APPENDIX B

Lot 5 Wellesley Road, Rehabilitation Management and Monitoring Plan

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REHABILITATION MANAGEMENT & MONITORING PLAN

Prepared for Carbone Bros
On Lot 5 Wellesley Road, Wellesley,
Shire of Harvey

1. INTRODUCTION

This Rehabilitation Management and Monitoring Plan (RMMP) has been prepared to detail the measures to be undertaken post-extraction to rehabilitate the land impacted by the proposed EIL operations (Stage 10) on Lot 5, Wellesley Road, Wellesley. This RMMP should be read in conjunction with the report entitled "*Extractive Industries Licence Application and Environmental Management Plan (EMP); Lot 5, Wellesley Road, Wellesley, Shire of Harvey*", prepared in November 2023 for Carbone Bros Pty Ltd by Lundstrom Environmental Consultants Pty Ltd.

2. SITE BACKGROUND

2.1 Property Description and Ownership

Locality: Lot 5 Wellesley Road, Wellesley, Shire of Harvey
Ownership: Lyndon Edwards

Figure 1 shows the property shows the property, its surrounds and the proposed extraction, rehabilitation and offset areas.

2.2 Vegetation

The proposed 3.4ha extraction area will require the removal of 2.33ha of significantly degraded A*gonis flexuosa* woodland (Plantecology Consulting, 2020). The surrounding vegetation is classified as Bassendean Central and South complex and comprises mainly Marri, Peppermint, Jarrah, Banksia, and Spearwood-type vegetation, with a threatened ecological community (TEC) (*Banksia sp.* Woodland) occurring directly to the north of the proposed extraction area. An exclusion zone of 20m from this TEC has been maintained to protect the TEC from impact as a result of the extraction activities.

There are no other known threatened ecological communities, nor is there any threatened priority flora or fauna in the vicinity of the proposed extraction area. The area potentially could provide habitat for the Western Ringtail Possum.

3. LAND USE & PROPOSED WORKS

The majority of the property comprises bushland, active sand quarrying, pastures and a tree plantation.

Figure 1 contains a recent aerial photograph showing the land use within the property and its immediate surrounds.

Under the proposed EIL, Carbone Bros intend to extract 300,000m^3 of sand from 3.4ha over a period of five years.

4. REHABILITATION

To offset the potential impacts on Western Ringtail Possum habitat from the clearing of 2.33ha of *Agonis flexuosa* woodland, Carbone Bros intend to

- Apply a conservation covenant over 20ha of remnant native vegetation within the property together with ongoing management of the area.
- Rehabilitate the 3.4ha extraction footprint to pasture grassland to be utilized for agricultural activities again.

These areas are indicated on Figure 1.

4.1 Rehabilitation Objectives

The objective of rehabilitation for this project is to establish a stable landform and a self-sustaining pasture grass cover with a minimal amount of weed species in the extraction footprint and to protect and conserve the covenanted offset vegetation.

4.2 Proposed Rehabilitation Measures

The proposed new extraction area covering 3.4 ha will be progressively rehabilitated to pasture grassland, indicated as in Figure 1. All rehabilitation areas will have the final land surface contoured so that the batters on all portions of the extraction will be 1:3 or flatter.

Rehabilitation will commence as soon as extraction within the area is complete.

- All slopes behind the active working face will be contoured to achieve a slope of no more than 1:3 vertical to horizontal. In so doing, care will be taken not to impact fringing vegetation. Proposed final contours are illustrated in Figure 1.
- Stockpiled topsoil will be re-spread across the completed extraction area to create a land surface which is aesthetically pleasing and trafficable by agricultural machinery.
- The quarry floor will be ripped along the contours to remove potential compaction and to establish low mounds to facilitate stormwater penetration and create a seedbed.
- Any mulch produced on site will be incorporated into the topsoil layer.
- Rehabilitation work will only be carried out just prior to or during the wet winter season.
- Weed management controls will be implemented as described in Appendix 2 attached within Extractive Management Plan (Appendix 1 of the Draft Preliminary Documentation).
- Monitoring and maintenance will be implemented as described in Section 4.3.

4.3 Monitoring and Maintenance

Monitoring will be carried out on an annual basis to assess:

- the physical stability of the landform in the rehabilitated areas.
- the success of germination and establishment of pasture grasses over the footprint.
- the emergence of weeds.

Monitoring will continue until the completion criteria presented in Section 4.4 have been fulfilled.

Maintenance procedures will be carried out where necessary and will include:

- repair of any erosion damage.
- replanting/seeding areas that may not have regenerated.
- weed control.

Monitoring will be undertaken on a six-monthly basis in Autumn and Spring, until the completion criteria outlined in Section 4.4 have been met. A summary of the rehabilitation activities undertaken each year and the monitoring results will be presented in the Annual Clearing Permit Audit Report.

4.4 Completion Criteria

Completion criteria must be sufficiently stringent to ensure that the overall objectives of the rehabilitation have been met. These criteria must also be designed to allow effective reporting and auditing to define an endpoint for the rehabilitation activities.

The completion criteria proposed for extractive operations on Lot 5 are presented in Table 1.

TABLE 1: Closure Criteria and Interim Targets

Criteria	Objective	Interim Targets
1. Safety	The site is safe to humans.	• Site is safe to humans during operations.
2. Sustainability	The site is sustainable in the long term without additional management inputs.	• Monitoring of the slope stability and grass cover to improve stability over time.
3. Suitability	The site is suitable for the agreed land uses.	• Monitoring of the slope stability and grass cover to improve stability over time
4. Visual amenity and heritage	The rehabilitated extraction area blends into the surrounding environment.	• Monitoring of the slope stability and grass cover to improve stability over time
5. Off-site impacts	Significant adverse off-site impacts are prevented.	• Significant adverse off-site impacts are prevented.
6. Hydrology	a. Site hydrology does not prevent the establishment of desired vegetation. b. Site hydrology does not reduce the stability of the landform. c. Stormwater is contained within the site.	• Stormwater is contained within the site during operations. • Identification and mitigation of any hydrology related issues during operations.
7. Soils and stability	a. Soil profiles and structures are sufficient to ensure vegetation establishment. b. The landform is stable.	• Topsoil is respread in all rehabilitation areas. • Identification and mitigation of potential erosion scars and scours during operations.

Criteria	Objective	Interim Targets
8. Vegetation	a. Pasture grasses cover the entire Stage 10 area after completion of the extraction phase. b. If native vegetation planting is required, at least 60% of the planted native species become fully established.	• Annual inspections after pasture grass seeding to asses survival rates and grass condition. • After one-year pasture grasses cover 30% of target area increasing by 20% per annum thereafter. • If native vegetation planting is required, 80% survival rate of planted native species per annum
9. Weeds	a. Declared pest weeds are absent. b. The level of weed species should not be detrimental to the planted vegetation.	• Declared weed species removed systematically during operations. • Ground cover is no more than 20% weeds at any time throughout the project.

4.4 Maintenance and Contingency Measures

Maintenance procedures will be carried out where necessary and may include:

- Repair of any erosion damage
- Seeding areas in subsequent years that may not have established
- Weed control – weed inspections will be undertaken in early spring once a year, or as frequently as necessary to achieve the completion criteria.
- Repair of offset fencing if required

Corrective actions will be undertaken to improve rehabilitation quality within the extraction footprint will need to occur within 3 months of the proponent becoming aware that an area no longer meets the completion criteria.

5. REFERENCES

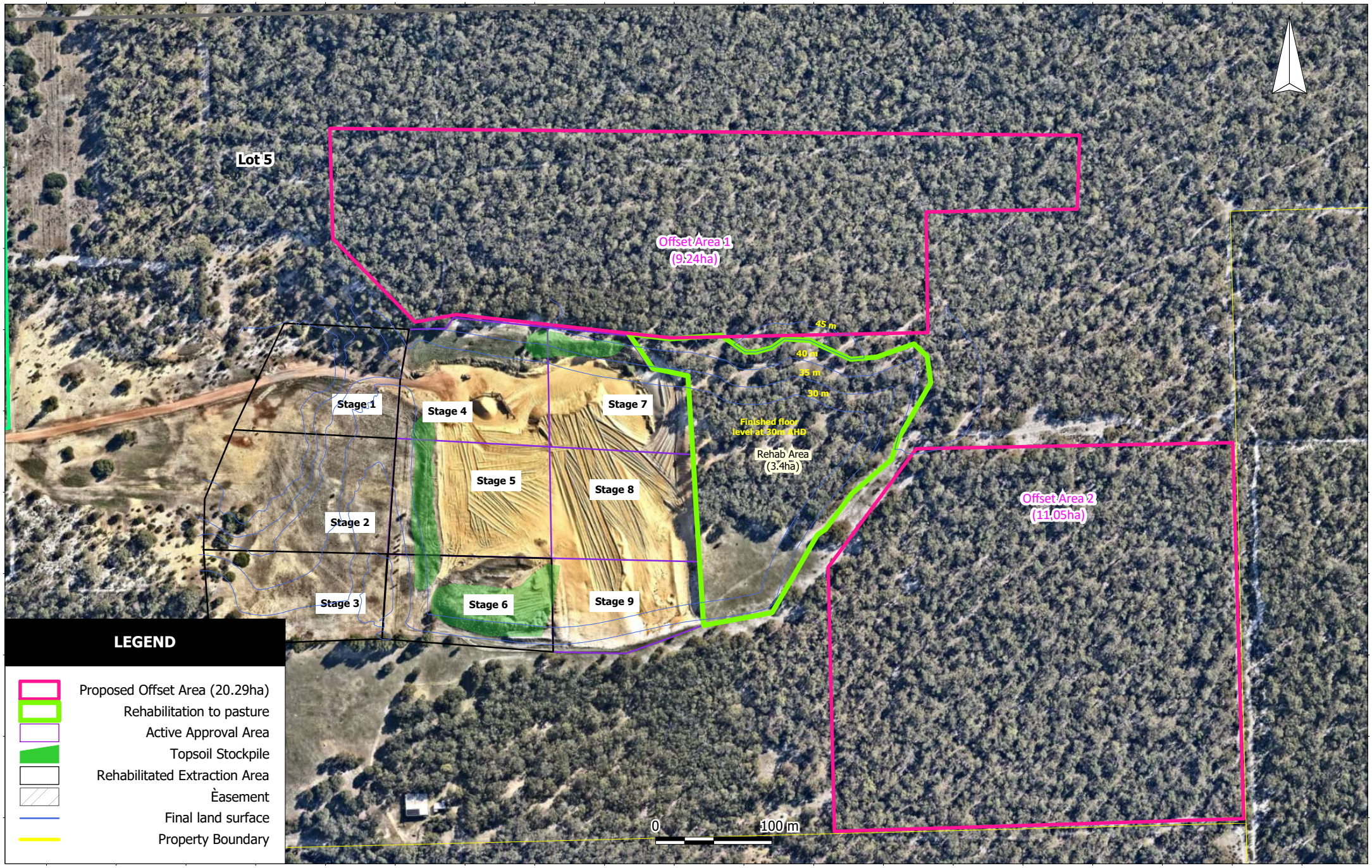
Keighery, B.J. 1994. Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc.) Nedlands, Western Australia.

PlantEcology Consulting (2020) Lot 5 Wellesley Road, Wellesley Flora and Fauna Survey

Department of Environment, Water, Heritage and Arts (DEWHA) (2009) Significant impact guidelines for the vulnerable western ringtail possum (Pseudocheirus occidentalis) in the southern Swan Coastal Plain, Western Australia.

Department of Parks and Wildlife (2017). Western Ringtail Possum (Pseudocheirus occidentalis) Recovery Plan. Wildlife Management Program No. 58. Department of Parks and Wildlife, Perth, WA.

FIGURE 1



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Scale: 1:4100
Original Size: A4
Air Photo Source: Nearmap April 2023
Datum: GDA94
Projection: Australia MGA94 (50)

Client: Carbone Bros
Project: Sand Extraction
Location: Lot 5 Wellesley Road, Wellesley

Figure 1:
Rehabilitation Plan

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