2014).

The approved boundary of the Stage 2 extraction area and overburden emplacement (approved boundary, as in Niche 2014) and the adjusted final extraction extent and final overburden emplacement (final boundary) are shown in Figure 1. Niche has calculated the vegetation clearing required based on the final boundary in Figure 1 (see Table 1). Table 1 also details a comparison of the vegetation clearing required for the approved boundary with the vegetation clearing required for the final boundary. The final boundary results in a reduced impact footprint in comparison to the approved boundary (Table 1):

- The approved boundary requires a total of 26.5 hectares of direct impacts on native vegetation and an additional 2.5 hectares of indirect impacts (based on a 10 metre buffer area) (Niche 2014), and
- The final boundary requires a total of 24.2 hectares of direct impacts on native vegetation and an additional 2.5 hectares of indirect impacts (based on a 10 metre buffer area).



Table 1: Vegetation clearing required for Austen Quarry Stage 2 Extension Project Modification Application

Vegetation Community Unit (Niche)	Niche Type	Approved Boundary		Final Boundary	
		Direct impact (ha)	Indirect impact (ha)	Direct impact area	Indirect impact area
c1	Brittle Gum – Broad-leaved Peppermint open forest	17.3	1.3	18.1	1.4
c2	Silver-leaved Mountain Gum mallee woodland	-	-	-	-
c3	Forest Red Gum grassy open forest	4.4	0.8	1.9	0.6
c3a	Forest Red Gum native grassland	-	-	-	-
c3b	Forest Red Gum exotic grassland	-	-	-	-
c4	Rough-barked Apple gully forest	-	-	-	-
c5	Stringybark – Apple Box open forest	4.8	0.4	4.2	0.5
c6	River Oak riparian open forest	-	-	-	-
Total		26.5	2.5	24.2	2.5

The offsetting ratios established as part of the Biodiversity Impact Assessment (Niche 2014) have been used in Table 2 and Table 3 to calculate the offsetting obligation with regards to the final boundary. Given the reduced area of impact on native vegetation (Table 1), a reduced number of ecosystem credits are required to offset the impacts of the final boundary in comparison to the approved boundary (Table 2). Further, 20 fewer *Eucalyptus pulverulenta* individuals would be removed (represented by the planted individuals within Rehabilitation Area G), meaning fewer species credits are required to offset the impacts of the final boundary in comparison to the approved boundary (Table 3).

Table 2: Ecosystem credit requirement for Austen Quarry Modification Application

Niche veg type	Vegetation Zone	Approved Boundary		Credits per hectare	Final Boundary	
		Management Zone Number	Credits Required		Management Zone Number*	Credits Required
c1: Brittle Gum - Broad-leaved Peppermint open forest	HN570: Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest	mz1; 17.3 ha direct impact	604	34.91	mz1; 18.1 ha direct impact	632
		mz2; 1.3 ha indirect impact	16		mz2; 1.4 ha indirect impact	17
c5: Stringybark - Apple Box open forest	HN501: Apple Box - Broad-leaved Peppermint dry open forest	mz3; 4.8 ha direct impact	146	30.42	mz3; 4.2 ha direct impact	128
		mz4; 0.4 ha indirect impact	2		mz4; 0.5 ha indirect impact	3
c3: Forest Red Gum grassy open forest	HN527: Forest Red Gum - Yellow Box woodland of dry gorge slopes	mz5; 4.4 ha direct impact	129	29.32	mz5; 1.9 ha direct impact	56
		mz6; 0.8 ha indirect impact	5		mz6; 0.6 ha indirect impact	4
Total			902		840	



Table 3: Species credit requirement for Austen Quarry Modification Application

	<i>Eucalyptus pulverulenta</i> core population	<i>Eucalyptus pulverulenta</i> non-core population	Planted <i>Eucalyptus pulverulenta</i>	Total impact (# individuals)	Credits per individual	Credits required for planted <i>E. pulverulenta</i>	Total species credits required
Approved boundary	0	90	631	721	15.38	9,705	11,092
Final boundary	0	90	611	701	15.38	9,397	10,784

Therefore, the offsetting obligation for the final boundary for the Modification Application for Austen Quarry is as follows:

- Ecosystem credit requirement:
 - 649 HN570 credits
 - 131 HN501 credits
 - 60 HN527 credits
- Species credit requirement:
 - 10,784 *Eucalyptus pulverulenta* species credits.

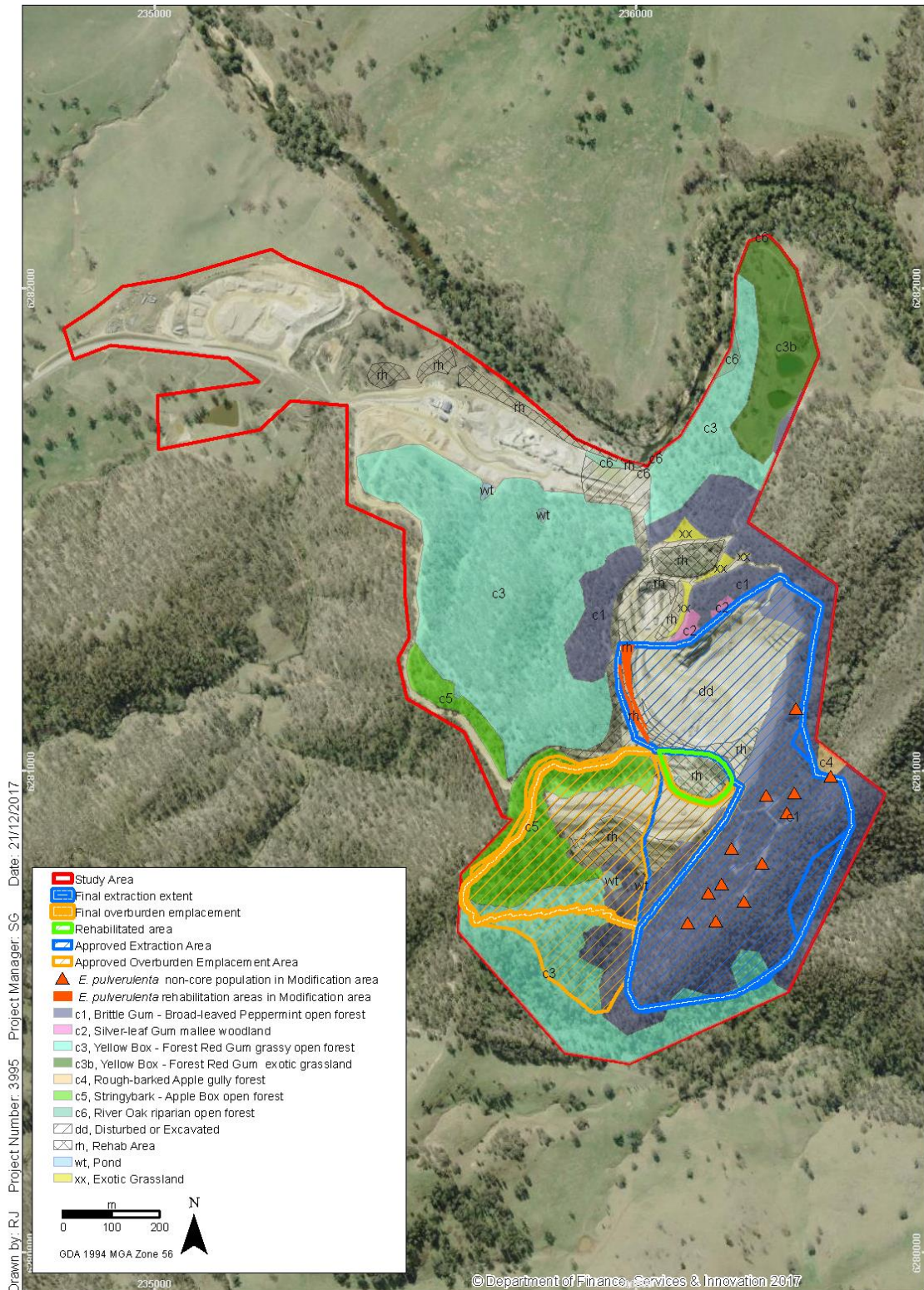
I trust that the information provided is suitably detailed, however, should you require any further information please do not hesitate to contact me.

Yours sincerely,

Sian Griffiths
 Niche Environment and Heritage
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References

Niche (2014), *Biodiversity Impact Assessment for Austen Quarry – Stage 2 Extension Project*, report for RW Corkery & Co.



Native vegetation of Austen Quarry and the Modification Application
 Austen Quarry Modification Application



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FIGURE 1
 Imagery (c) LPI 2013-09-03