GROUNDWORK PART OF SLR

COMAUM SAND PIT (EML 5114)

Transitional Program for Environment Protection and Rehabilitation

Prepared for: Boral Resources (SA) Limited
Date: May 2025
File Reference: 5182.610.002 V2

DOCUMENT CONTROL

PROJECT / DETAILS REPORT

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Declaration of Accuracy

I, **Andrew Bondini**, the applicant, have taken reasonable steps to review the information to ensure its accuracy.

Name: Andrew Bondini
Position: Rehabilitation and Remediation Lead
Company: Boral Resources (SA) Limited
Dated: 28 May 2025

1 Site Details

1.1 Background

Comaum Sand Pit is a disused sand quarry, which is located approximately 20 kilometres (km) north of Penola and 35 km south of Naracoorte, within the Limestone Coast region of South Australia (SA) refer to **Drawing No. 5182.DRG.010 – Site Location Map**. Comaum Sand Pit (the Site) is comprised of one (1) Extractive Minerals Lease (EML) (EML 5114), which expands over 7.2 hectares (ha), adjacent to Glen Roy Conservation Park. Extraction at the Site commenced in 1983, though operations have not occurred for a number of years. It is now proposed that the Site is to be rehabilitated to enable its closure and surrender of the EML.

The Site has been previously operational under an Approved Development Plan (ADP) (approval number 67/95) dated 29/11/1995. This Transitional Program for Environment Protection (PEPR) is provided in support of the updated rehabilitation plans and activities as per the requirements of Terms of Reference (TOR) 026 – Extractive Mineral Quarry Transitional PEPRs under part 10A of the *Mining Act (SA) 1971*.

1.2 Site Overview

An overview of the Tenement details is summarised in **Table 1 – Tenement Detail Summary**.

Table 1 – Tenement Details Summary

Tenement Number	**EML 5114**
Registration Grant Date	7 April 1983
Expiry Date	6 April 2021
Status of Currency	Active
Tenement Holder / Operator	Boral Resources (SA) Limited (Boral)
Commodities	Sand
Legal Area (ha)	7.2
Commodity Categories	Construction Materials

(Source: SARIG, 2024)

1.3 Site Contact

Table 2 – Site Contact Details summarises the Site contact details.

Table 2 – Site Contact Details

Contact Name / Position	Andrew Bondini, Rehabilitation and Remediation Lead
Phone Number	0401 895 128
Postal Address	Level 1 49 The Parade Norwood SA 5067

2 Description of the Existing Environment

2.1 Topography and Landscape

A search of the Government of South Australia Enviro Data application *NatureMaps* (2024), confirmed the Site is located within the Naracoorte Coastal Plain IBRA Region, and the Glenelg Plain IBRA Subregion. The Naracoorte Coastal Plain IBRA Region is described as 'This bioregion is characterised by broad rolling plains separated by low ranges. Coastal landforms include sand ridges, sand dunes and limestone cliffs. Around 90% of the bioregion has been cleared for agriculture.' (*NatureMaps*, 2024).

The topography of the Site is undulating due to historic extraction and sandy, as demonstrated within **Drawing No. 5182.DRG.001AR1 – Orthophoto and Topography (2023-06-21)**, with height elevations of the Site ranging from 60 metres Australian Height Datum (mAHD) in the existing pit floor, to 80 mAHD in the north-east corner of the Site. The Site has forestry plantations located within eastern and western portions.

The surrounding area of the Site includes the Glen Roy National Park located north of the Site, forestry plantation to the east, agricultural activities to the west and active operating extractive quarries located south of the Site.

2.2 Climate

Climate data has been sourced from the nearest open weather station at Coonawarra Bureau of Meteorology (BoM) (Site No. 026091), located approximately 10.5 km south-west of the Site.

Climate is characterised as a warm Mediterranean climate with majority of rainfall in the winter months, June, July and August. Average annual rainfall is 573.5 millimetres (mm). **Table 3 – Climate Data Coonawarra BoM Station 026091** shows expected mean maximum temperature for the hottest month January, at 27.6 degrees Celsius and mean minimum temperature is 5.1 degrees Celsius for the coldest month of July.

Table 3 – Climate Data Coonawarra BoM Station 026091

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years		Plot	Map
Temperature																	
Mean maximum temperature (°C)	27.6	27.5	25.0	21.0	17.2	14.5	13.9	14.9	17.0	19.6	22.6	25.1	20.5	39	1985 2024		
Mean minimum temperature (°C)	11.8	11.8	10.3	7.9	6.9	5.4	5.1	5.4	6.4	7.3	8.9	10.2	8.1	39	1985 2024		
Rainfall																	
Mean rainfall (mm)	26.3	18.2	25.6	34.9	54.8	74.2	79.5	79.2	60.9	45.7	35.7	35.9	573.5	38	1985 2024		
Decile 5 (median) rainfall (mm)	18.3	13.9	19.8	29.2	51.2	68.9	75.6	76.8	62.8	42.5	35.2	26.8		39	n/a n/a		
Mean number of days of rain ≥ 1 mm	3.3	2.5	4.1	5.8	9.9	11.0	12.8	12.9	10.3	8.7	5.7	5.3	92.3	37	1985 2024		
Other daily elements																	
Mean daily sunshine (hours)																	
Mean number of clear days	6.7	8.5	7.1	3.4	2.6	1.7	2.3	2.6	2.3	3.2	3.7	4.7	48.8	19	1985 2008		
Mean number of cloudy days	9.3	7.2	9.3	12.1	16.2	16.5	15.1	14.8	15.7	15.7	13.9	12.3	158.1	19	1985 2008		
9 am conditions																	
Mean 9am temperature (°C)	18.7	18.3	16.6	15.0	11.8	9.3	8.8	9.9	12.3	14.4	16.0	17.6	14.1	25	1985 2010		
Mean 9am relative humidity (%)	62	65	69	70	83	87	85	81	74	66	65	62	72	25	1985 2010		
Mean 9am wind speed (km/h)	17.1	15.7	13.6	13.5	12.3	13.7	15.3	17.0	19.0	19.6	17.6	17.4	16.0	24	1985 2010		
9am wind speed vs direction plot																	
3 pm conditions																	
Mean 3pm temperature (°C)	25.4	26.0	23.5	19.6	16.1	13.3	12.7	13.5	15.4	17.7	21.0	23.1	18.9	25	1985 2010		
Mean 3pm relative humidity (%)	38	38	40	50	63	70	69	64	60	55	48	44	53	25	1985 2010		
Mean 3pm wind speed (km/h)	20.1	19.9	18.7	17.5	16.3	17.8	19.6	22.0	22.5	22.3	21.3	21.5	20.0	25	1985 2010		
3pm wind speed vs direction plot																	

red = highest value blue = lowest value

(Source: BOM, 2024)

Wind direction can vary dependant on the season and on time of day. **Attachment 1 – Wind Rose Data Coonawarra Station (Site No. 026091)** shows that morning wind direction is predominately northerly, and afternoon wind direction is predominately south westerly and westerly.

2.3 Topsoil and Subsoil

A search of Department for Environment and Water (DEW) application '*NatureMaps*' (2024) identified the area comprises of gently sloping undulating loamy and sandy rises, with 10 to 20% stony rises formed on calcreted calcarenites of ancient coastal dunes. The main soils of the area consist of loamy rises, sandy rises, and shallow stony rises. The loamy rises consist of shallow red loam on limestone (B4), loam over brown or dark clay (F1) and shallow sand over clay on calcrete (B7). These soils are moderate in depth, have high fertility, moderate water holding capacity and are rapidly drained.

The sandy rises consist of bleached siliceous sand (H3), bleached sand over sandy clay loam (G2) and thick sand over clay (G3). These soils are deep, have low fertility, moderate water holding capacity and rapid drainage. Severe water repellence, soil acidity and the susceptibility to wind and water erosion are limitations.

The shallow stony rises consist of shallow calcareous loam on calcrete (B2), shallow loam over red clay on calcrete (B6 and B4). These soils are shallow, have moderately low to moderate fertility and low water holding capacity. The soils are calcareous throughout, and rockiness may be a limitation (*NatureMaps*, 2023).

A search of *NatureMaps* (2023) identified that the Site is located with the Naracoorte Range (NRC) Land System. The NRC is described as "comprising two (2) distinct components; the calcarenite ridges have well drained soils which are commonly shallow and stony with moderately low fertility. Associated sand spreads have very low fertility. The depressions between the ranges include soils such as shallow sandy

soils over calcrete and sand over clay soils with impeded drainage. Overall, soils of the corridors are deeper and more fertile, but less well drained than those of the ridges" (*NatureMaps,* 2023).

The soil at the Site was historically described as sandy loam up to one (1) m depth. A site visit by Groundwork Plus confirms there is limited topsoil coverage (less than the described 0.5 m) and limited historically stored topsoil within the Site. As a large portion of the Site planned for rehabilitation has been historically extracted there is limited topsoil to be gained onsite, with the majority of the EML vegetated by forestry. The Site planned for rehabilitation is demonstrating natural revegetation / regrowth as a mixture of native and pine trees with the Site being non-operational for a period of time.

2.4 Geological Environment

Surface geology is listed as the Bridgewater Formation, which is described as "coastal barrier and shallow sub-tidal sediments: bioclastic and aeolian cross-bedded calcarenite, paleosol horizons, often capped by calcrete" (SARIG, 2023).

The geology of the NRC is described "the land system is formed on ancient coastal dune sand which has become indurated at the surface to form calcarenite. It is part of the Bridgewater Formation. The system is a single range, probably derived from the coalescence of several closely spaced dunes. Closed depressions within the range may be remnants of the original lagoons, or large solution features. They contain clayey sediments. There is intermittent sand spreads derived from reworking of the silica component of the original dune sands" (*NatureMaps,* 2023).

2.5 Geohazards

There are no known faults or other geological instability features on or immediately adjacent to the Site. A search of SARIG (2023) for earthquake activity recorded the closest seismic event occurred approximately 4.2 km north west of the Site in April 1992 and was measured to be 2.9 in magnitude.

There are no known minerals that occur in the material to be quarried that are hazardous to human health or the potential to pollute the environment such as respirable silica or sulphide minerals that may generate acid.

2.6 Groundwater

The Site is not located within a Prescribed Water Resource Areas but is located within the Lower Limestone Coast Prescribed Wells Area. Review of SARIG (2023) identified no aquatic or terrestrial Groundwater Dependent Ecosystems (GDE) within the Site. Terrestrial GDEs are located adjacent north and west of the Site as "Moderate potential GDEs comprising of Eucalyptus fasciculosa woodland and Eucalyptus arenacea/baxteri woodland" located mostly within the Glen Roy National Park.

Investigations of wider groundwater status sourced from the Bureau of Meteorology (BoM)'s Australian Groundwater Insight, demonstrates the Site exists within an area where the principal hydrogeology is of porous, extensive aquifers of high productivity, with salinity of > 3000 milligrams per litre (mg / L). No upper aquifers are listed, with middle aquifers of Murray Group Limestone or equivalents and lower aquifers of Renmark group or equivalents. Long-term groundwater level trends show a general stable groundwater level within the region over the 20-year trend.

A total of 174 wells were identified through WaterConnect (2023) as being within a two (2) km radius of the Site, with 142 of these being exploratory for mining purposes and 33 listed as water wells. A total of 26 of the wells have recorded Standing Water Levels (SWL) and Reduced Standing Water Levels (RSWL). Please refer to **Table 4 – Groundwater Well Data** for the results and refer to **Drawing No. 5182.DRG.004 – Groundwater Map** for a visual representation of the well locations.

Table 4 – Groundwater Well Data

Identifier Well No.	Elevation of well (mAHD)	SWL (m BGL)	RSWL (mAHD)	Date recorded	Well Status
7023-1513	57.68	3.27	54.41	5/07/1975	
7023-1517	58.35	3.06	55.29	5/07/1975	
7023-1518	57.02	2.22	54.8	5/07/1975	
7023-1519	58.61	3.77	54.84	5/07/1975	
7023-1528	72.87	18.34	54.53	13/05/1975	
7023-1529	80.15	17.97	62.18	13/04/1975	
7023-3759	57.66	3	54.66	19/08/1983	OPR
7023-3760	56.86	3.5	53.36	18/08/1983	OPR
7023-4060	65	5.2	59.8	7/06/1985	OPR
7023-4084	**60.48**	**3.5**	**56.98**	**30/09/1985**	**OPR**
7023-4148	59.31	2.9	56.41	30/06/1986	BKF
7023-4149	59.31	4.8	54.51	29/10/1986	
7023-4151	58.55	1.2	57.35	29/10/1986	
7023-4291	56.73	1.9	54.83	27/01/1988	
7023-4292	56.43	1.8	54.63	27/01/1988	
7023-4696	**60.61**	**3**	**57.61**	**7/12/1990**	
7023-5528	56.63	3.6	53.03	13/03/1998	
7023-5541	56.94	4	52.94	5/03/1998	
7023-5542	58.43	3.5	54.93	10/03/1998	
7023-5624	75.06	22.5	52.56	24/06/1998	
7023-5986	69.89	14	55.89	15/07/2000	
7023-5987	61.72	5.4	56.32	6/07/2000	
7023-6261	66.9	7.8	59.1	21/02/2003	
7023-6381	**60.39**	**4.3**	**56.09**	**27/08/2004**	
7023-6408	61.41	6.3	55.11	23/11/2004	
7023-6701	58.5	5.4	53.1	3/05/2007	

The results show that groundwater depth is variable across the area, ranging from 52.56 mAHD south east of the Site to 62.18 mAHD south of the Site, with standing water levels between 1.2 metres below ground level (m BGL) and 22.5 m BGL. The current elevations onsite range from 60 mAHD in the existing pit floor to 80 mAHD in the north-east corner of the Site where operations did not progress (nor will progress into).

Water Wells 7023-4084, 7023-4696, and 7023-6381 have been positioned at similar elevation to those recorded within the lowest point onsite (in the existing pit floor) to provide a comparison on expected depth to groundwater ranging from 56.09 m AHD to 57.61 m AHD. These wells have recorded SWL between 3 m BGL and 4.3 m BGL. Therefore, with the proposed final pit floor level at 62 m AHD approximately 4.39 m AHD – 5.91 m AHD buffer to reported well data levels would be expected.

Site investigations by Groundwork Plus on 06 June 2023 did not identify any intersection with groundwater at any point within the Site.

As actions onsite will be focussed on landform rehabilitation with no extraction to occur below 62 m AHD, there will continue to be no interception of groundwater as a result of the proposed rehabilitation.

2.7 Surface Water

The Site is not located within any Prescribed Water Resource Areas, within a water protection area, or within the Murray Darling Basin.

There are no mapped surface water courses or water bodies within the Site (*NatureMaps,* 2023). Currently, water is captured within the existing extracted pit area, with general Site drainage expected to flow in an east to west direction.

2.8 Vegetation, Weeds and Plant Pathogens

The Site consists of a combination of forestry plantation pines and regrowth of native vegetation. The west and east portions of the Site contain the plantations, with the mid-section consisting of the previous extraction areas, where natural regeneration of native vegetation has occurred since operations ceased.

A search of *NatureMaps* identified 25 threatened flora species recorded within the preceding 20-year period (from 2023 when the survey was undertaken) and within a five (5) km radius of the Site, refer to **Attachment 2 – Threatened Flora Species List**.

An EPBC Act protected matters search report listed 12 threatened flora species that may occur within proximity (five (5) km buffer applied) to the Site, refer to **Attachment 3 – *Environmental Protection and Biodiversity Conservation Act 1999* Protected Matters Searches**.

Of the 25 threatened flora species identified through *NatureMaps*, none were identified during the field inspections. It is considered unlikely that threatened flora species would be present within the Site, given the disturbance history of the area. In the unlikely event a threatened flora species was present, the proposed works are unlikely to significantly impact any populations.

Full assessment of the vegetation attributes and condition scores are provided within **Attachment 4 – Native Vegetation Management Plan**.

A total of four (4) Vegetation Associations were identified within the application area:

- *Dodonaea viscosa ssp. +/- Acacia spp.* shrubland over *Hibbertia sp. +/- Kennedia prostrata +/-* sedges in poor condition (Vegetation Association 1),

- Scattered *Eucalyptus viminalis ssp. cygnetensis* over *Dodonaea viscosa +/- Acacia spp.* With a sedge groundcover layer in poor condition (Vegetation Association 2),
- Scattered *Ficinia nodosa +/- Kennedia prostrata* with introduced weeds in very poor condition (Vegetation Association 3), and
- *Eucalyptus viminalis ssp. cygnetensis* woodland over *Dodonaea viscosa* in moderate condition (Vegetation Association 4).

All vegetation identified within the Site is regrowth since the cessation of quarrying activities. Within the northern portion of the Site, there are some mature Eucalyptus trees, at least 10 – 20 years old. Other native vegetation is limited in diversity, and structural forms. Herbaceous weeds are present throughout the Site, also with a prevalence of *Pinus radiata*, which makes up the majority of the canopy layer.

The vegetation under application is separated from adjacent remnant vegetation within the conservation park on the northern boundary by an unformed road only. Some native vegetation also exists within the road reserve between the two. Along the southern boundary of the Site, there is another closed EML, that has been rehabilitated and regeneration of native species, in a similar composition to within the Site, has occurred. To the east and west of the old pit, existing forestry plantations are growing, scheduled to be clear felled in the next eight (8) to 12 years.

The Site is located within a Moderate Phytophthora Risk area, although there are no records within proximity.

2.9 Fauna

The EPBC Act Protected Matters Report (2023) identified 21 native fauna species or species habitat that are likely to occur in the region (aquatic species excluded). The species listed have a national status of either vulnerable, endangered, or critically endangered, refer to **Attachment 3 – *Environment Protection and Biodiversity Conservation Act 1999* Protected Matters Report**.

A search of *NatureMaps* (2023) identified 18 state-rated Threatened native fauna species that may be present within a five (5) km radius of Site, refer to **Attachment 2 – Threatened Species Summary**. During a Site Inspection conducted in July 2023, evidence of the state-listed Rare species, *Vombatus ursinus* (common wombat) was noted within the Site, including burrows, tracks and scats. A deceased Common wombat was found immediately adjacent to the Site on the unformed road.

A database search of *NatureMaps* (2023) for the area returned seven (7) introduced fauna species that have been recorded within five (5) km of the Site. All species are common and widespread throughout the region and are not likely to pose and management implications. These included:

- *Carduelis carduelis britannica* (European goldfinch)
- *Sturnus vulgaris vulgaris* (common starling)
- *Turdus merula merula* (common blackbird)
- *Mus musculus* (house mouse)
- *Oryctolagus cuniculus* (rabbit)
- *Ovis aries* (feral sheep)

Vegetation within the Site has been subject to historical disturbance and clearing of which the remaining vegetation is not likely to contain high value native habitat for the majority of the rare and endangered species identified through the desktop searches. The common wombat is likely to be utilising the Site

for a period throughout the year, and as is common for the species, they are likely to also utilise other burrows within the area. It is expected landform rehabilitation can be achieved without impacting individuals or the local population with appropriate mitigation measures as outlined in **Section 6.3 Fauna**. It would be expected that kangaroos, native birds, foxes, and rabbits would also traverse the Site when foraging for food.

2.10 Caves

A search on SARIG (2023) did not identify any caves or significant limestone formations within the Site. The nearest known caves, the Naracoorte Caves are located over 14 kms north west of the Site.

2.11 Land Use

The Site is located within the Wattle Range Council, which covers almost 4,000 square kilometres (km^2), extending from the south-eastern coast of South Australia to the Victorian border. The Site is located within the Rural Zone under the Planning and Design Code, as the area supports the economic prosperity of SA through the production of forestry and industrial materials (Plan SA, 2024).

EML 5114 was first granted in 1983 and consist of 7.2 ha under the Tenement. The original approval document for mining activities was an Approved Development Program (ADP), approved by Mines and Energy South Australia in 1995 (ADP No. 67/95).

The Tenement was established for the purpose of extracting sand resources for concrete sand. The geology for extraction was described as Alluvial Sand, with a deposit length of 600 m, width of 120 m and a depth of five (5) m. Extraction was to be achieved through open cut extraction.

Land use prior to the Tenement was listed as forestry, with no native vegetation described.

Surrounding land use consists of adjacent EMLs, which are owned and operated by Gambier Earthmovers Pty Ltd, Bull Bros Pty Ltd and Holmes Civil Pty Ltd for the extraction of sand (SARIG, 2024).

In addition, Glen Roy Conservation Park is located to the Site's north, while forestry plantations within the Green Triangle for Forestry SA and OneFortyOne leaseholders comprise a large area of the region and are located within the eastern and western portions of the Site. The Site is planned to return to forestry.

2.12 Proximity to Infrastructure and Housing

The Site is located within an agricultural area. There are two (2) residential dwellings located within two (2) km of the Site; one (1) approximately 800 m west and one (1) approximately 1.8 km south-east of the Site, refer to **Drawing No. 5182.DRG.012 – Land Access Map**.

A winery is located approximately 1.9 km to the south of the Site. To the west of the Site are vineyards and irrigated crops which house irrigation booms. To the east are forestry plantations, an extension to the ones onsite.

Several other EMLs as outlined in **Section 2.11 Land Use** are located to the south of the Site, with some containing current extractive activities.

There is no infrastructure or services located within the Site, with the nearest SA Power electrical line located approximately 800 m west connected to the nearest residential receptor.

The Site is accessed by a local unsurfaced road (Forest Road) that has no residential receptors located along it.

2.13 Exempt Land

There is no exempt land applicable to the Site.

2.14 Amenity

The Site is situated in a forestry plantation, with the existing pit not visible from the east, south, and west. Stockpiled topsoil and native vegetation provide a screen to the pit from the road located along the northern boundary of the EML.

2.15 Dust and Air Quality

The Site is located within a forestry operation, adjacent to operational EMLs where dust may be generated. Other sources of dust may be generated from adjacent viticulture and agriculture activities and use of unsealed roads that occurs within the wider region.

As Site activities are planned for rehabilitation, with one (1) HME located onsite to reprofile soil, over the short duration of two (2) – three (3) weeks, potential dust generating activities will be limited to earthworks to achieve final landform. This is likely to be relatively short in duration with no ongoing dust generation; refer to **Section 6.6 Air Quality** for relevant control and management strategies to reduce dust-generating activities during rehabilitation and closure of the Site.

Site climate data has been sourced from the Coonawarra Bureau of Meteorology (BoM) (Site No. 026091) located approximately 11 km south of the Site.

Climate is characterised as a Mediterranean climate, with milder summers and cold winters with majority of rainfall between the months of May and September. Average annual rainfall is 575.0 millimetres (mm). **Table 5 – Climate Data Coonawarra BoM Station No. 026091** shows expected mean maximum temperature for the hottest month January, at 27.7 degrees Celsius and mean minimum temperature is 5.1 degrees Celsius for the coldest month of July.

Table 5 – Climate Data (Coonawarra BoM Station No. 026091)

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years		Plot	Map
Temperature																	
Mean maximum temperature (°C)	27.7	27.5	25.0	21.0	17.2	14.5	13.9	14.9	16.9	19.6	22.6	25.1	20.5	39	1985 2025		
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Rainfall																	
Mean rainfall (mm)	25.8	18.2	26.2	34.9	54.8	75.4	79.7	80.0	61.0	45.7	35.7	35.9	575.0	38	1985 2025		
Decile 5 (median) rainfall (mm)	18.1	13.9	21.4	29.2	51.2	69.0	76.6	79.2	63.0	42.8	35.2	26.8		40	n/a n/a		
Mean number of days of rain ≥ 1 mm	3.2	2.5	4.1	5.9	9.9	11.1	12.7	12.9	10.3	8.6	5.8	5.3	92.3	38	1985 2025		
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Mean daily sunshine (hours)																	
Mean number of clear days	6.7	8.5	7.1	3.4	2.6	1.7	2.3	2.6	2.3	3.2	3.7	4.7	48.8	19	1985 2008		
Mean number of cloudy days	9.3	7.2	9.3	12.1	16.2	16.5	15.1	14.8	15.7	15.7	13.9	12.3	158.1	19	1985 2008		
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Mean 9am temperature (°C)	18.7	18.3	16.6	15.0	11.8	9.3	8.8	9.9	12.3	14.4	16.0	17.6	14.1	25	1985 2010		
Mean 9am relative humidity (%)	62	65	69	70	83	87	85	81	74	66	65	62	72	25	1985 2010		
Mean 9am wind speed (km/h)	17.1	15.7	13.6	13.5	12.3	13.7	15.3	17.0	19.0	19.6	17.6	17.4	16.0	24	1985 2010		
9am wind speed vs direction plot																	
3 pm conditions																	
Mean 3pm temperature (°C)	25.4	26.0	23.5	19.6	16.1	13.3	12.7	13.5	15.4	17.7	21.0	23.1	18.9	25	1985 2010		
Mean 3pm relative humidity (%)	38	38	40	50	63	70	69	64	60	55	48	44	53	25	1985 2010		
Mean 3pm wind speed (km/h)	20.1	19.9	18.7	17.5	16.3	17.8	19.6	22.0	22.5	22.3	21.3	21.5	20.0	25	1985 2010		
3pm wind speed vs direction plot																	

red = highest value blue = lowest value

Product IDCJCM0025 Prepared at Thu 06 Feb 2025 03:31:12 AM AEDT

(Source: BOM, 2025)

Wind direction can vary dependant on the season and on time of day. **Attachment 1 – Wind Rose Data Coonawarra BoM Station (No. 026091)** shows that morning wind direction is predominately from the north, and afternoon wind direction is predominately from the west, south west.

2.16 Noise

Noise levels in the region are generally typical of an agricultural setting. Traffic noise emitted from vehicles travelling along local road and machinery associated with extractive activities and agricultural practices are typical anthropogenic noise sources in the surrounding area. The operating quarries in proximity to the Site would also generate noise.

Potential noise-generating activities onsite are limited to earthworks via one (1) HME onsite to achieve final landform and are likely to be relatively short in duration (two (2) – three (3) weeks) with no ongoing noise generation; refer to **Section 6.7 Noise** for relevant control and management strategies to minimise noise nuisance to sensitive receptors.

2.17 Heritage (Aboriginal, European, Geological)

A search of the Central Archive of the Department of Premier and Cabinet – Aboriginal Affairs and Reconciliation (DPC-AAR) on 13 February 2023 identified one (1) Registered Aboriginal Site to be present immediately adjacent to the northern boundary of the Site, refer to **Attachment 5 – Confidential - Aboriginal Heritage Sites Search**. In accordance with the provisions of the *Aboriginal Heritage Act 1988*, the results of the DPC-AAR search are required to be treated confidentially and are not able to be shared to any third party.

Refer to **Section 4 Consultation** for details on the consultation undertaken with Burrandies Aboriginal Corporation (BAC) and **Section 6.1 Heritage** for control and management strategies agreed to be implemented during rehabilitation works.

Historically, when original approval was granted for the EML, there were no Aboriginal Heritage surveys undertaken for the Site. During extraction there were no instances of Aboriginal heritage sites, objects or remains encountered. The landform within the Site has been altered and disturbed from extraction activities. The Site has also undergone disturbance in the establishment of forestry plantation within the eastern and western portions of the Site. The small portion of the northern area of the quarry has historically been altered for storage of topsoil. Land within the Site is held in Fee Simple of which Native Title has been extinguished.

A search on the Government of South Australia, application *NatureMaps* (2023), did not identify any non-indigenous or geological heritage sites within the Site or in proximity to the area.

2.18 Proximity to Conservation Areas

A search of *NatureMaps* (2023) identified the nearest conservation parks, reserves and Commonwealth Recognised Conservation Areas as Glen Roy Conservation Park, which is located immediately adjacent to the northern boundary of the EML.

In addition, the Deadman's Swamp National Wetlands are located north of Glen Roy Conservation Park, while a Native Vegetation Heritage Agreement Area is located to the Site's south-east (SARIG, 2024), refer to **Drawing No. 5182.DRG.009 – Proximity to Conservation Areas Map**.

2.19 Pre-existing Site Contamination and Previous Disturbance

The property is currently a disused historic extraction area, with historic, current and future land use projected as forestry. Previous disturbance includes historical land clearance, forestry plantation and extraction operations.

There are no known pre-existing Site contamination or disturbance identified on the EPA contamination site index for the Site. A visual inspection of the Site also shows no site contaminations, historical spills or storage of waste or rubbish.

3 Description of the Proposed Mining Operations

3.1 Introduction

EML 5114 was first granted in 1983 and consists of 7.2 ha under the Tenement. The original approval document for mining activities was an Approved Development Program (ADP), approved by Mines and Energy South Australia in 1995 (ADP No. 67 / 95).

The Tenement was established for the purpose of extracting sand resources for concrete sand. The geology for extraction was described as Alluvial Sand, with a deposit length of 600 m, width of 120 m and a depth of five (5) m. Extraction was to be achieved through open cut extraction.

Operations within the Site have not occurred for several years, and it is now proposed that the Site is to be rehabilitated to enable its closure and relinquishment of the EML. The Site has some legacy concerns regarding historical pit batters that require reshaping to a 1V:3H batter as agreed by the landowner to support the proposed final land use of forestry operations.

This Transitional Program for Environment Protection (PEPR) is provided in support of the updated rehabilitation plans and activities as per the requirements of Terms of Reference (TOR) 026 – Extractive Mineral quarry transitional PEPRs under part 10A of the *Mining Act (SA) 1971* in relation to closure activities only.

3.2 General Description and Maps of Operation

This section is provided to give a general description of the planned rehabilitation activities to be undertaken on the Site in relation to closure activities.

Rehabilitation Plans are provided and described throughout **Section 3.3.1 Sequence of Quarrying and Progressive Rehabilitation**. The plans demonstrate how the Site is to be rehabilitated in a manner to reduce potential impacts on the surrounding receptors and return to a final land use of forestry plantation consistent with surrounding uses.

The following drawings have been provided to outline rehabilitation within the Site:

Site Location Map	(Drawing No. 5182.DRG.010)
Orthophoto and Topography (2023-06-21)	(Drawing No. 5182.DRG.001AR1)
Groundwater Map	(Drawing No. 5182.DRG.004)
Land Access Map	(Drawing No. 5182.DRG.012)
Proximity to Conservation Areas	(Drawing No. 5182.DRG.009)
Proposed Rehabilitation Plan	(Drawing No. 5182.DRG.011R1)
Native Vegetation Clearance Map	(Drawing No. 5182.DRG.013)
Site Access Map	(Drawing No. 5182.DRG.014)

3.3 Quarrying activities

3.3.1 Sequence of Quarrying and Progressive Rehabilitation

The Site is no longer required to be extracted by Boral and plans for the Site are focused on rehabilitation activities to return the land to the land's stakeholder (the leaseholder) OneFortyOne who plan to continue and extend forestry operations.

The ADP (approved in 1993) states vegetation will be cleared as required, and rehabilitation will be undertaken post-completion. Initially, rehabilitation activities included placing by-product back in the mined area and covering it with the previously removed topsoil. As per the ADP, some native trees may need to be replanted along with re-seeding.

As the post-mining land use has been agreed as forestry plantations with OneFortyOne (the future leaseholder of the land), rehabilitation has been designed to support forestry plantations and work within the confines of the Tenement space which is a narrow shaped Tenement.

Consultation with Department for Energy and Mining (DEM) informed a Native Vegetation Assessment shall be undertaken prior to rehabilitation activities to understand the SEB Offset. After the SEB payment has been finalised and payment has been made, onsite earthworks for vegetation clearance and landform shaping can occur.

As listed within **Section 8 – Lease / Licence Conditions**, the EML 5114 Lease contained a lease condition to rehabilitate the Site to a final batter slope of one (1) vertical to five (5) horizontal (1V:5H). As per **Section 4 Consultation** rehabilitation was discussed with OneFortyOne where the battering of mining faces to be 1V:3H was agreed to in order to reduce removal of forestry and vegetation within the Site and in allow the rehabilitated landform supporting future land use. The change has been assessed within **Section 6 Environment Outcomes, Strategies, Criteria and Monitoring** and identified a safe and stable final landform can be achieved for final land use with 1V:3H battered slopes and rectifies legacy safety issues within the Site.

Additionally, Consultation with the landowner included the Lease condition of backfilling the Site with 0.5 m topsoil discussed. An investigation of the Site's current condition and topsoil reserves along with what is shown in the remaining areas to be cut for rehabilitation indicates 0.5 m backfill across the Site is not likely achievable or required for final land use. The Site will utilise the cut and fill and existing topsoil to rehabilitate the Site, refer to **Section 4 Consultation.** The Site is currently demonstrating revegetation of pine and native vegetation indicating a reduced topsoil level will support final land use activities.

According to OneFortyOne, no vegetation planting requirements are necessary. The Site will be maintained by OneFortyOne after surrender of the Tenement, which includes slashing the land until the surrounding plantations require replanting, of which the pine plantations will commence for the Site. This is projected to occur within approximately 10 years.

Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan provides the final rehabilitated landform design and cross sections.

The Site will clear native fauna and vegetation as per **Section 3.5 Vegetation Clearance** prior to commencing operations.

Available topsoil will be stripped and maintained for reapplication on the pit floor. One (1) HME (dozer) will then commence cut and fill operations to slope pit edges and battering to contour and shape the pit edges using materials from within the cleared area to create a 1V:3H battered safe and stable landform. The depth of the pit is not increasing and will remain approximately 62 m AHD.

The final rehabilitated area will be 240 m in length by 106 m at the widest point, to a depth of 62 m AHD and 1.88 ha in area.

It is anticipated that the rehabilitation activities are likely to be achieved over two (2) to three (3) weeks in one (1) campaign.

3.3.2 Topsoil Stockpiles

Topsoil from historic extraction activities has been stored along the northern boundary of the Site and within a central topsoil stockpile location.

Additional topsoil from vegetation clearance and rehabilitation activities will be stripped and added to these stockpiles for short term storage.

A material balance calculating the amount of topsoil required for rehabilitation for the total pit applying the lease condition of 0.5m of topsoil calculated:

- Walls / batter slopes covers 11,500 m2 = 5,750 m3 of topsoil.
- Floor area is 7,200 m2 = 3,600 m3 of topsoil.

As discussed, the Site visit in June 2023 identified there is limited cover of 0.5 m topsoil available for rehabilitation. It is estimated by desktop survey that approximately 4,500 to 5,000 m3 of topsoil could be available from the stored topsoil and undisturbed areas.

Consultation with the Landowner Stakeholder One-Forty-One discussed the limited topsoil available for application to the pit batter and floor. Agreement has been obtained to apply available topsoil to the recontoured batters to optimise the rehabilitated area for the final land use of forestry. Additionally, prior to topsoil application, the shaping and contouring of the Site and spread / application of subsoil to form 1V:3H batters will further assist final land use activities.

3.3.3 Modes and hours of operation

Rehabilitation work will be undertaken with the following hours:

- Monday – Friday 7.00am to 6.00pm.

3.3.4 Plant and Equipment

The rehabilitation works will require the following plant and equipment to be utilised:

- Light vehicles
- Dozer
- Articulated dump trucks

3.4 Supporting Surface Infrastructure

3.4.1 Access and Roads

The Site is accessed via Riddoch Highway, onto Edenhope Road and then via unsealed access roads as per **Drawing No. 5182.DRG.014 – Site Access Map**.

Traffic movements will be minimal and limited to mobilisation of the HME (Dozer) to Site at commencement of the works and completion of the work.

Access for personnel to the Site will be via light vehicle (approximately two (2) movements per day). It is anticipated that rehabilitation works will take approximately up to two (2) to three (3) weeks to complete, therefore no traffic impacts are expected.

3.4.2 Erosion, sediment and silt control

Surface water will continue to drain into the final rehabilitated pit floor as it will remain at a lowered point topographically. Any surface waters contained within the pit floor will naturally absorb or evaporate. Refer to **Drawing 5128.DRG.011R1 – Proposed Rehabilitation Plan** for an overview of the final cross sections.

3.5 Vegetation Clearance

As outlined in **Section 2.8 Vegetation, Weeds and Plant Pathogens**, a vegetation assessment was conducted in July 2023. Native vegetation was recorded within the Site comprising of regrowth shrubs and groundcovers some scattered trees within the historical extraction area, refer to **Attachment 4 – Native Vegetation Management Plan** and **Drawing No. 5182.DRG.013 – Native Vegetation Clearance Map**. The clearance of native vegetation is required to rehabilitate the landform to a safe and stable state to create batters of 1V:3H as agreed with the landowner.

A summary of the native vegetation assessment and associated Significant Environmental Benefit (SEB) required prepared by a Groundwork Plus Native Vegetation Accredited Consultant is provided in **Table 5 – SEB Offset Required for Clearance**.

Table 5 – SEB Offset Required for Clearance

Block	Site	Species diversity score	Threatened Ecological community Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
A	1	10	1	0	0.06	26.88	0.79	21.24	1	-	-	23.36	$22,560.99	$1,240.85
A	2	4	1	0	0.06	10.59	0.87	9.21	1	-	-	10.03	$9,783.51	$538.09
A	3	3	1	0	0.06	5.50	0.23	1.27	1	-	-	1.40	$1,376.26	$75.69
A	4	12	1	0	0.06	36.03	0.48	17.29	1	-	-	19.02	$18,369.44	$1010.32
						Total	**2.37**	**49.01**				**53.81**	**$52,090.20**	**$2,864.95**

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	49.01	53.81	$52,090.20	$2,864.95	$54,955.15

Prior to the commencement of rehabilitation, payment will occur for the amounts outlined within **Table 5 – SEB Offset Required for Clearance**, with a total payment of $54,955.15 into the NVF.

3.6 Description of Quarry Site at Completion

Upon completion of rehabilitation activities, it is envisaged that the Site will be returned to its current and historic use of industrial forestry plantations, alike to the 157 ha of forestry land comprising Comaum. Upon closure and surrender of the lease, the remaining land parcel will be transferred to OneFortyOne for lease and management consistent with adjacent land parcels, to continue the Green Triangle operations on the border of South Australia and Victoria.

After consultation with the future leaseholder and landowner stakeholder, OneFortyOne, the forestry plantation will be planted within the Site when the surrounding area is due for replanting in approximately 10 years. Between the surrender of the Site and the proposed plantation efforts, the land will be maintained by OneFortyOne (most likely through slashing), after land rehabilitation is completed until that planting occurs. No specific vegetation requirements have been requested from the Landowner due to planned land use of the Site.

Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan has been designed to demonstrate the final landform will support forestry plantations.

Prior to the tenement relinquishment and approximately 12 months post rehabilitation works, a competent person will sign off that the landform is consistent with the proposed landform within an approval or program under the *Mining Act 1971*. That landform batters remain stable at 1V:3H and minimal erosion has occurred with natural vegetation commencing.

Upon completion of quarrying operations, any plant, equipment, and materials shall be removed from the Site to the satisfaction of the Chief Inspector of Mines unless an agreement with the Landowner is determined prior to closure. There is currently no historic wastes or plant onsite and is no expected any to be generated during works or to be left onsite.

As a general guide the following measures may be used to prepare the final landform:

- Using earthmoving equipment to progressively shape and trim the workings to the desired design profiles and flattening the gradients of batters to 1V:3H.
- Rounding or marrying the contours into the natural ground surface.
- Topsoiling of pit wall batters.
- Providing access to the terminal workings to allow maintenance of rehabilitation works.
- Designing landform and drainage to control erosion.

The following measures are to be implemented for topsoil and overburden spreading:

- Areas to be spread are to be re-profiled prior to placing of overlying materials.

- Topsoil and overburden are to be removed from stockpiles in a manner that avoids vehicles travelling over the stockpiles.
- Topsoil and overburden are to be respread (topsoil to battered walls only) in the reverse sequence to its removal where possible so that the original soil layer is returned to the surface to re-establish the entrapped seed content of the soil.
- After spreading topsoil, ensure the surface is left in a roughened state to assist moisture infiltration and inhibit soil erosion and encourage natural revegetation.
- If erosion occurs on treated surfaces, the area is to be re-profiled and re-spread as necessary (note: traversing tracked machinery perpendicular to the slope gradient may assist in reducing the erosion potential of the re-profiled surface).

Any roads and tracks located within areas to be rehabilitated that are no longer required for the operational functionality of the Site, or for ongoing access to rehabilitated areas are to be removed as per **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan** and contoured into the landform where applicable and allowed to regenerate with vegetation. Ongoing access is to be prevented to these roads and tracks to avoid compaction and increase germination survival rates. Access tracks to remain unrehabilitated to provide Site access for future maintenance activities and fire break management are identified on **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan**.

Site access will remain via the access tracks entering from the south west of EML 5114 as per **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan**.

4 Consultation

Consultation with interested parties has been undertaken throughout the development of the Transitional PEPR for closure. A genuine interest and opportunity to engage with stakeholders has been undertaken throughout the development of the Transitional PEPR. The identification of stakeholders is an important process to ensure all stakeholders understand the project and have an opportunity to provide feedback throughout the process to the proponent.

4.1 Stakeholder Identification

Stakeholders which have been consulted with are as follows:

- Andrew Bondini (Boral)
- Reno Matiazzo and Ross Stevens (DEM)
- Sue & Stuart Adam (OneFortyOne) leaseholder of land parcel
- Andrew Jantke (now retired, previously South Australia Native Title Services)
- Attempted: Bianca Lena (South Australia Native Title Services), Robyn Campbell (Burrandies Aboriginal Corporation)
- Tara (Burrandies Aboriginal Corporation)
- Department for Environment and Water
- Department for Energy and Mining

The land parcel EML 5114 is located within forms part of the larger land parcel (CT 6256/738 H440400 S358) owned by Treasurer of South Australia and leased through a registered dealing to OneFortyOne. The EML Tenement Holder and Operator is listed as Boral. The land EML 5114 is situated within is leased to OneFortyOne who manage the forestry plantation onsite and will continue to manage the future land uses of the Site after closure. Therefore, for the purposes of consultation OneFortyOne has been engaged with regarding final land use options and is referred to as Landowner Stakeholder.

Factors considered in the identification of stakeholders and to contain consultation to restricted stakeholders included:

- The Site has been remained non-operational for many years, and activities outlined within this PEPR are to rehabilitate the Site for closure.
- That the quarry is situated within a forestry plantation and rural / agricultural area predominantly surrounded by viticultural, Glen Roy National Park, minimal residences and extractive quarries.

For note, numerous Heritage contacts as listed on the AAR search were attempted for contact via phone and email with no response received. Ongoing liaison with Tara from Burrandies Aboriginal Corporation has been established and will remain the central contact for consultation purposes.

4.2 Consultation Methods

A total of seven (7) stakeholders were consulted of which four (4) items of queries and feedback were received. Through the combined use of the phone calls (eight (8)), one on one meetings (two (2)) and emails (over 20), stakeholders were able to discuss their queries regarding the PEPR with the summary of the queries and feedback raised covered in **Section 4.3 – Stakeholder Feedback and Outcomes of Consultation** and where those items have been addressed in this PEPR.

All stakeholders that raised queries have been responded to and advised them of how their feedback has been considered via control and management strategies and outcome and criteria measurement.

4.3 Stakeholder Feedback and Outcomes of Consultation

4.3.1 Weed Management

One (1) stakeholder raised a consideration regarding management of weeds and introduction and/ or spread of weeds.

Section 6.5 Weeds contains control and management strategies, an Outcome and Measurement Criteria to mitigate impacts of weeds.

4.3.2 Native Fauna

One (1) stakeholder advised Wombats could be present onsite as they are experienced in high numbers within the area.

Section 6.3 Native Fauna outlines the control and management strategies, an Outcome and Measurement Criteria to manage the presence of native fauna and removal of fauna prior to rehabilitation works if required.

4.3.3 Heritage

Three (3) stakeholders were consulted with one (1) stakeholder responding. The stakeholder advised a preference for a representative to attend onsite during rehabilitation of the EML due to the proximity of the reported Sites north outside of the Tenement.

Section 6.1 Heritage outlines the control and management strategies to include survey by a representative during the rehabilitation of the northern portion of the Site closest to the reported Site. Boral will consider additional surveying if representatives request this, however the Site area identified for rehabilitation is largely disturbed with no Heritage finding reported to date. An Outcome and Measurement Criteria is also provided.

4.3.4 Final Landform

Four (4) stakeholders were consulted with regarding the proposed final landform and end use. The proposed revised slope batter of 1V:3H was presented for consideration. One (1) stakeholder provided the following feedback and is provided as **Attachment 7 – Landowner Consultation**:

- Provided confirmation the final land use would be utilised for pine / forestry operations consistent with land use and surrounding land use, and management of the Site until then would include them slashing weeds etc.
- Provided confirmation 1V:3H final slope batters are an acceptable final landform.
- Advised additional area from the western side of the Tenement could be utilised to gain fill and topsoil for rehabilitation profile / grading.
- Agreed that "topsoil" has historically, and will be for rehabilitation operations more representative of a blend of the sandy soil and sub surface layers and this is what is consistent

with the adjoining landscapes and onsite, and is supporting regrowth of pine and native species currently. The landowner agreed to apply the sub soil and available topsoil to the wall batters.

Section 6 Environmental Outcomes, Strategies, Criteria and Monitoring and **Section 3.5 Description of Quarry Site at Completion** addresses rehabilitation strategies and an Outcome and Measurement Criteria for final landform rehabilitation impacts.

5 Management of Environmental Impacts

5.1 Introduction to Environmental Impact Assessment

To facilitate the appropriate closure and rehabilitation of the Comaum Sand Pit, **Section 6 – Environmental Outcomes, Strategies, Criteria and Monitoring** has been developed in accordance with the requirements of Section 73 G(1) of the *Mining Act 1971* and Terms of Reference (TOR) 026– *Extractive Mineral Quarry Transitional PEPRs*.

As the Site is regulated by an ADP (Program No. 67 / 95) which did not include relevant outcomes and criteria for the quarry rehabilitation activities for closure, an Impact Assessment has been undertaken to assess potential environmental impacts and mitigation measures that are reasonably expected to be affected by the proposed closure and rehabilitation activities. These are identified as the following:

- Heritage
- Land Use and Third-Party Property
- Native Fauna
- Native Vegetation
- Weeds, Pests and Plant Pathogens
- Air Quality
- Noise
- Public Safety
- Topsoil
- Traffic
- Waste
- Surface Water
- Groundwater
- Rehabilitation.

The Environmental Impact Assessment presented within the following section identifies:

- The environmental components, context, and interests of any affected parties.
- The potential environmental impacts that may be associated with the quarry closure activity.
- The potential source, pathway and receptor associated with the impact.
- Confirmation that the source, pathway and receptor are present for the associated impact.
- A description of the uncertainties and assumptions associated with the impact assessment.
- An evaluation of the sensitivity to change of the impact assessment.

Where the environmental impact source, pathway and receptor are confirmed to be present for a specific environmental impact the following information will also be provided:

- A description of the impact control and management strategies.
- A description of the uncertainties and assumptions associated with the control and management strategies.
- An evaluation of the sensitivity to change of the control strategies.
- Outcome and measurement criteria for each impact.

Applicable Legislation and Standards for each environmental aspect is provided in **Attachment 6 – Legislation and Standards**.

The proposed outcomes and outcome measurement criteria presented at the end of each impact assessment are limited to those associated with environmental aspects that contain a source, pathway and receptor that are likely to be affected by the proposed operation.

The Tenement Holder is responsible to ensure control and management strategies within the transitional PEPR are monitored and reviewed, to ensure performance aligns with design criteria and reflects the dynamic nature of closure operations. Monitoring requirements are provided within the Outcome and Measurement Criteria sections for environmental aspects that are reasonably expected to be affected by the proposed closure and rehabilitation activities.

6 Environmental Outcomes, Strategies, Criteria and Monitoring

6.1 Heritage

6.1.1 Context

As outlined within **Section 2.18 Heritage**, one (1) registered Aboriginal Heritage Site is present immediately adjacent to the northern boundary of the Site, refer to **Attachment 5 – Confidential - Aboriginal Heritage Sites Search**. A *NatureMaps* (2023) search did not identify any non-Aboriginal or geological heritage sites within proximity to the Tenement.

Stakeholder consultation confirmed the preference for cultural monitoring. Boral have committed to undertaking the survey of the northern half of the rehabilitation works with the local Heritage Group BAC to be undertaken prior to rehabilitation works commencing. Should BAC request additional areas to be surveyed, this will be arranged prior to disturbance of those additional areas, including duration of monitoring. It is noted the majority of the Site has been historically disturbed due to extraction and forestry plantations being established. A small section of the northern boundary remains a relatively undisturbed area (extraction) due to topsoil storage.

6.1.2 Impact Assessment

Quarry Phase	**Potential impact event**			
Site Closure	Disturbance, damage and / or destruction of Aboriginal, European and / or Geological Heritage sites or objects through development and operation of the Site.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
H1	Closure and rehabilitation activities.	Rehabilitation earthworks.	Heritage objects, sites and / or remains.	Yes
Uncertainty and Assumptions				
A DPC AAR Search of the Site and surrounding areas identified the presence of a Registered Aboriginal Heritage Site adjacent to the northern boundary of the Site in a neighbouring property. The majority of the rehabilitation area has been disturbed but it is possible that additional Heritage sites may be present within EML 5114. The portion is planned for primarily for survey prior to any works commencing due to soil still being intact within this area, in addition to proximity of reported Site. The remaining area of the rehabilitation site has been historically extracted or used for forestry plantation and is unlikely to contain any artefacts.				
Sensitivity to Change				
Large-scale rehabilitation earthworks could result in the discovery of unknown Heritage sites, objects and / or remains. Given the Aboriginal Heritage site adjacent to the Tenement, it is possible that a potential impact will occur.				

Justification for the confirmation / non-confirmation of Source, Pathway and Receptor
It is possible that unrecorded Heritage items of significance may be present within the Site due to known Aboriginal Heritage within proximity.

6.1.3 Control and Management Strategies

Control and Management Strategies

• All personnel and contractors at the Site are to be inducted and training provided on associated legislative responsibilities and on the type of sites, objects and remains that may be present on the Site.
• In the event that any Aboriginal and / or European cultural heritage sites, objects or remains and / or Geological monuments are identified, the following is to occur:
  o Immediately stop work in the vicinity of find.
  o Notify the relevant authority (Government of South Australia DPC AAR), the local SA Heritage Council and DEM of the find / potential find at the Site.
• No rehabilitation operations are to recommence in the vicinity of the find until such time that liaison with the relevant authority has been undertaken and authority to operate within the area has been granted.
• Attendance of a BAC representative prior to and during the rehabilitation works along the northern half of the rehabilitation area of the Site (duration to be advised once works are planned).
• Additional surveying of rehabilitation area to be undertaken if required by BAC or findings found within northern half of the rehabilitation area.

Uncertainty and Assumptions of Control Strategies
There is low uncertainty of control and management strategies, as they are standard industry practices and are proven to be effective.
Sensitivity to change of assumptions
The sensitivity of the control measures to a change of assumptions is low given the area has been historically disturbed.

6.1.4 Proposed Environmental Outcome and Measurement Criteria

Heritage		
Quarry Phase	**Impact ID**	**Outcome**
Closure and Rehabilitation	H1	The Tenement Holder must, during closure, ensure that there is no damage, disturbance, or interference to Aboriginal and Non-Aboriginal heritage sites, objects, or remains as a result of closure and rehabilitation activities, unless prior approval under the relevant legislation is obtained.
Outcome Achievement		
1. **Outcome Achievement** Quarry management records will demonstrate BAC representative(s) conducted a Site Survey prior to and during rehabilitation activities of the rehabilitation area within the northern section of the proposed rehabilitation area (and additional sections of the rehabilitation area if requested) within **Drawing No. 5082.DRG.011R1 – Proposed Rehabilitation Plan**. Quarry Management records demonstrate that, upon discovery within the Site of any possible Aboriginal and / or Non-Aboriginal Heritage sites; and / or objects or remains;		

- Work ceased until the relevant authorities were notified and work recommenced only once authorisation was received.
- Documented evidence of potential or actual finds of Aboriginal and / or non-Aboriginal heritage objects and evidence of consultation with the relevant authority.

2. **What will be Measured and the Form of Measurement**
   Quarry Management records of Site survey and visitor logs demonstrating BAC representation onsite prior to and during rehabilitation.

   Quarry Management Logbook records of discovery and evidence that appropriate procedures were followed upon discovery.

3. **Location of Measurement**
   Survey and attendance by BAC representative (s) within the northern half of the rehabilitation area as per **Drawing No. 5082.DRG.011R1 – Proposed Rehabilitation Plan**.

   Location of heritage area/s within EML 5114.

4. **Frequency**
   Survey prior and during activities occurring within the rehabilitation area. For the duration of the rehabilitation of the northern half of the proposed area in **Drawing No. 5082.DRG.011R1 – Proposed Rehabilitation Plan**.

   Following the discovery of heritage-related items.

5. **Control / Baseline Data**
   Not applicable.

6. **Leading Indicator Criteria**
   Not applicable.

6.2 Land Use and Third-Party Property

6.2.1 Context

The Site is situated between agricultural land, industrial forestry *P. radiata* plantations, and within proximity to Glen Roy Conservation Park. The proximity of nearest sensitive receptors is outlined within **Section 2.12 Land Use** with the nearest residential dwellings located approximately 800 m west and 1.4 km south east of the Site. There is no infrastructure, including powerlines and water mains, located within proximity to the Site. Several other EMLs, of which the Tenements are held by other companies and are actively operating, are located south of the Site and a rehabilitated EML adjoining south of the Site. The Site is well shielded from receptors with existing forestry plantations within the eastern and western portions of the Site.

The proposed post-mining land use has been nominated by the landowner, for industrial pine plantations alike to the surrounding land use (forestry) and onsite plantations. Consultation with the landowner has confirmed the proposed rehabilitation strategies of a 1V:3H batter is suitable to support future land use, and that the sandy sub soil will be contoured to form safe and stable batters and available topsoil will be applied to the batters only.

Vegetation clearance for the Site shall be undertaken as per **Drawing No. 5158.DRG.013 – Native Vegetation Clearance Map**, in accordance with the relevant legislation. As per **Section 3.5 Native Vegetation**, vegetation clearance shall occur only within the Tenement boundaries to ensure no impact to adjacent land use.

6.2.2 Impact Assessment

Quarry Phase	**Potential Impact Event**			
Site Closure	Damage to third-party infrastructure, agricultural / industrial land, and adjacent land and / or property as a result of closure activities (including fire).			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
TPP1	Closure and rehabilitation activities.	Land, uncontrolled fire.	Third-party property infrastructure and agricultural / industrial land.	Yes
Uncertainty and Assumptions				
Location of third-party property and sensitive residential receptors is well understood in relation to the location of quarry closure operations. Final land use is consistent with current and adjacent land use (forestry). Land use of adjacent areas is unlikely to change.				
Sensitivity to Change				
The potential impacts to third-party property are well understood based on observations and monitoring from quarry closure operations within the adjacent Site.				
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor				
Unlikely to change.				

6.2.3 Control and Management Strategies

Control and Management Strategies
• Firefighting equipment available and firefighting exercises undertaken (training use of extinguishers, emergency response and preparedness). • Undertake hot works within designated areas in accordance with hot works permit. • No hot works (welding) during total fire ban conditions. • Where accessible, establish and maintain appropriate fire breaks (and inspect monthly throughout fire danger season). • Ensure Country Fire Service (CFS) access is available to the Site.
Uncertainty and Assumptions of Control Strategies
Control measures are considered standard practice for the quarry industry and are proven to be effective in the prevention of potential impacts.
Sensitivity to Change of Assumptions
The proposed control and mitigation strategies are well known and effective and are not considered sensitive to change.

6.2.4 Proposed Environmental Outcome and Measurement Criteria

Land Use and Third-Party Property		
Quarry Phase	**Impact ID**	**Outcome**
Rehabilitation and Closure	TPP1	The Tenement Holder must, during closure and rehabilitation activities, ensure that there are no adverse impacts to third-party land use or property on or off the land as a result of mining operations (including as a result of uncontrolled fires).
Outcome Achievement		

1. **Outcome Achievement**
   All incidents involving damage to third-party property resulting from the quarry Site are recorded in Quarry Management Logbook and investigated by a suitably qualified person within one (1) calendar month (or other time as agreed with the Mining Regulator), and the results of the investigation show that the incident could not have reasonably been prevented by the quarry closure activity.
2. **What will be Measured and the Form of Measurement**
   Records of incidents in Quarry Management Logbook and results of investigations by a suitably qualified third-party.
3. **Location of Measurement**
   Within the EML 5114 Site.
4. **Frequency**
   As required following incident/s.
5. **Control / Baseline Data**
   Not applicable.
6. **Leading Indicator Criteria**
   Not applicable.

6.3 Native Fauna

6.3.1 Context

As outlined within **Section 2.9 Fauna**, an *EPBC Act* Protected Matters Report (2023) identified 21 native fauna species which may occur within the area as outlined within **Attachment 3 – *Environment Protection and Biodiversity Conservation Act 1999* Protected Matters Report**. A *NatureMaps* (2023) search and the Site's proximity to Glen Roy Conservation Park are indicators the Site could provide significant habitat for threatened native fauna.

A Site Inspection undertaken in July 2023 identified evidence of burrows, tracks and scats of the state-listed rare species *Vombatus ursinus* (Common wombat) within the Site, whilst one (1) individual was found deceased adjacent to the Site due to a traffic incident. Prior to closure activities, camera traps shall be set for monitoring of the Common wombat. If actively present at the Site, methods of relocation will be investigated and undertaken by a suitably qualified person prior to earthworks commencing.

Native vegetation within the Site is of poor condition and is comprised of introduced species, including weed prevalence and *P. Radiata* dominating the canopy layer. Fauna inhabiting the Site and surrounds likely favours *P. radiata* dominated vegetation associations.

6.3.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Site Closure	Unauthorised damage, destruction and / or degradation to native fauna and their habitat, as a result of closure and rehabilitation activities.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
NF1	Earthworks for rehabilitation activities.	Land and native vegetation removal.	Native Fauna.	Yes
Uncertainty and Assumptions				
Previous monitoring and surveys have identified native fauna inhabiting the Site. There is uncertainty that monitoring will be successful and the ability to locate and relocate native fauna will occur.				
Sensitivity to Change				
Highly sensitive to change due to presence of native fauna onsite and migration activities.				
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor				
The potential for an environmental impact is possible due to evidence of native fauna onsite.				

6.3.3 Control and Management Strategies

Control and Management Strategies
• Ensure development follows **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan** and no vegetation clearance occurs without prior approval of the Native Vegetation Council. • Clearance of vegetation limited to **Drawing No. 5182.DRG.013 – Native Vegetation Clearance Map**. • Thorough visual inspection and assessment of Site prior to commencing rehabilitation earthworks. • Camera traps within the Site for monitoring of *Vombatus ursinus* (Common wombat) and other native fauna are to be set by authorised personnel, prior to rehabilitation earthworks. • Relocation methods of *Vombatus ursinus* (Common wombat) and other native fauna if monitoring suggests active presence within the Site, is to be conducted by a licenced contractor. • Training for mobile plant operators to ensure native fauna habitat is not cleared without prior authorisation from the relevant authority. • Vegetation clearance area for rehabilitation / closure earthworks activity to be demarcated prior to commencement of native vegetation clearance to prevent unauthorised clearance of native vegetation. • Vehicle access restricted to established roadways unless authorisation is obtained. • If native fauna presence is identified during closure and rehabilitation activities, work is to cease and a qualified third-party shall investigate methods of removal and / or relocation, prior to resuming activities.
Uncertainty and Assumptions of Control Strategies
Based upon alignment with standard industry practice uncertainty of control strategies is considered low and reasonable.
Sensitivity to Change of Assumptions
Appropriate approvals will need to be obtained under the *Native Vegetation Act 1991* for vegetation clearance. The area requiring vegetation removal is well defined within the Proposed Rehabilitation Plan

6.3.4 Proposed Environmental Outcome and Measurement Criteria

Native Fauna		
Quarry Phase	**Impact ID**	**Outcome**
Site Closure	NF1	The Tenement Holder must ensure that there are no native fauna injuries and / or deaths due to Site closure activities that could have been reasonably prevented.
Outcome Achievement		
1. **Outcome Achievement** All incidents involving injury and / or deaths of fauna resulting from quarrying operations onsite are to be recorded in a Quarry Management Logbook and investigated by a suitable third-party, to demonstrate that the incident could not have been reasonably prevented by the Tenement Holder. 2. **What will be Measured and the Form of Measurement** Quarry Management Logbook for evidence of fauna injury and / or death investigation. 3. **Location of Measurement** EML 5114. 4. **Frequency** Annually and as per incident. 5. **Control / Baseline Data** Not applicable. 6. **Leading Indicator Criteria** Not applicable.		

6.4 Native Vegetation

6.4.1 Context

As outlined within **Section 2.8 Vegetation, Weeds and Plant Pathogens**, a Site Inspection conducted in July 2023 by a Groundwork Plus Native Vegetation Accredited Consultant determined three (3) of the four (4) vegetation associations identified at the Site are in poor condition.

Established native vegetation consists of *Eucalyptus sp*. trees, with introduced species, *P. radiata*, comprising majority of the canopy layer; though not native, *P. radiata* dominates much of the surrounding area for industrial plantations.

Proposed closure of the Site will require vegetation clearance with approval from the Native Vegetation Council, to return the quarry to its desired pre-mining land use and that of surrounding areas; *P. radiata* industrial forestry plantations. As native vegetation is in poor condition and *P. radiata* already dominates the canopy, native vegetation clearance is unlikely to adversely impact fauna inhabiting the Site.

6.4.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Site Closure	Unauthorised clearance, damage and / or degradation of native vegetation and habitat as a result of closure and rehabilitation operations.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
NV1	Earthworks for rehabilitation activities.	Land.	Native Vegetation.	Yes
Uncertainty and Assumptions				
The Site has legacy safety issues with some step batters remaining that require being rehabilitated to provide a safe and stable final landform and some clearance of native vegetation is required to shape and contour the landform to 1V:3H and integrate with surrounding landform topography. The presence of native vegetation is well understood due to the vegetation assessment.				
Sensitivity to Change				
Unlikely to change, as in order for rehabilitation activities to return the land to its desired safe and stable end land use, vegetation clearance is required.				
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor				
Conceptual Final Landform Designs are well defined and closure practices are aligned with industry standard.				

6.4.3 Control and Management Strategies

Control and Management Strategies
• Ensure closure and rehabilitation activities adhere to **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan**. • No clearance of native vegetation occurs at the Site without prior approval of the Native Vegetation Council and the area identified on **Drawing No. 5182.DRG.013 – Native Vegetation Clearance Map.** • Training for mobile plant operators to ensure native vegetation is not cleared without prior authorisation. • Ensure Site is free of introduced and native fauna prior to vegetation clearance activities. • If native fauna presence is identified during closure and rehabilitation activities, work is to cease and a qualified third-party shall investigate methods of removal and / or relocation, prior to resuming activities.
Uncertainty and Assumptions of Control Strategies
Based upon alignment with standard industry practice uncertainty of control strategies is considered low and reasonable.
Sensitivity to Change of Assumptions
The area requiring vegetation removal is well defined within the Proposed Rehabilitation Plan. If the removal of native vegetation that has not been foreseen within the development of the PEPR arises, appropriate approvals will need to be obtained under the *Native Vegetation Act 1991*.

6.4.4 Proposed Environmental Outcome and Measurement Criteria

Native Vegetation		
Quarry Phase	**Impact ID**	**Outcome**
Rehabilitation and Closure	NV1	The Tenement Holder must ensure no loss of abundance and / or diversity of native vegetation on or off the land through clearance unless a Significant Environmental Benefit has been approved in accordance with the *Native Vegetation Act 1991*.
Outcome Achievement		
1. **Outcome Achievement** Visual inspection and photographic evidence undertaken annually and at the completion of each stage of vegetation clearance by a suitably qualified person confirms that no clearance has occurred outside of the areas defined within **Drawing No. 5182.DRG.013 – Native Vegetation Clearance Map**. 2. **What will be Measured and the Form of Measurement** Vegetation clearance through records of Site inspections, photographic evidence, and vegetation removal approval documentation. 3. **Location of Measurement** Within EML 5114. 4. **Frequency** At the completion of each stage of vegetation clearance. 5. **Control / Baseline Data** Not applicable. 6. **Leading Indicator Criteria** Not applicable.		

6.5 Weeds, Pests and Plant Pathogens

6.5.1 Context

As outlined within **Section 2.8 Vegetation, Weeds and Plant Pathogens**, herbaceous weeds are present throughout the Site, there is also the prevalence of *Pinus radiata*, which makes up majority of the canopy layer. The Site is located within a Moderate Phytophthora Risk area, although there are no records within proximity.

During consultation weed management was raised as a concern by Department for Environment and Water and requested all plant be clean prior to use onsite and cleaned prior to removal from Site to ensure potential cross contamination / introduction of weeds does not occur in the area.

6.5.2 Impact Assessment

Quarry Phase	**Potential Impact Event**			
Rehabilitation and Closure	Introduction and / or spreading of declared weed or pest species, or plant pathogens as a result of rehabilitation activities.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
W1	HME and light vehicles.	Movement of vehicles on roads, spreading weeds.	Operational / rehabilitated areas.	Yes
Uncertainty and Assumptions				
The Site is located within a Moderate Phytophthora Risk area, although there are no records within proximity. Presence of herbaceous weeds were noted during Site visit.				
Sensitivity to Change				
The presence of weed species within the Site may change depending upon seasonal variations and climatic conditions.				
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor				
Quarry Sites by their nature contain a lot of exposed soil that is often prone to weed infestation.				

6.5.3 Control and Management Strategies

Control and Management Strategies
• All earthmoving equipment will be clean and weed free prior to being transported to and from the Site. • Controlling weed infestations to prevent further spread of weeds. • Final weed spraying campaign throughout the Site and rehabilitated areas undertaken as necessary and in consultation with the landowner. • Restrict movement of vehicles and machinery to project area and established access tracks where vehicle movements can be concentrated.
Uncertainty and Assumptions of Control Strategies
Declared weed and pest species will be controlled through inspection and implementation of controls. The strategies are considered to be industry standard practice.
Sensitivity to Change of Assumptions
Weed and pest controls are well established and prove to be effective where implemented.

6.5.4 Proposed Environmental Outcome and Measurement Criteria

Weeds, Pests and Plant Pathogens		
Quarry Phase	**Impact ID**	**Outcome**
Rehabilitation and Closure	W1	The Tenement Holder must during rehabilitation and post completion, ensure no introduction of new species of environmental weed, plant pathogens or pests (including feral animals), nor sustained increased in abundance of existing weed or pest species on the land.
Outcome Achievement		
1. **Outcome Achievement** Records of inspection undertaken prior to tenement relinquishment, demonstrate no introduction of new weeds, pests or plant pathogens, nor an increase in abundance of existing weeds and pests onsite. 2. **What will be Measured and the Form of Measurement** Quarry management records will demonstrate weed management undertaken during rehabilitation works. Record of final inspection report 12 months post completion of rehabilitation activities. 3. **Location of Measurement** Within EML 5114. 4. **Frequency** As required prior to during rehabilitation activities. Once prior to tenement relinquishment 12 months post rehabilitation works. 5. **Control / Baseline Data** Not applicable. 6. **Leading Indicator Criteria** Not applicable.		

6.6 Air Quality

6.6.1 Context

Section 2.15 Dust And Air Quality describes the Site as located within a forestry operation and adjacent to forestry plantations, within proximity to operational EMLs (EML 5110 and 5112) in current production where low levels of dust may be generated and historic rehabilitated EMLs. Other sources of dust are generated from adjacent viticulture and agriculture in the area and use of unsealed roads that occurs within the wider region. The nearest sensitive residential receptors are identified as one (1) approximately 800 m west and one (1) approximately 1.8 km south-east of the Site.

Potential dust-generating activities onsite are limited to earthworks from the one (1) HME dozer operator to achieve final landform and will be relatively short in duration (approximately two (2) to three (3) weeks) with no ongoing dust generation.

6.6.2 Impact Assessment

Quarry Phase	**Potential Impact Event**			
Site Closure	Potential for nuisance dust emissions generated by operational activities to negatively impact on sensitive receptors (residents).			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
AQ1	Earthworks for rehabilitation of Site	Air	Sensitive Residential Receptors as per **Drawing No. 5182.DRG.012 – Land Access Map**	No
Uncertainty and Assumptions				
There is a lack of residential receptors within proximity to the Site. Additionally, the Site has limited receptors due to the Site being well shielded by current forestry plantations onsite and are unlikely to receive impacts from dust. Additionally, the Site is located in proximity to active EMLs 5110 and 5112 that would be contributing the greater levels of dust. Localised activities from forestry, viticulture, agricultural and nearby extractive operations are generating potential sources of regular dust. Duration and intensity of activity is minimal (two (2) to three (3) weeks duration). Closure impacts are not expected as the Site is currently demonstrating successful natural revegetation of the Site which will assist stabilisation of batters and pit floors. Receptors such as road users and nearby vineyards were assessed as potential receptors, however the low intensity of the activity, infrequent users of the local road and the vineyards indicated that impacts to these receptors is not reasonably foreseeable to occur, as such they are not included within the impact assessment as a receptor. **Attachment 1 – Wind Rose Data Coonawarra BoM Station (No. 026091)** shows that morning wind direction is predominately from the north, and afternoon wind direction is predominately from the west, south west directing away from the nearest sensitive residential receptors.				
Sensitivity to Change				
Dust emissions from the application area may be influenced by changes to climatic conditions.				
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor				
The low impact of operations, restricted landform rehabilitation activities, short duration of activities and distance to nearest sensitive residential receptor is such that dust will not impact receptors.				

6.7 Noise

6.7.1 Context

As per **Section 2.12 Proximity to Infrastructure and Housing**, there are two (2) residential dwellings located within two (2) km of the Site; one (1) approximately 800 m west and one (1) approximately 1.8 km south-east of the Site, refer to **Drawing No. 5182.DRG.012 – Land Access Map**.

A winery is located approximately 1.9 km to the south of the Site. To the west of the Site is vineyards and irrigated crops which house irrigation booms.

Several other EMLs are located to the south of the Site, with some containing current extractive activities.

Noise generated onsite from closure activities will be limited to truck movements and Site machinery used for shaping the final landform i.e. a bulldozer. These works will be undertaken within the operational hours listed below over a short campaign period of approximately two (2) weeks:

- Monday – Friday: 7:00am – 6:00pm

6.7.2 Impact Assessment

Quarry Phase	**Potential Impact Event**			
Site Closure	Potential for noise generated from quarry operations to negatively impact on sensitive receptors (residents).			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
N1	Noise generated from HME, truck movements, operations	Air	Sensitive Residential Receptors as per **Drawing No. 5182.DRG.012 – Land Access Map**.	No
Uncertainty and Assumptions				
The low impact of operations, short campaign based duration of rehabilitation activities and the distance to the nearest sensitive receiver is such that noise emissions are unlikely to significantly impact the receivers identified on **Drawing No. 5182.DRG.012 – Land Access Map**. Receptors such as road users and nearby vineyards were assessed as potential receptors, however the low intensity of the activity, infrequent users of the local road and the vineyards indicated that impacts to these receptors is not reasonably foreseeable to occur, as such they are not included within the impact assessment as a receptor. The Site is well shielded by forestry plantations, viticulture, agricultural and extraction activities contributing as the main source of noise within the area. There will be no regular trucks movements onsite or to and from the Site, reducing noise impacts. Operational hours for rehabilitation works are Monday – Friday 7.00am to 6.00pm.			
Sensitivity to Change				
Not likely to change.				
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor				
The low impact of operations, reduced operational hours and short duration of activities and distance to nearest sensitive residential receptor is such that noise is not going to impact receptors.				

6.8 Public Safety

6.8.1 Context

As stated within **Section 6.2 Land Use and Third-Party Property**, the surrounding land use of the Site is mostly comprised of forestry for pine plantations and accessed by local road users. Upon closure and rehabilitation, the Site will be further utilised for pine plantations by extending the areas already established within the EML.

Rehabilitation activities are consistent with adjacent rehabilitated EML 5113 with the long term establishment of pine forestry.

As outlined in **Section 3.6 Description of Quarry Site at Completion,** the closure of the disused Site requires operational activities such as vegetation clearance and earthworks, prior to the Site being handed back to the property lease holder to return the Site to its desired land use (forestry).

Terminal faces are to be battered at an angle of 1V:3H (as agreed with future land leaseholders – refer to **Attachment 7 -Landowner Consultation**) to enable the Site to blend with its surroundings, maintaining the natural contours of the Site and ensuring a safe and stable landform is achieved. Consultation with the landowners OneFortyOne have confirmed the amended batter to 1V:3H and planned rehabilitation activities are acceptable to support the desired end land use requirements.

6.8.2 Impact Assessment

Quarry Phase	**Potential Impact Event**			
Site Closure	Potential for public injury and / or death due to members of the public entering the Site.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
PS1	Onsite landform	Unauthorised public entry into the Tenement	Members of the public	Yes
Uncertainty and Assumptions				
Rehabilitation activities shall be undertaken in accordance with the Proposed Rehabilitation Plan, to ensure the Site is suitable for its pine plantation post-mining land use whilst also providing a safe and stable landform, heavily mitigating the potential for impact to public safety. It is unlikely the Site will experience trespassers as the Site is located on an unsealed road accessed primarily by local road users or contractors of the forestry operations and the Site is adjacent to a rehabilitated EML, forestry plantations and agricultural activities.				
Sensitivity to Change				
Final land use and rehabilitation plans are unlikely to change with return to land use consistent with adjacent land use and agreed to by landowner / property lease holder.				
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor				

Although the risk of trespassers entering the Site is limited due to its location, it cannot be absolutely ruled out therefore a pathway and receptor remain present.

6.8.3 Control and Management Strategies

Control and Management Strategies
• Adherence to **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan** and cross sections. • All quarry related infrastructure (scrap metal, parts etc.) will be removed from Site unless agreed in writing by the landowner. • Terminal faces will be battered down to adhere with a 1V:3H batter. • Contoured areas and battered walls to be compacted via HME trafficking the area to establish safe and stable final batters. • Ensure that Site fencing, signage and gates are well maintained and in good working order.
Uncertainty and Assumptions of Control Strategies
Based upon alignment with standard industry practice uncertainty of control strategies is considered low and reasonable. The final landform has been agreed upon with the current landowner during consultation.
Sensitivity to Change of Assumptions
Unlikely to change.

6.8.4 Proposed Environmental Outcome and Measurement Criteria

Public Safety		
Quarry Phase	**Impact ID**	**Outcome**
Rehabilitation	PS1	No public injuries and / or deaths resulting from unauthorised entry into the completed final landform that could have been reasonably prevented.
Outcome Achievement		
1. **Outcome Achievement** All incidents involving public injury and/or deaths resulting from unauthorised access to the quarry Site are to be recorded in a quarry log book and investigated by a suitably qualified third party within one (1) calendar month (or other time as agreed with the Mining Regulator) and the results of the investigation show that the incident could not have been reasonably prevented by the Tenement Holder. 2. **What will be Measured and the Form of Measurement** Records of unauthorised access and outcome of investigations. 3. **Location of Measurement** Within EML 5114. 4. **Frequency** As per incident. 5. **Control / Baseline Data** Not applicable. 6. **Leading Indicator Criteria** Not applicable.		

Public Safety		
Quarry Phase	**Impact ID**	**Outcome**
Post Completion	PS2	No public injuries and / or deaths resulting from the completed final landform post quarry completion.
Outcome Achievement		

1. **Outcome Achievement**
   A site inspection and report from a suitably qualified person completed once upon completion of final rehabilitation work verifies that all slopes are:
   • battered to at least a 1V:3H ratio;
   • vegetated;
   • have been constructed as designed as per **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan**; and are geotechnically stable.
2. **What will be Measured and the Form of Measurement**
   Quarry Management records for evidence of final Site Inspection Report 12 months after final rehabilitation activities, demonstrating compliance with rehabilitation plans and stability of battered walls remain 1V:3H.
3. **Location of Measurement**
   Within EML 5114 rehabilitated area.
4. **Frequency**
   Once prior to EML revocation 12 months post completion of rehabilitation works.
5. **Control / Baseline Data**
   Not applicable.
6. **Leading Indicator Criteria**
   Not applicable.

6.9 Topsoil

6.9.1 Context

As stated within **Section 6.2 Land Use and Third-Party Property**, the surrounding land use of the Site is mostly comprised of forestry for pine plantations. Upon closure and rehabilitation, the Site will be further utilised for pine plantations by extending the areas already established within the EML.

Rehabilitation activities are consistent with adjacent disused EML 5113 with batter angles to a safe and stable 1V:3H batter via contouring and reapplication of available of cut and fill materials and available topsoils applied to the batter.

A desktop estimate was undertaken on the final landform plan, there is potentially 5,000 m2 of area that could contain topsoil for rehab purposes from existing stockpiles and newly won topsoil from undisturbed areas.

Thickness for rehabilitation is calculated at 0.5 metre as per the lease.

Topsoil required for Rehab areas:
Walls / batter slopes covers 11,500 m2 = 5,750 m3 of topsoil.
Floor area is 7,200 m2 = 3,600 m3 of topsoil.

Factors that have been considered for rehabilitation are:

- The lease conditions from that time period had a more generic thickness included as a minimum and was not calculated based on actual depth vs area etc.
- The majority of the Site has been extracted and the remaining works are reshaping and use of historic topsoil bunds and any material won through proposed earthworks (as calculated above).
- The surrounding landforms also contains minimal topsoil and shows signs of successful revegetation, as does the Site.

This is a desktop assessment, and on ground activity will fully determine the available amounts. Topsoil extracted during rehab works will be temporarily stored separately for reapplication.

Discussions were held with the Landowner and it was also agreed the sub soil that is being cut in order to create the appropriate batters will be used for rehabilitation of the batters and pit floor as this is currently supporting natural revegetation and has also in the adjacent rehabilitated EML.

Therefore, with landowner agreement, the topsoil and sub soil applied to the batters and remaining amounts on pit floor will support the final end land use of forestry, and remains consistent with adjacent rehabilitated landform. The Site will be allowed to naturally revegetate post earthworks, to support topsoil stability, but as the planned activities upon handover to Landowner (who will then maintain the site via weed slashing) will be to extend forestry planting, no specific trees or shrubs will be required to be planted as part of the rehabilitation works.

6.9.2 Impact Assessment

Quarry Phase	**Potential Impact Event**			
Site Closure	Insufficient application of topsoil on rehabilitated batters resulting in failed rehabilitation.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
TS1	Closure and rehabilitation activities.	Land, mobile plant.	Rehabilitated land.	Yes
Uncertainty and Assumptions				
Rehabilitation activities shall be undertaken in accordance with the Proposed Rehabilitation Plan, to ensure the Site is suitable for its post-mining land use (pine plantation). The landowner has agreed to a 1V:3H final landform batter and rehabilitation activities. The landowner has agreed to application of sub soil and limited topsoil to wall batters. Site conditions and adjacent land are currently demonstrating successful regeneration of vegetation (natural and pine). The Site will be allowed to naturally revegetate post earthworks, to support topsoil stability, but as the planned activities upon handover to Landowner (who will then maintain the site via			

weed slashing) will be to extend forestry planting, no specific trees or shrubs will be required to be planted as part of the rehabilitation works. There is limited topsoil (historical and current profile) available for rehabilitation. It has been assessed that the Site's rehabilitation activities support the final end use of forestry plantation and is consistent with rehabilitation activities undertaken on adjoining rehabilitated EML 5113. The subsoil and topsoil from within the Site will be used in the shaping and contouring of the wall batters. The soil quality is currently acceptable and supporting pine growth within the EML as demonstrated by regrowth of pine and native vegetation within the historically disturbed areas. There is no commitment to bring in alternate topsoil as agreed to by the landowner.
Sensitivity to Change
Final land use and rehabilitation plans are unlikely to change with return to land use consistent with adjacent land use and agreed to by landowner / property lease holder.
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor
Proposed Rehabilitation plans are well defined, and closure practices are aligned with industry standard.

6.9.3 Control and Management Strategies

Control and Management Strategies
• Adherence to **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan** and cross sections. • Previously stored and additional stripped topsoil and subsoils shall be dispersed at the Site to encourage rehabilitation. • Terminal faces will be battered down and compacted by HME to adhere with the natural contours of the Site to a 1V:3H prior to topsoil application. • Application of sub soils and available topsoil to wall batters primarily. • Topsoil to be scarified after application to encourage natural revegetation. • Areas rehabilitated with topsoil to be avoided by plant and machinery once applied.
Uncertainty and Assumptions of Control Strategies
The degree of topsoil in the newly disturbed areas is unknown however the final landform has been agreed upon with the current landowner during consultation.
Sensitivity to Change of Assumptions
Proposed Rehabilitation Plan is based on whole of Site closure and rehabilitation activities and final land use which could be altered in the future but unlikely.

6.9.4 Proposed Environmental Outcome and Measurement Criteria

Topsoil		
Quarry Phase	**Impact ID**	**Outcome**
Site Closure	TS1	The tenement holder must ensure there is no contamination of land and soils either on or off the land post completion as a result of mining operations.
Outcome Achievement		
1. Outcome Achievement Following rehabilitation works, topsoil application will be inspected by a suitably qualified person to verify that topsoil is of a suitable quality and application, sufficient to ensure long term establishment and success of proposed final landform. Application of topsoil remains stable and minimal erosion scour has occurred 12 months post rehabilitation works. **2. What will be Measured and the Form of Measurement** Quarry Management records for evidence of final Site Inspection Report demonstrates final batter and topsoil remains intact and revegetation has commenced 12 months post rehabilitation works. Visual assessment of the rehabilitated as part of the final inspection report, demonstrates minimal erosional scour has occurred. **3. Location of Measurement** Areas undergoing rehabilitation. Topsoil application areas. **4. Frequency** 12 months after rehabilitation works as part of EML revocation application process. **5. Control / Baseline Data** Not applicable. **6. Leading Indicator Criteria** Not applicable.		

6.10 Traffic

6.10.1 Context

Traffic movements will be minimal and limited to mobilisation of a Dozer to Site at commencement of the works and completion of the work.

Access for personnel to the Site will be via light vehicle (approximately two (2) movements per day) at the Site access point illustrated within **Drawing No. 5182.DRG.014 – Site Access Map**. Site rehabilitation works are expected to take approximately two (2) weeks to complete.

6.10.2 Impact Assessment

Quarry Phase	**Potential Impact Event**			
Site Closure	Risk of collision between public road users and vehicles entering and exiting the Site on Edenhope Road.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
T1	Vehicles entering and exiting the Site during closure activities.	Site access point.	Road users.	Yes.
Uncertainty and Assumptions				
There is no planned haulage from the Site. Traffic movements will be minimal and limited to mobilisation of the Dozer to Site at commencement of the works and completion of the work. Access for personnel to the Site will be via light vehicle (approximately two (2) movements per day).				
Sensitivity to Change				
The volume of traffic movement during closure activities is considered to be well understood and is unlikely to change.				
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor				
Closure activities are not considered to significantly increase traffic movements at Site access points, however impact cannot be fully eliminated.				

6.10.3 Control and Management Strategies

Control and Management Strategies
• Vehicles are to be well maintained and roadworthy • Earthmoving equipment will be retained at the Site until closure activities have been completed. • Trucks transporting earth moving equipment are to ensure that their load is appropriately secured before leaving the Site. • Personnel onsite during closure activities are to be made aware of the dangers when operating around equipment such as bulldozers and are to be appropriately inducted.
Uncertainty and Assumptions of Control Strategies
Based upon alignment with standard industry practice, uncertainty of control strategies is considered low and reasonable.
Sensitivity to Change of Assumptions
Unlikely to change.

6.10.4 Proposed Environmental Outcome and Measurement Criteria

Traffic		
Quarry Phase	**Impact ID**	**Outcome**
Closure	T1	The Tenement Holder must ensure that there are no traffic related incidents involving the public during closure activities at Site access points which could have been reasonably prevented by the Tenement Holder..
Outcome Achievement		
1. **Outcome Achievement** All traffic accidents resulting in public injury and/or death at quarry access points will be investigated by a suitably qualified independent third party within one (1) calendar month (or other time as agreed with Mining Regulator) and the results of the investigation show that the incident could not have been reasonably prevented by the Tenement Holder. 2. **What will be Measured and the Form of Measurement** Quarry Management records for evidence of investigation and outcomes of report. 3. **Location of Measurement** At location of incident. 4. **Frequency** As per incident. 5. **Control / Baseline Data** Not applicable. 6. **Leading Indicator Criteria** Not applicable.		

6.11 Waste

6.11.1 Context

The closure activities will not generate wastes onsite. Machinery will be serviced offsite and refuelled prior to mobilisation to Site. Any domestic wastes from Contractors will be disposed of daily (removal offsite) and disposed appropriately.

The Site currently contains no historical mining wastes or plant located onsite.

6.11.2 Impact Assessment

Quarry Phase	**Potential Impact Event**			
Site Closure	Potential for impact to the land and land user post mining as a result of inappropriate waste management at Site closure.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
W1	Commercial and industrial waste produced during closure activities.	Spill to Land.	Rehabilitated land, post quarry land users.	Yes

Uncertainty and Assumptions
There will be no onsite chemical or fuel storage during closure activities, with servicing and refuelling undertaken offsite prior to mobilisation to Site. Minor volume of hydrocarbon liquids onsite during the rehabilitation activities will be restricted to those contains within machinery and potentially mobile refuelling activities. All domestic waste onsite (food scraps) will be removed daily and disposed offsite appropriately by the contractors. The Site does not currently contain any rubbish or historical mining plant or equipment, and it is not planned for any plant or waste to be generated onsite or left onsite. There will be no chemicals, fuels or hydrocarbons stored onsite. Spill kits will be available for use onsite for minor spills (if experienced). All plant will be fuelled prior to mobilisation to Site.
Sensitivity to Change
Final land use and rehabilitation plans are unlikely to change with return to land use consistent with adjacent land use and agreed to by landowner / property lease holder.
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor
Although it is noted there is no minor waste material that may be generated during proposed activities, its reasonable to expect a source, pathway and receptor could occur.

6.11.3 Control and Management Strategies

Control and Management Strategies
- Any spill of potential contaminants shall be cleaned up immediately. - Spill kits will be available for use onsite. - Any waste that is generated from minor maintenance of plant and equipment is removed by the contractors undertaking the work. - Dispose of contaminated containment and / or absorbent material and any impacted surface soils in accordance with *EPA Guideline: EPA 378/13 Disposal of used hydrocarbon absorbent materials, August 2013*. - Adherence to **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan** and pit floor levels.
Uncertainty and Assumptions of Control Strategies
There is a low degree of uncertainty and assumptions pertaining to the control and management strategies which are considered reasonable and industry standard practice.
Sensitivity to change of assumptions
Not likely to change.

6.11.4 Proposed Environmental Outcome and Measurement Criteria

Waste Management		
Quarry Phase	**Impact ID**	**Outcome**
Closure	WM1	The Tenement Holder must, during post completion, ensure that all commercial, industrial and domestic waste produced as a result of mining operation is disposed of in accordance with relevant legislation.
Outcome Achievement		

1. **Outcome Achievement**
   Closure inspections to confirm no contaminated soil remains onsite.

   Any items of quarry related waste (scrap metals, parts, tyres, bearing, etc.) have been removed (unless agreed in writing with the landowner).

   Closure inspection report demonstrated final landform has been constructed as per **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan**.

2. **What will be measured and the form of measurement**
   Site inspection records, photographic evidence and or landowner agreement.
   Records of spill management.

3. **Location of measurement**
   EML 5114.

4. **Frequency**
   Once prior to the EML revocation application.

5. **Control / Baseline Data**
   Not applicable.

6. **Leading Indicator Criteria**
   Not applicable.

6.12 Surface Water

6.12.1 Context

As stated within **Section 2.7 Surface Water** the Site is not located within any Prescribed Water Resource Areas, within a water protection area, or within the Murray Darling Basin.

There are no mapped surface water courses or water bodies within the Site (*NatureMaps,* 2023). Currently, water is captured within the existing pit, and rehabilitation plans will continue to support the capture of surface water for absorption or naturally evaporate.

As outlined in **Section 3.6 Description of Quarry Site at Completion,** the closure of the disused Site requires operational activities such as vegetation clearance and earthworks, prior to the Site being handed back to the property lease holder to return the Site to its desired land use. Terminal faces are to be battered at an angle of 1V:3H to enable the Site to blend with its surroundings, maintaining the

natural contours of the Site and ensuring a safe and stable landform is achieved. Consultation with the landowners OneFortyOne have confirmed the amended batter to 1V:3H and planned rehabilitation activities are acceptable to support the desired end land use requirements.

Specific revegetation activities such as planted vegetation cover (grasses, shrubs and trees) has not be requested by the Landowner as the Site will be incorporated into their forestry activities. The landowner will maintain the land (weed management etc) in accordance with their requirements and timing for plantation of pines in the future.

6.12.2 Impact Assessment

Quarry Phase	**Potential Impact Event**			
Rehabilitation works	Potential for discharge of silt laden surface water onto adjacent land.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
SW1	Disturbed land, surface water runoff.	Overland flow.	Adjacent land.	No.
Uncertainty and Assumptions				
The landowner has agreed to a 1V:3H final landform batter and rehabilitation activities. This will allow for the Site's rehabbed area to collect surface water run off to naturally absorb or evaporate within the floor of the rehabilitated area. There will be no offsite discharge of surface water from disturbed areas.				
Sensitivity to Change				
Final land use and rehabilitation plans are unlikely to change with return to land use consistent with adjacent land use and agreed to by landowner / property lease holder.				
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor				
In accordance with the proposed final landform, surface water will be retained within the Site. Hence, there is no pathway and therefore no impact to the receptor.				

Quarry Phase	**Potential Impact Event**			
Post Closure	Potential for discharge of silt laden surface water onto adjacent land post completion due to erosion of rehabilitated surfaces.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
SW2	Surface water runoff.	Overland flow.	Rehabilitated land.	Yes.
Uncertainty and Assumptions				
The landowner has agreed to a 1V:3H final landform batter and rehabilitation activities. The landowner has agreed to application of sub soil and limited topsoil to wall batters. This will also allow for the Site rehabbed area to collect surface water run off to naturally absorb or evaporate within the rehabilitated floor area. There will therefore be no offsite discharge of surface water.				

A batter of 1V:3H is sufficient to provide stability of battered wall faces and rehabilitation application of sub soils and topsoil. Natural revegetation has been historically (and is currently) demonstrated to occur in sub soils and topsoil stockpiles and will be encouraged to occur in rehabilitated landform.
Sensitivity to Change
Climate conditions may affect amount of surface water run off the Site receives post rehabilitation works.
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor
It is likely a source, pathway and receptor could be present.

6.12.3 Control and Management Strategies

Control and Management Strategies
• Adherence to **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan** and cross sections ensuring a 1V:3H batters. • Terminal faces will be battered down to adhere with the natural contours of the Site to a 1V:3H. • Application of sub soils which are compacted prior to application of available topsoil to wall batters. • Scarification of topsoil after application to encourage natural revegetation and reduce erosion impacts. • Allow are to naturally revegetate in line with adjacent landforms. • All wastes generated by closure activities to be removed offsite and disposed of correctly.
Uncertainty and Assumptions of Control Strategies
Based upon alignment with standard industry practice uncertainty of control strategies is considered low and reasonable. The final landform has been agreed upon with the current landowner during consultation.
Sensitivity to Change of Assumptions
Proposed Rehabilitation Plan is based on whole of Site closure and rehabilitation activities and final land use which could be altered in the future but unlikely.

6.12.4 Proposed Environmental Outcome and Measurement Criteria

Surface Water		
Quarry Phase	**Impact ID**	**Outcome**
Post Completion	SW2	The tenement holder must ensure there is no adverse impact on surface water quantity or quality as a result of rehabilitation and closure activities.
Outcome Achievement		
1. Outcome Achievement An inspection and report from a suitably qualified person conducted 12 months post rehabilitation and once prior to surrender application will verify that the final landform has been constructed as designed with 1V:3H batters, remains stable and is naturally revegetating as shown in **Drawing No. 5182.DRG.011R1 – Proposed Rehabilitation Plan**.		

2. **What will be measured and the Form of Measurement**
   Quarry Management records for evidence of final Site Inspection Report.
3. **Location of Measurement**
   Rehabilitated area within EML 5114.
4. **Frequency**
   12 month post rehabilitation works and once prior to EML revocation.
5. **Control / Baseline Data**
   Not applicable.

6. **Leading Indicator Criteria**
   Not applicable.

6.13 Groundwater

6.13.1 Context

As stated within **Section 2.6 Groundwater** the Site is not located within a Prescribed Water Resource Area but is located within the Lower Limestone Coast Prescribed Wells Area. Review of SARIG (2023) identified no aquatic or terrestrial Groundwater Dependent Ecosystems (GDE) within the Site. Terrestrial GDEs are located adjacent north and west of the Site as "Moderate potential GDEs comprising of *Eucalyptus fasciculosa* woodland and *Eucalyptus arenacea/baxteri* woodland" located mostly within the Glen Roy National Park.

Water Wells 7023-4084, 7023-4696, and 7023-6381 have been positioned at similar elevation to those recorded within the lowest point on Site, in the existing pit floor, to provide a comparison on expected depth to groundwater ranging from 56.09 to 57.61 m AHD. These wells have recorded SWL between 3 m BGL and 4.3 m BGL. Therefore, with the proposed final pit floor level at 62 m AHD approximately 4.39 m AHD – 5.91 m AHD buffer to reported well data levels would be expected.

Site investigations by Groundwork Plus on 06 June 2023 did not identify any intersection with groundwater. As actions onsite will be focussed on landform rehabilitation with no extraction to occur below 62 m AHD, there will continue to be no interception of groundwater as a result of the proposed rehabilitation. As discussed in **Section 6.11 Wastes** there is no planned storage of fuels, oils or hydrocarbons onsite, machinery will be serviced offsite and refuelled prior to mobilisation to Site.

6.13.2 Impact Assessment

Quarry Phase	**Potential Impact Event**			
Site Closure	Rehabilitation works impact groundwater quantity and quality affecting groundwater users and GDEs.			
Impact (ID)	**Source**	**Pathway**	**Receptor**	**Confirmation of the source pathway and receptor (Y/N)**
GW1	Closure and rehabilitation activities, spill to land.	Groundwater .	Groundwater users and GDEs within proximity.	No
Uncertainty and Assumptions				
Site inspections confirm there has been no interception of groundwater and there is no planed increase in depth of pit. Rehabilitation activities shall be undertaken in accordance with the Proposed Rehabilitation Plan to a final floor level of 62 m AHD. Wells positioned at a similar elevation to the Site show depth to groundwater ranging from 56.09 to 57.61 m AHD and with the proposed final pit floor level at 62 m AHD, approximately 4.39 m AHD – 5.91 m AHD buffers to reported well data levels would be expected. There is no direct connection from the landform to the groundwater table. There will be no chemicals, fuels or hydrocarbons stored onsite. Spill kits will be available for use onsite for minor spills (if experienced). All plant will be fuelled prior to mobilisation to Site.				
Sensitivity to Change				
Not likely to change. Rehabilitation plans show no increase in depth of final floor levels.				
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor				
There is no direct pathway for spills to enter the groundwater table from proposed activities, and no decrease in buffer distances to the groundwater tables. Therefore, a source or pathway is not confirmed.				

7 Operator Capability

Boral is the largest integrated construction materials company in Australia, producing and selling a broad range of construction materials, including quarry products, cement, concrete, asphalt, and recycled materials. With approximately 10,300 employees and contractors, Boral's footprint includes over 367 sites operated nationwide.

Boral's priorities and approach to managing health, safety, and environment (HSE) are guided by group-wide strategic objectives and supported by contributing programs. Each division is responsible for implementing its own HSE strategies and improvement plans, consistent with Boral's group-wide HSE strategy.

Boral holds quality management system certification to International Organization for Standardization (ISO) *ISO 9001:2015 – Quality management systems—Requirements* for its operations.

Boral has been successfully operating the Comaum Sand Pit as well as several other sites in South Australia and is committed to achieving regulatory requirements and relevant environmental outcomes at the Site. Boral has the appropriate experience, processes, and procedures in place to be able to achieve the environmental outcomes for the Site.

8 Lease / Licence Conditions

Table 6 – Lease / Licence Conditions summarises the lease / licence conditions that apply to the EML 5114 and where they have been addressed within the PEPR.

Table 6 – Lease / Licence Conditions

Condition	Comments
First Schedule	
1. Mining operations may be carried out to a level 0.5 metres (m) above the winter water table level, in accordance with the written approval of the Chief Inspector of Mines.	Refer to **Section 2.6 – Groundwater and Section 6.13 Groundwater.** Wells positioned at a similar elevation to the Site show depth to groundwater ranging from 56.09 to 57.61 m AHD. and with the proposed final pit floor level at 62 m AHD approximately 4.39 m AHD – 5.91 m AHD buffer to reported well data levels would be expected.
2. The mined area is to be progressively backfilled with a minimum thickness of 0.5 m of topsoil.	**Section 3.6 Description of Quarry Site** discusses the proposed rehabilitation of the Site. **Section 6.9 Topsoil** includes an impact assessment for Site closure activities and discusses the limited topsoil (historical and current profile) available for rehabilitation. It has assessed that the Site's rehabilitation activities support the final end use of forestry plantation and is consistent with rehabilitation activities undertaken on adjoining rehabilitated EML 5113. Additionally refer to **Section 4.3.4 Final Landform** for Landowner consultation regarding the final rehabilitated landform and use of available topsoil.
3. The final batter slope of terminal faces is to be a slope of one (1) in five (5), unless otherwise approved by the Chief Inspector of Mines.	Refer to **Section 3.6 – Description of Quarry Site at Completion**, the final batter slope of terminal faces has been assessed through surveys of the land and consultation has occurred with the future leaseholders, OneFortyOne, upon surrender of the EML. **Section 4.3.4 Final Landform** demonstrates consultation has occurred between Tenement Holder and OneFortyOne of which confirms 1V:3H batters will support the proposed land use.
Second Schedule	
1. The lessee shall not erect any buildings or washing plant without the prior approval of the Minister.	There are no buildings, infrastructure and / or services located within the Site.

2. Without limiting the generality of or derogating from clause 6(12) of this agreement, the lessee shall comply with the provisions of the *Mines and Works Inspection Act 1920* (SA), the regulations made thereunder, or any lawful direction given by an inspector pursuant to the provisions of that Act, the *Country Fires Act 1976*, the *Forestry Act 1950* (SA), or any legislation amending, repealing, or replacing any or all of these acts.	Refer to **Section 6.2 Land Use and Third-Party Property** for control and management strategies.

9 Reference List

Department for Housing and Urban Development 2024, Browse the Planning and Design Code, Plan SA, viewed 5 July 2024, https://code.plan.sa.gov.au/home/browse_the_planning_and_design_code?PubID=1&DocNodeID=%2BJ3arSAaxPU%3D&DocLevel=2.

WaterConnect, (2024), Government of South Australia, https://www.waterconnect.sa.gov.au/Systems/GD/Pages/Default.aspx, viewed September 2024.

Bureau of Meteorology (2024), Australian Government, viewed September 2024 http://www.bom.gov.au/climate/averages/tables/cw_026091.shtml

South Australian Resources Information Gateway (2024), *Department for Energy and Mining,* South Australian Government, viewed October 2024, <https://map.sarig.sa.gov.au/>.

Nature Maps (2024) Government of South Australia, viewed September 2024, http://spatialwebapps.environment.sa.gov.au/naturemaps/?locale=en-us&viewer=naturemaps,

DRAWINGS

GROUNDWORK
PART OF SLR

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Wimmera Highway
Naracoorte Township
Riddoch Highway
Riddoch Highway
Casterton-Naracoorte Rd
Edenhope-Penola Rd
Edenhope Rd
Site
Riddoch Highway
Coonawarra Township
Riddoch Highway
Penola Township

Legend

- Site
- Penola Township
- Naracoorte Township
- Coonawarra Township
- Access Route
- Riddoch Highway
- SA-VIC Border

Google Satellite

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Photography: Google Satellite Imagery accessed: 26-June-2024
Topography:
Cadastre: Data.sa.gov.au; Boundaries shown are indicative only
Ecosystem:
Other: SARIG, 2024

N

PROJECT: Comaum Sand Pit

CLIENT: Boral Resources (SA) Ltd

TITLE: Site Location Map

GROUNDWORK PART OF SLR
PH +61 3871 0411
WWW.GROUNDWORK.COM.AU

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CREATED: 26 July 2023

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Topography: Groundwork Plus Pty Ltd, UAV Survey, 2023/06/21, DTM 10cm
Cadastre: © The Government of South Australia (DIT) 2021
Ecosystem:
LiDAR/Other:

Legend:
- Cadastral Boundary
- Extractive Mineral Lease

PROJECT: Comaum

CLIENT: Boral Resources (SA) Ltd

TITLE: Orthophoto and Topography (2023-06-21)

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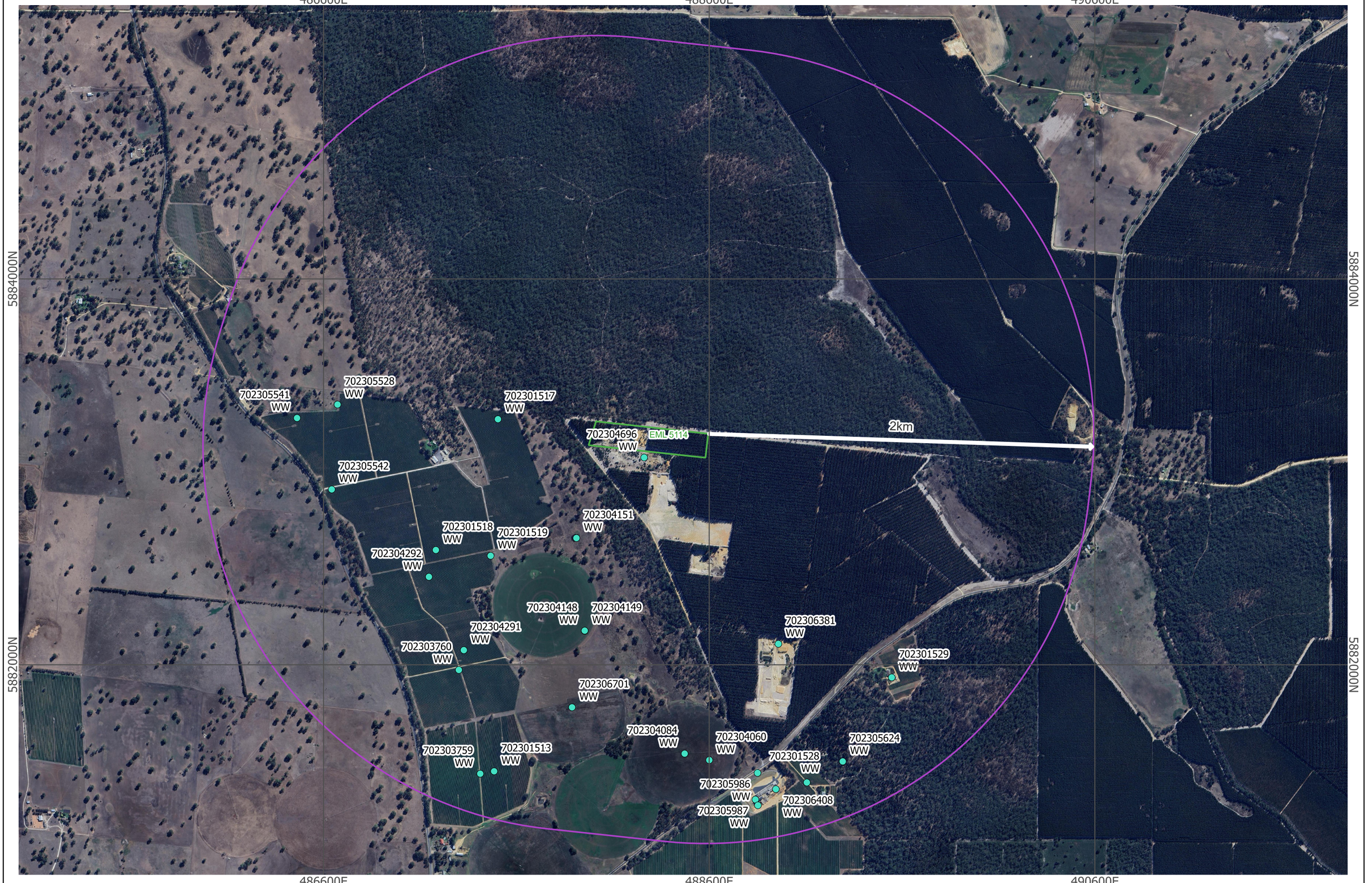

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Ecosystem:
Other: SARIG 2023

Legend:
EML 5114
Relevant Wells

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PROJECT: Comaum Sand Pit

CLIENT: Boral Resources (SA) Ltd

TITLE: Groundwater Map

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PH +61 3871 0411
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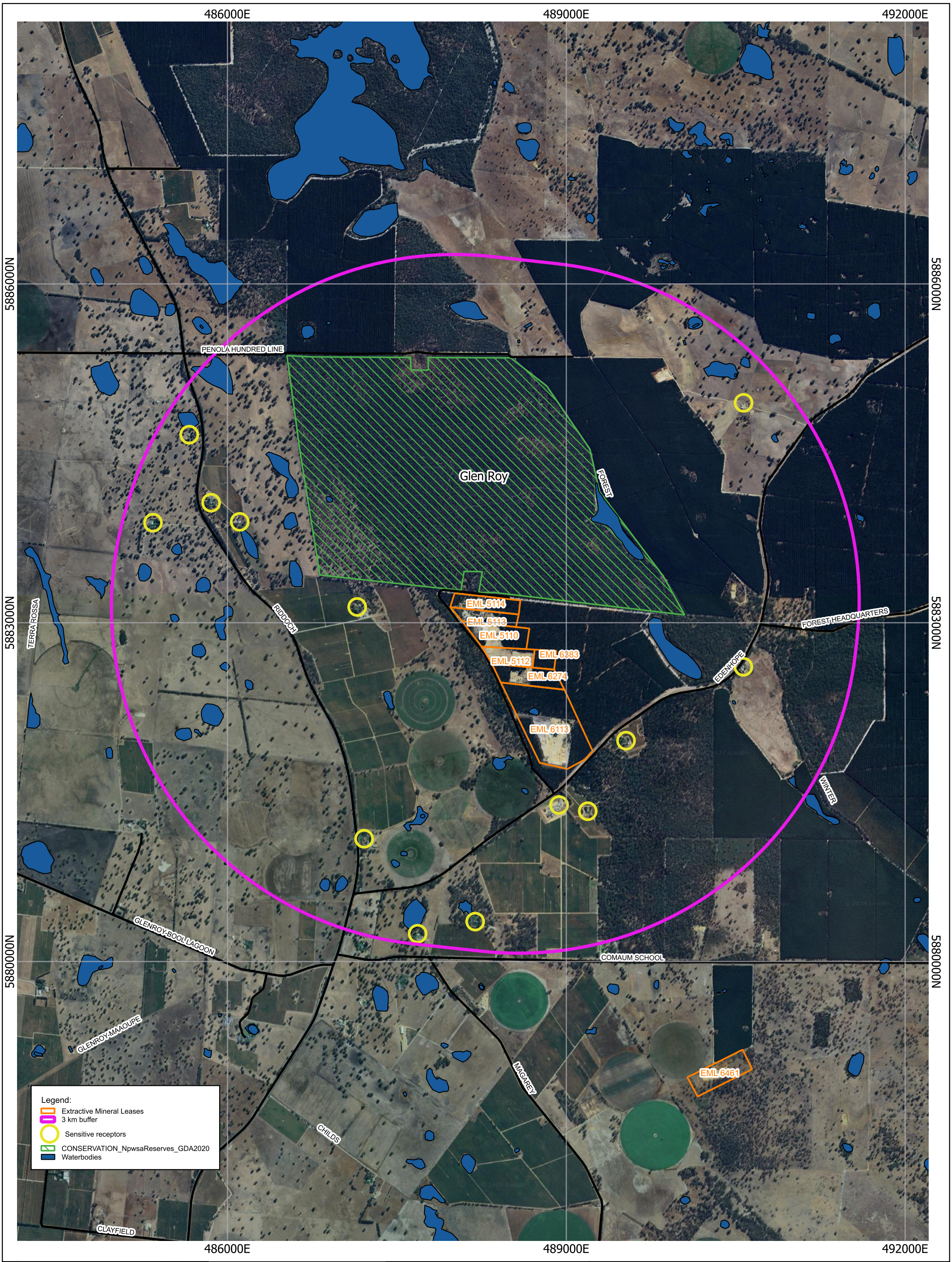

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Ecosystem:
Other: SARIG, 2024

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PROJECT: Comaum Sand Pit

CLIENT: Boral Resources (SA) Ltd

TITLE: Land Access Map

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REVISION:

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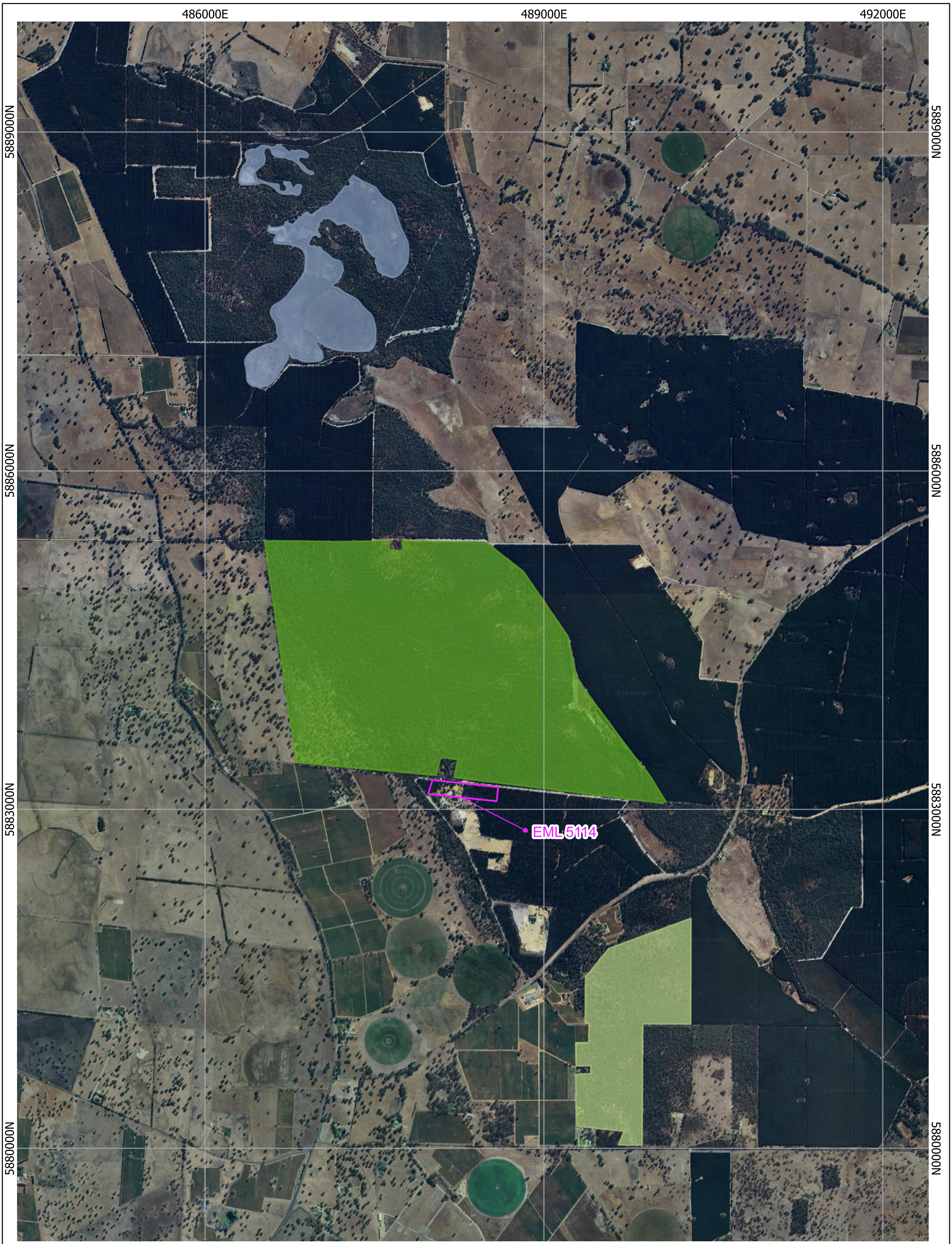

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Ecosystem:
Other: SARIG, 2024

Legend:
- EML 5114
- Conservation Areas
- National Wetlands
- Native Vegetation Heritatge Agreements

Google Satellite

N

PROJECT: Comaum Sand Pit

CLIENT: Boral Resources (SA) Ltd

TITLE: Proximity to Conservation Areas

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SCALE: 1:30,000 When Printed On A3
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REVISION:

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Section A - A'

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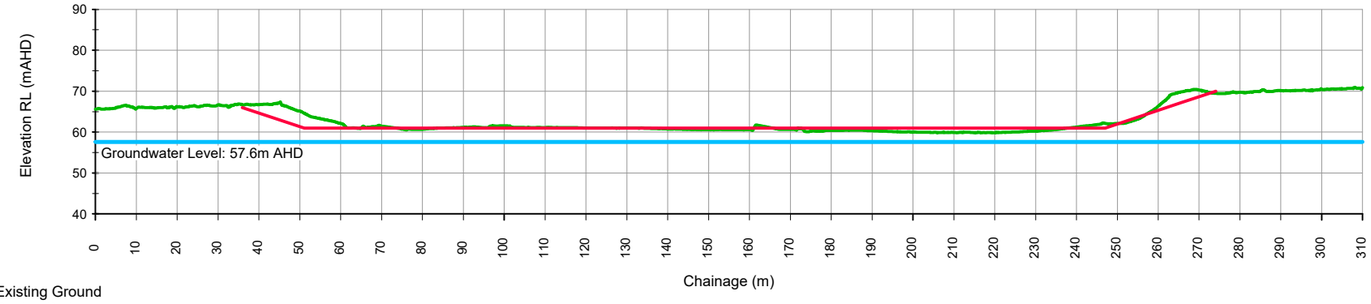

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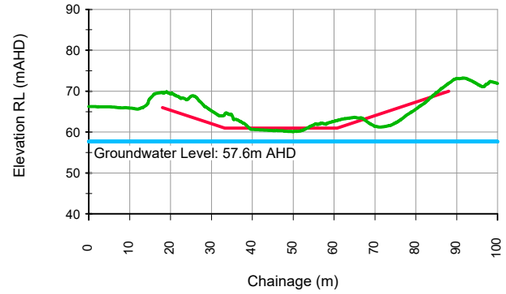

Existing Ground
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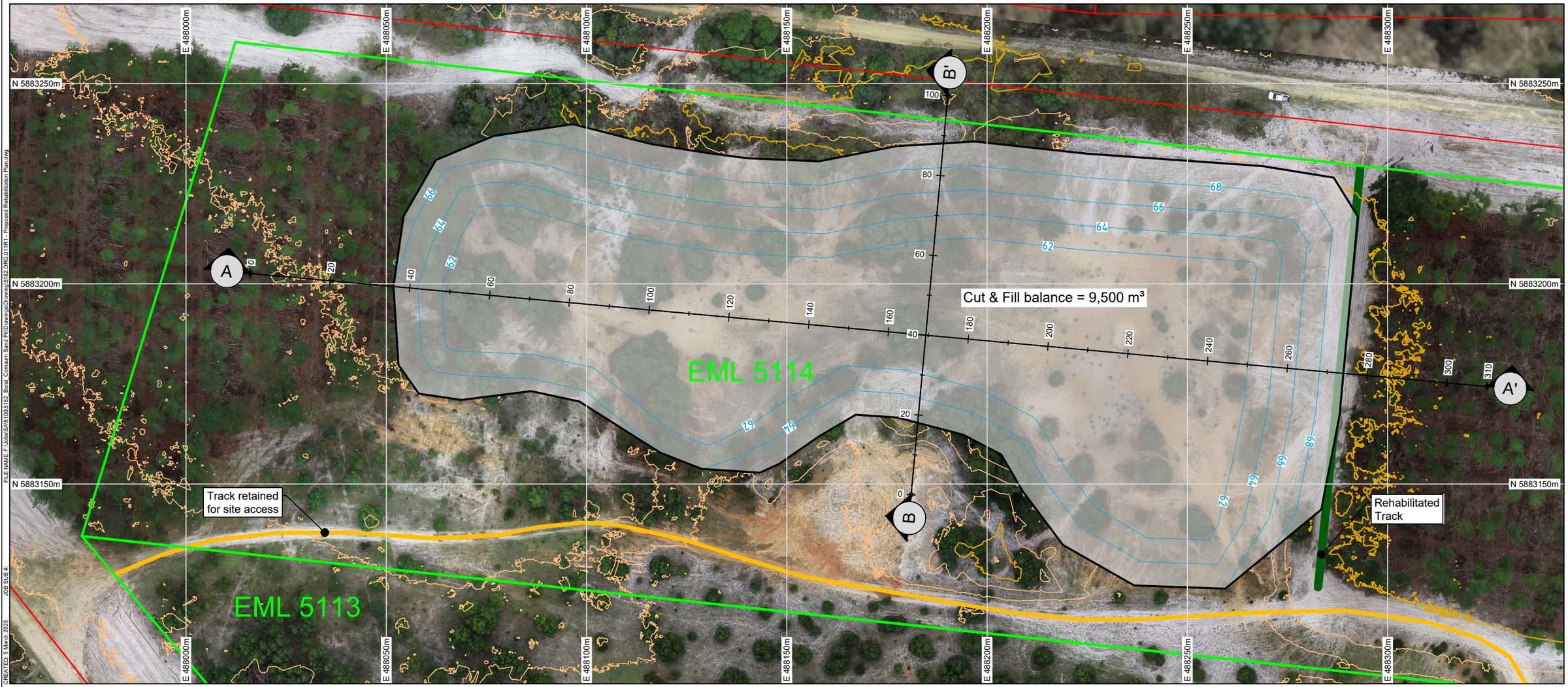

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Cadastre:
Ecosystem:
Other: © Commonwealth of Australia (Geoscience Australia) 2015, LiDAR 5m

Legend:
Extractive Mineral Lease
Cadastral Boundary

PROJECT: Comaum
CLIENT: Boral Resources Ltd

TITLE: Proposed Rehabilitation Plan

GROUNDWORK PART OF SLR
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WWW.GROUNDWORK.COM.AU

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REVISION: 1
DATE: 5 March 2025 — DRAWN: MR
PRINTED: 5 March 2025 — CHECKED: TH
DATUM: HORIZONTAL / VERTICAL / ZONE: GDA94 / MGA / AHD / 53

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JOB SUB #:
CREATED: 5 March 2025

488000E 488100E 488200E 488300E

5883300N 5883200N 5883100N

488000E 488100E 488200E 488300E

REV	DESCRIPTION	DATE	BY

Data
Photography: UAV Survey 2023-06-21; Google Satellite Imagery accessed: 04-October-2024
Topography: UAV Survey 2023-06-21
Cadastre: Data.sa.gov.au;Boundaries are Indicative only, not all boundaries shown
Other: SARIG, 2021

Legend:
- Rehabilitated landform Area
- Extent of Earthworks
- VA1 Clearance Area
- VA2 Clearance Area
- VA3 Clearance Area
- VA4 Clearance Area
- Pine Plantation Clearance Area
- EML Boundary with Adjacent Tenements

N

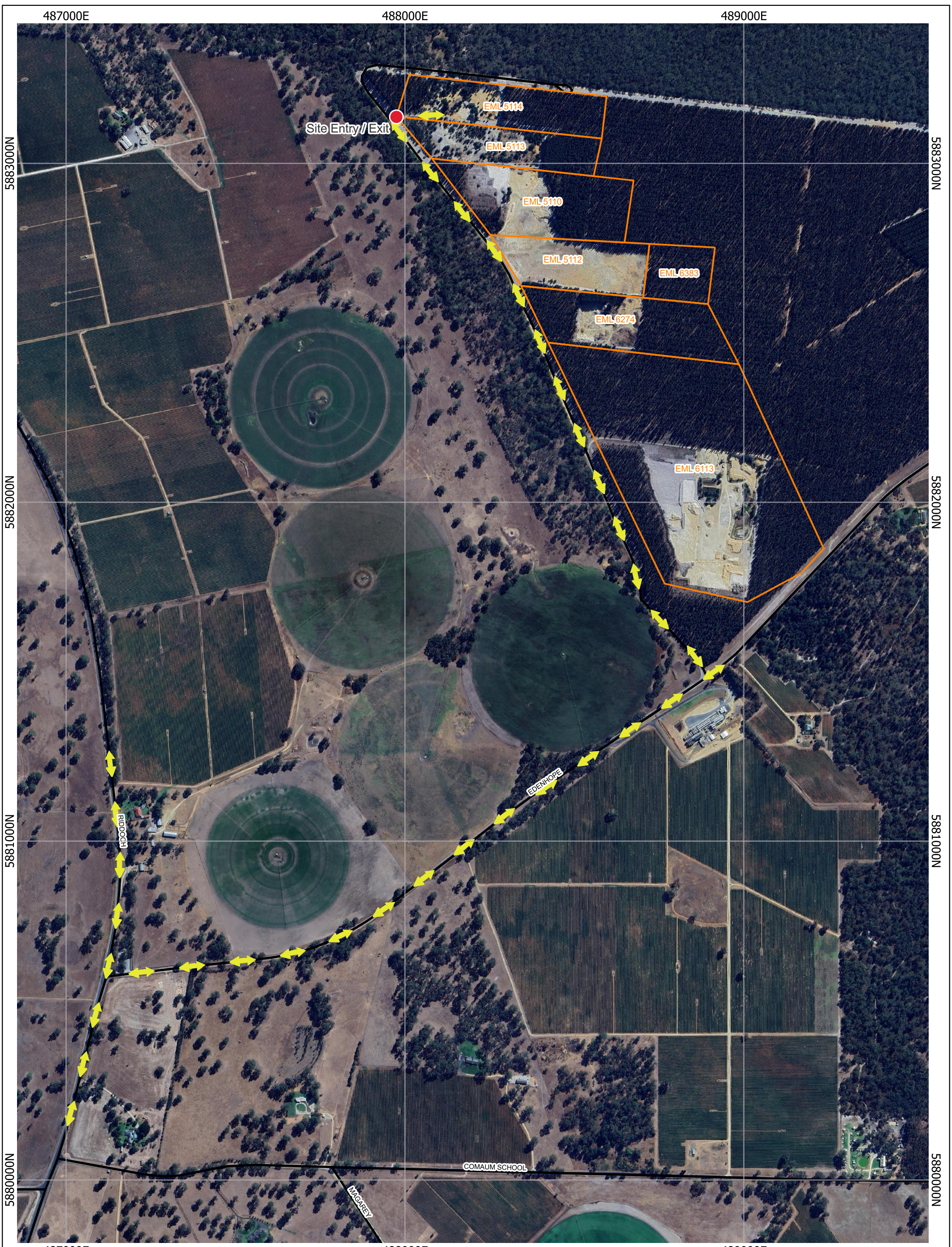
PROJECT: Comaum Sand Pit

CLIENT: Boral Resources (SA) Ltd

TITLE: Native Vegetation Clearance Map

GROUNDWORK PART OF SLR
PH +61 3871 0411
WWW.GROUNDWORKPLUS.COM.AU

SCALE: 1:1,100 When Printed On A3 (0 5 10 15 20 m)
DRAWING NUMBER: 5182.DRG.013
REVISION:
DATE: 04-October-2024
DRAWN: LJ
PRINTED: 04-October-2024
CHECKED:
DATUM: HORIZONTAL / VERTICAL / EPSG:7854
MGA / AHD / 54



REV	DESCRIPTION	DATE	BY

Data Sources:
Photography: Google Satellite Imagery accessed: 26 June 2024
Topography:
Cadastre: Data.sa.gov.au; Boundaries shown are indicative only, not all boundaries shown
Ecosystem:
Other: SARIG, 2024

Legend:
- Extractive Mineral Leases
- Site Entry and Exit
- Site access

N

PROJECT: Comaum Sand Pit

CLIENT: Boral Resources (SA) Ltd

TITLE: Site Access Map

GROUNDWORK PART OF SLR
PH +61 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:10,000 When Printed On A3
0 50 100 150 200 m

DRAWING NUMBER: 5182.DRG.014

REVISION:

DATE: 26-June-2024
DRAWN: EM
PRINTED: 26-June-2024
CHECKED: MJ

DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 54

EPSG:7854

ATTACHMENTS

GROUNDWORK PART OF SLR

Attachment 1

Wind Rose Data Coonawarra Station (Site No. 026091)

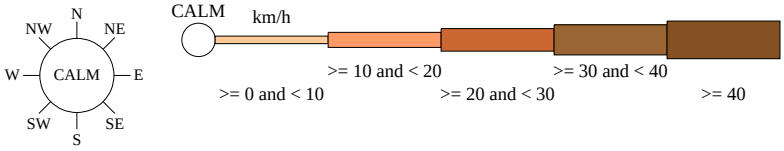
Rose of Wind direction versus Wind speed in km/h (01 Oct 1985 to 10 Aug 2024)

Custom times selected, refer to attached note for details

COONAWARRA

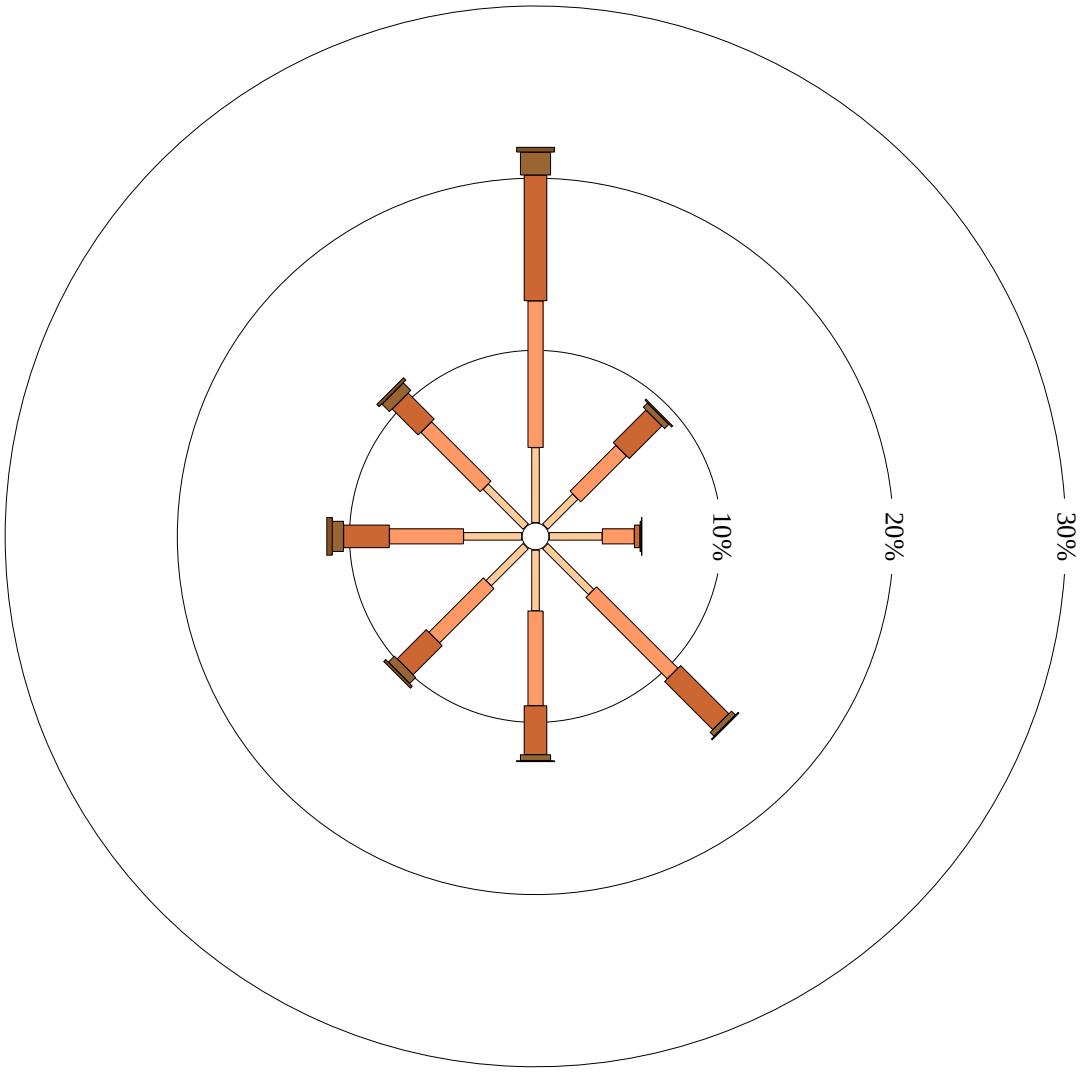
Site No: 026091 • Opened Sep 1985 • Still Open • Latitude: -37.2906° • Longitude: 140.8254° • Elevation 57m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



9 am
17740 Total Observations

Calm 4%



Rose of Wind direction versus Wind speed in km/h (01 Oct 1985 to 10 Aug 2024)

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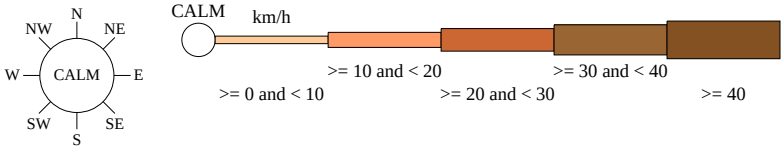
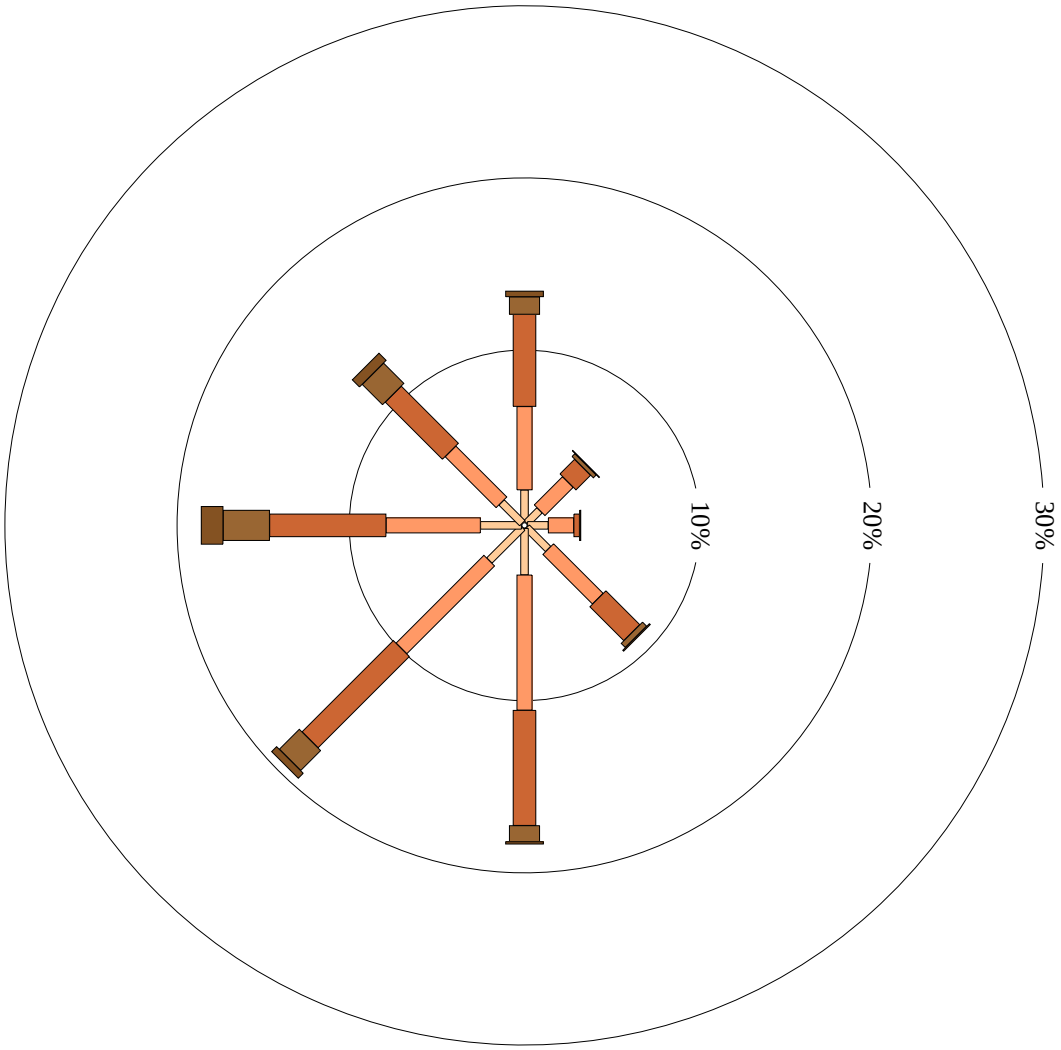


3 pm
17752 Total Observations

Calm 1%



Attachment 2

Threatened Species Summary

Threatened Fauna Species Summary

Species (common name)	NP&W Act	EPBC Act	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Calyptorhynchus banksii graptogyne (Red-tailed Black Cockatoo (south-east))	E	EN	2022	Highly specialised, feeding primarily on the seeds of Desert and Brown Stringybark, and seasonally on the seeds of Buloke. Requires very old, large, hollow eucalypts for nesting and usually roosts in clumps of tall eucalypts	Unlikely, no suitable habitat within Site.
Coracina papuensis robusta (White-bellied Cuckooshrike)	R		2005	Mostly forests and woodlands, also grasslands.	Possible, limited suitable habitat available within Site.
Corcorax melanorhamphos (White-winged Chough)	R		2009	White-winged Choughs are found in open forests and woodlands. They tend to prefer the wetter areas, with lots of leaf-litter, for feeding, and available mud for nest building.	Possible, limited suitable habitat available within Site.
Falco peregrinus macropus (Peregrine Falcon)	R		2003	Adaptable, and can be seen in a wide range of habitats; often encountered in areas with steep cliffs, as well as around coastal mudflats and open areas with shorebirds.	Possible, limited suitable habitat available within Site.
Falco subniger (Black Falcon)	R		2007	The Black Falcon is found along tree-lined watercourses and in isolated woodlands, mainly in arid and semi-arid areas. It roosts in trees at night and often on power poles by day.	Unlikely, no suitable habitat within the Site.
Falcunculus frontatus frontatus (Eastern Shriketit)	R		2009	Found in eucalypt forests and woodlands, forested gullies and along rivers in drier areas. It can also be found in rainforests. It is sometimes seen in parks and gardens, on farms with scattered trees, and on pine plantations.	Likely, suitable habitat with the Site.
Haliaeetus leucogaster (White-bellied Sea Eagle)	E		2005	White-bellied Sea-Eagles are normally seen perched high in a tree or soaring over waterways and adjacent land.	Unlikely, no suitable habitat within the Site.
Microeca fascinans (Jacky Winter)	ssp		2005	Prefer open woodland (Eucalypt and mallee) with an open shrub layer and bare ground. Often seen in farmland and parks.	Possible, limited suitable habitat available within Site.

Neophema chrysostoma (Blue-winged Parrot)	V	VU	2006	Inhabits a range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones. Throughout their range they favour grasslands and grassy woodlands. They are often found near wetlands both near the coast and in semi-arid zones.	Unlikely, no suitable habitat within the Site.
Ninox strenua (Powerful Owl)	E		2011	Found in open forests and woodlands, as well as along sheltered gullies in wet forests with dense understoreys, especially along watercourses. Will sometimes be found in open areas near forests such as farmland, parks and suburban areas, as well as in remnant bushland patches. Needs old growth trees to nest.	Unlikely, no suitable habitat within the Site.
Oriolus sagittatus sagittatus (Olive-backed Oriole)	R		2003	Species inhabits forests, woodlands and rainforests, as well as urban areas including parks and gold courses.	Possible, limited suitable habitat available within Site.
Petroica boodang boodang (Scarlet Robin)	R		2011	Occurs predominantly in Eucalypt woodlands and forests. Good leaf litter, perches in the height range 1-2m, and fallen logs are important components of habitat	Unlikely, no suitable habitat within the Site.
Petroica phoenicea (Flame Robin)	V		2003	Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. The groundlayer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense. Occasionally occurs in temperate rainforest, and also in herbfields, heathlands, shrublands and sedgelands at high altitudes.	Unlikely, no suitable habitat within the Site.
Stipiturus malachurus polionotum (Southern Emuwren (South East)	R		2006	Found in a variety of moist dense scrublands, heaths with grass trees, coastal heathlands, and tea-tree vegetation.	Unlikely, no suitable habitat within the Site.
Zanda funerea whiteae (Yellow-tailed Black Cockatoo)	V		2004	Prefer ranges from coastal heath, woodland and forest but they are increasingly to be found in pine plantations and patches of pine trees in urban and rural areas.	Possible, limited suitable habitat available within Site.
Falsistrellus tasmaniensis (Eastern False Pipistrelle (Tasmanian Falsistrelle)	E		2006	Eastern Falsistrelle roost in hollows in old trees in higher rainfall forests.	Unlikely, no suitable habitat within the Site.

Nyctophilus gouldi (Gould's Long-eared Bat)	E		2003	Sclerophyll forests and woodland, including forest remnants.	Unlikely, no suitable habitat within the Site.
Pteropus poliocephalus (Grey-headed Flying-fox	R	VU	2020	Camps occur in vegetation ranging from continuous forest to patches as small as 1 hectare. Important winter and spring vegetation communities are those that contain *Eucalyptus tereticornis, E. albens, E. crebra, E. fibrosa, E. melliodora, E. paniculata, E. pilularis, E. robusta, E. seeana, E. sideroxylon, E. siderophloia, Banksia integrifolia, Castanospermum australe, Corymbia citriodora citriodora, C. eximia, C. maculata, Grevillea robusta, Melaleuca quinquenervia or Syncarpia glomulifera*	Unlikely, no suitable habitat within the Site.
Trichosurus vulpecula (Common Brushtail Possum)	R		2014	Eucalyptus and Sheoak Woodlands.	Possible, limited suitable habitat available within Site.
Amphibolurus muricatus (Jacky Lizard)	R		2018	Inhabits areas of dry sclerophyll forests, rocky ridges and coastal heathlands along the east coast of Australia.	Unlikely, no suitable habitat within the Site.
NP&W Act; E= Endangered, V = Vulnerable, R= Rare EPBC Act; Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable					

Table 3 - Criteria for the Likelihood of Occurrence of Threatened Species

Likelihood	Criteria
Highly Likely/Known	Recorded in the last 10 years, the species does not have highly specific niche requirements, the habitat is present and falls within the known range of the species distribution or; The species was recorded as part of field surveys.
Likely	Recorded within the previous 20 years, the area falls within the known distribution of the species and the area provides habitat or feeding resources for the species.
Possible	Recorded within the previous 20 years, the area falls inside the known distribution of the species, but the area provides limited habitat or feeding resources for the species. Recorded within 20 -40 years, survey effort is considered adequate, habitat and feeding resources present, and species of similar habitat needs have been recorded in the area.
Unlikely	Recorded within the previous 20 years, but the area provides no habitat or feeding resources for the species, including perching, roosting or nesting opportunities, corridor for movement or shelter. Recorded within 20 -40 years; however, suitable habitat does not occur, and species of similar habitat requirements have not been recorded in the area. No records despite adequate survey effort.

Threatened Flora Species

Species	Common Name	National Rating	State Rating	Date of Last Record
Glycine latrobeana	Clover Glycine	VU	V	26-Sep-2011
Dipodium campanulatum	Bell-flower Hyacinth Orchid	EN	V	30-Dec-2011
Caladenia venusta	Large White Spider-orchid		V	01-Nov-2003
Dipodium pardalinum	Leopard Hyacinth-orchid		V	04-Jan-2011
Eucalyptus pauciflora ssp. pauciflora	Snow Gum		V	01-Sep-2009
Hovea heterophylla	Common Hovea		V	23-May-2014
Ranunculus sessiliflorus var. pilulifer	Annual Buttercup		V	01-Jan-2003
Caladenia necrophylla	Late Spider-orchid		R	03-Dec-2004
Corybas unguiculatus	Small Helmet-orchid		R	01-Aug-2003
Cycnogeton alcockiae	Alcock's Water-ribbons		R	09-Sep-2003
Eucalyptus fasciculosa	Pink Gum		R	23-May-2014
Galium curvihirtum	Tight Bedstraw		R	11-Dec-2007
Gonocarpus humilis	Shade Raspwort		R	01-Sep-2009
Lobelia pratioides	Poison Lobelia		R	19-Jun-2017
Melaleuca squarrosa	Bottlebrush Tea-tree		R	01-Jun-2003
Mentha diemenica	Slender Mint		R	01-Jan-2003
Montia australasica	White Purslane		R	19-Jun-2017
Pentapogon quadrifidus var. quadrifidus	Five-awn Spear-grass		R	01-Jan-2003
Poa morrisii	Soft Tussock-grass		R	26-Sep-2011
Poa rodwayi	Velvet Tussock-grass		R	23-May-2014
Pterostylis striata	Tall Shell-orchid		R	22-Jun-2017
Ranunculus inundatus	River Buttercup		R	19-Jun-2017
Sphaerolobium minus	Leafless Globe-pea		R	01-Jan-2003
Spiranthes australis	Austral Lady's Tresses		R	03-Mar-2011
Scleranthus diander	Tufted Knawel		E	09-Dec-2009

Attachment 3

Environment Protection and Biodiversity Conservation Act 1999 Protected Matters Report

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 29-Nov-2023

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	34
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	5
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Bool and hacks lagoons	Within 10km of Ramsar site	In buffer area only

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Endangered	Community may occur within area	In buffer area only
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area	In buffer area only
Mallee Bird Community of the Murray Darling Depression Bioregion	Endangered	Community may occur within area	In buffer area only
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	Community likely to occur within area	In buffer area only

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus banksii graptogyne South-eastern Red-tailed Black-Cockatoo [25982]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Stagonopleura guttata			
Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FISH			
Nannoperca obscura			
Yarra Pygmy Perch [26177]	Endangered	Species or species habitat may occur within area	In feature area
FROG			
Litoria raniformis			
Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area	In feature area
MAMMAL			
Isoodon obesulus obesulus			
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat likely to occur within area	In feature area
Miniopterus orianae bassanii			
Southern Bent-wing Bat [87645]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Pseudomys shortridgei			
Heath Mouse, Dayang, Heath Rat [77]	Endangered	Species or species habitat may occur within area	In buffer area only
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
PLANT			
Amphibromus fluitans			
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area	In feature area
Caladenia formosa			
Elegant Spider-orchid, Blood-red Spider-orchid [24370]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Caladenia tensa			
Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dipodium campanulatum Bell Flower Hyacinth Orchid [55051]	Endangered	Species or species habitat known to occur within area	In feature area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area	In feature area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area	In feature area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat may occur within area	In feature area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat may occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Anseranas semipalmata			
Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis			
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans			
Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa nebularia			
Common Greenshank, Greenshank [832]		Species or species habitat may occur within area overfly marine area	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Deadmans Swamp	Forest Reserve	SA	In buffer area only
Glen Roy	Conservation Park	SA	In feature area
Unnamed (No.HA1136)	Heritage Agreement	SA	In buffer area only
Unnamed (No.HA1347)	Heritage Agreement	SA	In buffer area only
Wombat Flat	Forest Reserve	SA	In buffer area only

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Deadmans Swamp	SA	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Attachment 4

Native Vegetation Management Plan

Groundwork part of SLR

Native Vegetation Clearance Data Report

Comaum Sand Pit Closure EML 5114

Clearance under the *Native Vegetation Regulations 2017*

Prepared for: Boral Resources Australia

Date: March 2025

File Reference: 5182.610.001V1

DOCUMENT CONTROL

PROJECT / DETAILS REPORT

Document Title:	Native Vegetation Clearance Data Report Comaum Sand Pit Closure EML 5114
Principal Author:	Louise Jaunay
Client:	Boral Resources Australia
Reference Number:	5182.610.001V1

DOCUMENT STATUS

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Attachment 2	*Environmental Protection and Biodiversity Conservation Act 1999* Protected Matters Searches
Attachment 3	Bushland Assessment Scoresheets
Attachment 4	Threatened Fauna Species Summary

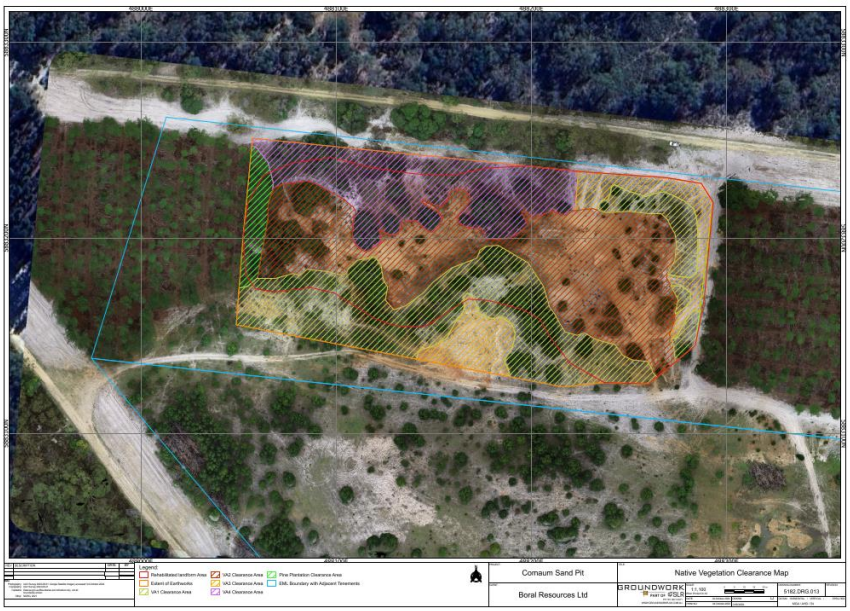
1 Applicant Information

1.1. Application Details

Applicant:	Boral Resources Australia			
Key contact:	Name:	Andrew Bondini		
	Contact details:	0401 895 128 Andrew.bondini@boral.com.au		
Landowner:	Name:	Forestry SA / OneFortyOne (lessee)		
	Contact details:	Forestry SA – Kieran Gosden OneFortyOne – Stuart Adam, 0407 617 168, sadam@onefortyone.com		
Site address:	Unnamed Road, off Edenhope Road, Glenroy SA 5277			
Local Government Area:	Wattle Range		Hundred:	Comaum
Title ID:	CT 6256/738		Parcel ID:	H440400 S358

1.2. Summary of Proposed Clearance

Purpose of clearance	Clearance required to allow land rehabilitation of existing historic sand mine open pit.
Native Vegetation Regulation	Part 5, Division 1, Regulation 12(28) – Operations
Description of the vegetation under application	0.79 ha of *Dodonaea viscosa ssp. +/- Acacia spp.* shrubland over *Hibbertia sp. +/- Kennedia prostrata* +/- sedges in poor condition (Vegetation Association 1), 0.87 ha of Scattered *Eucalyptus viminalis ssp. cygnetensis* over *Dodonaea viscosa +/- Acacia spp.* With a sedge groundcover layer in poor condition (Vegetation Association 2), 0.23 ha of Scattered *Ficinia nodosa +/- Kennedia prostrata* with introduced weeds in very poor condition (Vegetation Association 3), and 0.48 ha of *Eucalyptus viminalis ssp. cygnetensis* woodland over *Dodonaea viscosa* in moderate condition (Vegetation Association 4).
Total proposed clearance - area (ha) and number of trees	2.37 ha are proposed to be cleared.
Level of clearance	Level 4
Overlay (Planning and Design Code)	Hazards (Bushfire – General), Hazards (Bushfire – High Risk), Hazards (Flooding – Evidence Required), Key Outback and Rural Routes, Native Vegetation, Prescribed Wells Area, State Significant Native Vegetation, Water Protection Area, Water Resources

Map of proposed clearance area	
Mitigation hierarchy	Rehabilitation of the landform to a safe, useable state is required as part of the Tenement surrender process. To achieve this objective, clearance of regrowth native vegetation is unavoidable. Clearance of native vegetation has been reduced to only what is required to return the Site to the agreed landform at the surrender of the Tenement. Clearance is restricted to regrowth only, in areas previously cleared for mining purposes. Given the land is to be returned for forestry use, there will be no opportunity to restore the land for the purposes of native vegetation.
SEB Offset proposal	The client intends to pay a total of $54,955.15, inclusive of $2,864.95 administration fee, into the Native Vegetation Fund (NVF).

2 Purpose of Clearance

2.1 Description

Groundwork part of SLR (Groundwork) have been engaged by Boral resources Australia (Boral) to undertake a Native Vegetation Assessment of Extractive Mineral Lease (EML) 5114 (the Site) which is intended to be closed and the landform rehabilitated with tenure surrendered back to the Department for Energy and Mining (DEM).

In support of the closure and rehabilitation of the Site, Groundwork Plus has been engaged by Boral to develop a Closure Program for Environment Protection and Rehabilitation (PEPR) as required by DEM to ensure land rehabilitation is conducted according to measurable environmental outcomes. The Native Vegetation Assessment is to support the development of the Closure PEPR.

2.2 Background

EML 5114 was first granted in 1983 and consist of 7.2 hectares (ha) under the Tenement. The original approval document for mining activities was an Approved Development Program (ADP), approved by Mines and Energy South Australia in 1995 (ADP No. 67/95).

The Tenement was established for the purpose of extracting sand resources for concrete sand. The geology for extraction was described as Alluvial Sand, with a deposit length of 600 meters (m), width of 120 m and a depth of five (5) m. Extraction was to be achieved through open cut extraction. Land use prior to the Tenement was listed as forestry, with no native vegetation described.

The middle portion of the Site has been extracted to an approximate depth of five (5) m. Topsoil appears to have been stockpiled along the northern and southern boundaries of the pit.

Extraction ceased some time ago, with the full extent of the Tenement not utilised. Land rehabilitation was not completed, with steep pit faces remaining, some near vertical. Forestry plantations have persisted in the western and eastern portions of the Site. Since operations ended, a reasonable amount of native vegetation and fauna have returned to the Site.

2.2.1 Interim Biogeographical Regionalisation of Australia (IBRA)

A search of the Government of South Australia Enviro Data (2022) application *NatureMaps* (*NatureMaps*), confirmed the Site is located within the Naracoorte Coastal Plain IBRA Region, and the Glenelg Plain IBRA Subregion. The Naracoorte Coastal Plain IBRA Region is described as 'Swampy coastal plain with clayey lagoon deposits. Swampy plain overlain in large areas by gentle dunes and sheets of white arid sand. Adjacent to coast indurated dunes of calcareous sand and dunes of orange sand' (*NatureMaps*, 2022).

2.2.2 Climate

Climate data has been sourced from the nearest open weather station at Coonawarra Bureau of Meteorology (BoM) (Site No. 026091) located approximately 10.5 kilometres (km) south west of the Site. Climate is described as Mediterranean with majority of rainfall falling between the months of June and September. Mean daily maximum temperatures range from 27.6 degrees Celsius in January and 13.9 degrees Celsius for July, with mean minimum temperatures ranging from 11.8 degrees Celsius in January

and February to 5.1 degrees Celsius in July. Review of *NatureMaps* climate data references a mean annual rainfall of 585 millimetres (mm) for the Site.

2.3 General Location Map

The Site is located on an unnamed road, accessed from Edenhope Road, approximately 30 km south of Naracoorte. The Site is located approximately 330 km south east of Adelaide, South Australia, refer to **Drawing No. 5182.DRG.010 – Site Location Map** for a visual representation of the project location.

2.4 Details of the Proposal

Landform rehabilitation of the old pit is the primary project activity required within the Site. Given the steep pit walls and uneven spread of soil across the middle section of the EML, significant earthworks will be required to lessen the slopes and provide a safe, useable surface on the surrender of the Tenement. At surrender, the land will be returned to forestry use and will be required to be cleared of native vegetation to create a stable landform and 1V:3H batters.

To achieve the earthworks, vegetation clearance is required across the old pit and where the balance of fill will be drawn from, refer to **Drawing No. 5182.DRG.013 – Native Vegetation Clearance Map** for a visual representation of the areas requiring clearance.

2.5 Approvals Required or Obtained

This Vegetation Clearance Data Report has been prepared for inclusion within the PEPR for the Site in accordance with the provisions of the *Mining Act 1971*.

A review of *NatureMaps* indicated that there have been no other native vegetation clearance approvals within the Site, with the closest applications for scattered trees being over 3.5 km south of the Site.

2.6 Native Vegetation Regulation

Provisions for clearance of native vegetation associated with approved mining operations are provided under the *Native Vegetation Regulations 2017*, Part 5, Regulation 12, Division 1, Subclause 28 – Operations – Clearance of vegetation incidental to operations authorised under a *Mining Act 1971* or the *Geothermal Energy Act 2000*.

2.7 Development Application Information (if applicable)

Development approval under the *Planning, Development and Infrastructure Act 2016* (PDI Act) is not required for activities associated with the quarry operations undertaken in accordance with an approved PEPR.

3 Method

3.1 Flora Assessment

An online search was undertaken for *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) Matters of National Environmental Significance (MNES) along with a review of *NatureMaps* for historical records of any rare or endangered flora species within five (5) km of the Site.

Following a review of the background information and literature, an assessment of the Site was undertaken on 30 June 2023 by Groundwork Plus Accredited Consultant involving a general assessment of the Site and identification of habitat for species of conservation significance.

The proposed works areas were surveyed for:

- Remnant and regrowth native vegetation
- Introduced plant species

Representative photographs of the vegetation within the Site are provided within **Section 4.1 Vegetation Assessment**.

3.2 Fauna Assessment

An online search was undertaken for *EPBC Act* MNES, as well as a review of *NatureMaps* to determine the presence of any rare or endangered flora and fauna species historically recorded within five (5) km of the project area and identify potential Threatened Ecological Communities (TEC) that may occur.

To determine the likelihood of threatened species or communities occurring, an assessment of the project area was undertaken on 30 June 2023 by Groundwork Plus to capture opportunistic fauna records and identify habitat suitability for the listed species identified within the desktop searches.

4 Assessment Outcomes

The topography of the Site is relatively flat and sandy with height elevations of the Site ranges from 60 - 80 meters Australian Height Datum (mAHD).

The closest Heritage Agreement (HA) to the Site is located approximately two (2) kms south east of the Site (HA 1136). Glen Roy Conservation Park is located immediately adjacent to the northern boundary of the Site, separated by a road reserve.

4.1 Vegetation Assessment

A search of *NatureMaps* identified 25 threatened flora species recorded within the preceding 20-year period (from 2023 when the survey was undertaken) and within a five (5) km radius of the Site, refer to **Attachment 1 – Threatened Flora Species List**. An EPBC Act protected matters search report listed 12 threatened flora species that may occur within proximity (five (5) km buffer applied) to the Site, refer to **Attachment 2 – *Environmental Protection and Biodiversity Conservation Act 1999* Protected Matters Searches**.

Of the 25 threatened flora species identified through *NatureMaps*, none were identified during the field inspections. It is considered unlikely that threatened flora species would be present within the Site, given the disturbance history of the area. In the unlikely event a threatened flora species was present, the proposed works are unlikely to significantly impact any populations.

Full assessment of the vegetation attributes and condition scores are provided within **Attachment 3 – Bushland Assessment Scoresheets**.

A total of four (4) Vegetation Associations were identified within the application area:

- *Dodonaea viscosa ssp. +/- Acacia spp.* shrubland over *Hibbertia sp. +/- Kennedia prostrata +/-* sedges in poor condition (Vegetation Association 1),
- Scattered *Eucalyptus viminalis ssp. cygnetensis* over *Dodonaea viscosa +/- Acacia spp.* With a sedge groundcover layer in poor condition (Vegetation Association 2),
- Scattered *Ficinia nodosa +/- Kennedia prostrata* with introduced weeds in very poor condition (Vegetation Association 3), and
- *Eucalyptus viminalis ssp. cygnetensis* woodland over *Dodonaea viscosa* in moderate condition (Vegetation Association 4).

All vegetation identified within the Site is regrowth since the cessation of quarrying activities. Within the northern portion of the Site, there are some mature Eucalyptus trees, at least 10 – 20 years old. Other native vegetation is limited in diversity, and structural forms. Herbaceous weeds are present throughout the Site, also with a prevalence of *Pinus radiata*, which makes up the majority of the canopy layer.

The vegetation under application is separated from adjacent remnant vegetation within the conservation park on the northern boundary by an unformed road only. Some native vegetation also exists within the road reserve between the two. Along the southern boundary of the Site, there is another closed EML, that has been rehabilitated and regeneration of native species, in a similar composition to within the Site, has occurred. To the east and west of the old pit, existing forestry plantations are growing, scheduled to be clear felled in the next eight (8) to 12 years.

Weather conditions preceding the survey were cool, with some rain. Some annual germination and growth were present on Site to enable accurate identification of some annual species. Dry biomass on the ground layer was low.

Table 1 - Details of the Vegetation Proposed to be Impacted

Vegetation Association 1 *Dodonaea viscosa ssp. +/- Acacia spp.* shrubland over *Hibbertia sp. +/- Kennedia prostrata +/-* sedges in poor condition	
 **Photo 1** – Representative Photo of Vegetation Association 1, looking north. Lat: 37;10;29.854 Long: 140;50;8.577	
General description	Regrowth vegetation since the cessation of quarrying activities. Predominately located within the southern section of the previous extraction area, outside the pit floor. Dominated by *Dodonaea viscosa* and *Acacia spp*. Some groundcovers established such as *Kennedia prostrata* and *Hibbertia sp.* Moss cover established in sections. Evidence of some disturbance from fauna and vehicle tracks. Weed species present in moderate density. Groundcover weed species dominated by *Salvia verbenaca var.*, *Scabiosa atropurpurea* and *Plantago lanceolata var*. Scattered *Pinus radiata* trees growing throughout vegetation.
Threatened species or community	No threatened flora species or communities were recorded within the application area during the field inspections. Of the threatened fauna species identified during the desktop assessment, one (1) species was considered 'likely' to occur, eight (8) were considered 'possible' to occur and the remaining species were considered 'unlikely' to occur within the Site. Additionally, evidence of the State listed Rare species, *Vombatus ursinus* (Common Wombat) was noted within the Site, including burrows, tracks and scats.

	Given the vegetation under application is regrowth native vegetation with a relatively low species diversity and structural formation, it is unlikely the removal of the vegetation would result in a significant impact to the majority of the listed fauna species. This is particularly so given that better quality habitat is located in such close proximity to the vegetation under application, giving fauna species a direct pathway to move out of the application and inhabit the better quality vegetation. However, consideration will be required for the presence of the Common Wombat, and surveying will be required to ensure none are present within the application area when earthworks are completed.				
Landscape context score	1.13	**Vegetation condition score**	22.44	**Conservation significance score**	1.06
Unit biodiversity score	26.88	**Area (ha)**	0.79	**Total biodiversity score**	21.24

Vegetation Association 2

Scattered *Eucalyptus viminalis ssp. cygnetensis* over *Dodonaea viscosa +/- Acacia spp.* With a sedge groundcover layer in poor condition

Photo 2 – Representative Photo of Vegetation Association 2, looking west.
Lat: 37;11;53.3817 Long: 140;51;59.1393

General description	Vegetation located within the pit floor. Dominated by scattered *Ficinia nodosa* on very sandy soil with few young *Eucalyptus viminalis ssp. cygnetensis* and other scattered shrub species. Plant density is low overall. Many generated *Pinus radiata* trees growing throughout the vegetation association. High level of disturbance from motorbikes with some general rubbish. Evidence of fauna including Common Wombat and Kangaroos. Groundcover weed species

	dominated by *Salvia verbenaca var.*, *Scabiosa atropurpurea* and *Plantago lanceolata var*.				
Threatened species or community	No threatened flora species or communities were recorded within the application area during the field inspections. Of the threatened fauna species identified during the desktop assessment, one (1) species was considered 'likely' to occur, eight (8) were considered 'possible' to occur and the remaining species were considered 'unlikely' to occur within the Site. Additionally, evidence of the State listed Rare species, *Vombatus ursinus* (Common Wombat) was noted within the Site, including burrows, tracks and scats. Given the vegetation under application is regrowth native vegetation with a relatively low species diversity and structural formation, it is unlikely the removal of the vegetation would result in a significant impact to the majority of the listed fauna species. This is particularly so given that better quality habitat is located in such close proximity to the vegetation under application, giving fauna species a direct pathway to move out of the application and inhabit the better quality vegetation. However, consideration will be required for the presence of the Common Wombat, and surveying will be required to ensure none are present within the application area when earthworks are completed.				
Landscape context score	1.13	**Vegetation condition score**	8.84	**Conservation significance score**	1.06
Unit biodiversity score	10.59	**Area (ha)**	0.87	**Total biodiversity score**	9.21
Vegetation Association 3 Scattered *Ficinia nodosa* +/- *Kennedia prostrata* with introduced weeds in very poor condition					

Photo 3 – Representative Photo of Vegetation Association 3, looking north.
Lat: 37;10;29.854 Long: 140;50;8.577

General description	Small section located just in from the southern boundary of the EML. Appears to have been used as a vehicle turn-around area so clear of shrubs and trees. Native vegetation reduced to a few scattered *Ficinia nodosa* and *Kennedia prostrata*. Weed species consisting of *Scabiosa atropurpurea*, *Hypochaeris glabra* and *Erigeron sp.*				
Threatened species or community	No threatened flora species or communities were recorded within the application area during the field inspections. Of the threatened fauna species identified during the desktop assessment, one (1) species was considered 'likely' to occur, eight (8) were considered 'possible' to occur and the remaining species were considered 'unlikely' to occur within the Site. Additionally, evidence of the State listed Rare species, *Vombatus ursinus* (Common Wombat) was noted within the Site, including burrows, tracks and scats. Given the floristic species diversity of Vegetation Association 3, it is unlikely any threatened or common fauna species would be inhabiting the association, but, if present, may pass through. Therefore, removal of the vegetation within this association is unlikely to impact fauna species.				
Landscape context score	1.13	**Vegetation condition score**	4.59	**Conservation significance score**	1.06
Unit biodiversity score	5.50	**Area (ha)**	0.23	**Total biodiversity score**	1.27

Vegetation Association 4
Eucalyptus viminalis ssp. cygnetensis woodland over *Dodonaea viscosa* in moderate condition

Photo 4 – Representative Photo of Vegetation Association 4, looking north.
Lat: 37;10;29.854 Long: 140;50;8.577

General description	Regenerated *Eucalyptus viminalis ssp. cygnetensis* in old stockpiles and sides of pit on northern boundary of EML. Located adjacent to roadside vegetation and conservation park, so readily available seed source. Understorey dominated by *Pteridium esculentum ssp. esculentum*. Emergent shrubs consisting of *Dodonaea viscosa ssp. angustissima*, *Acacia myrtifolia* and *Exocarpos cupressiformis*. Other understorey species consisting of *Stenanthera conostephioides*, *Hibbertia sp.* and *Kennedia prostrata*. Contains several *Pinus radiata* trees. Other weed species include *Arctotheca calendula, Plantago lanceolata var.* and *Scabiosa atropurpurea*. Evidence of disturbance from motorbikes on banks of stockpiles. Some evidence of fauna species, particularly Kangaroos and Common Wombat.				
Threatened species or community	No threatened flora species or communities were recorded within the application area during the field inspections. Of the threatened fauna species identified during the desktop assessment, one (1) species was considered 'likely' to occur, eight (8) were considered 'possible' to occur and the remaining species were considered 'unlikely' to occur. Additionally, evidence of the State listed Rare species, *Vombatus ursinus* (Common Wombat) was noted within the Site, including burrows, tracks and scats. Given the vegetation under application is regrowth native vegetation with a relatively low species diversity and structural formation, it is unlikely the removal of the vegetation would result in a significant impact to the majority of the listed fauna species. This is particularly so given that better quality habitat is located in such close proximity to the vegetation under application, giving fauna species a direct pathway to move out of the application and inhabit the better quality vegetation. However, consideration will be required for the presence of the Common Wombat, and surveying will be required to ensure none are present within the application area when earthworks are completed.				
Landscape context score	1.13	**Vegetation Condition Score**	30.08	**Conservation significance score**	1.06
Unit biodiversity Score	36.03	**Area (ha)**	0.48	**Total biodiversity Score**	17.29

4.2 Fauna Assessment

A search of *NatureMaps* identified 21 threatened fauna species recorded within the preceding 20 years and within a five (5) km radius of the Site. These species were reviewed against known habitat preferences and the habitat present onsite to determine the likelihood of presence and use of the vegetation onsite, refer to **Attachment 4 – Threatened Fauna Species Summary**. In summary, one (1) species, *Falcunculus frontatus frontatus* (Eastern Shriketit), was considered 'likely' to occur, and seven (7) species were considered 'possible' to occur:

- *Coracina papuensis robusta* (White-bellied Cuckooshrike)
- *Corcorax melanorhamphos* (White-winged Chough)
- *Falco peregrinus macropus* (Peregrine Falcon)
- *Microeca fascinans* (Jacky Winter)

- *Oriolus sagittatus sagittatus* (Olive-backed Oriole)
- Zanda funerea whiteae (Yellow-tailed Black Cockatoo)
- *Trichosurus vulpecula* (Common Brushtail Possum)

The remaining species were considered 'unlikely' to occur. Aquatic fauna species and species with listed sub-species with known distributions outside of the region were excluded from the results. Only species identified through *NatureMaps* where location and record date are known have been included in the results.

An EPBC Act protected matters search report listed 18 additional threatened fauna species that may occur within proximity (five (5) km buffer applied) to the Site, refer to **Attachment 2 – *Environmental Protection and Biodiversity Conservation Act 1999* Protected Matters Search**. Aquatic fauna species were again excluded from the results as only terrestrial environments were recorded. Based upon vegetation assessed within the Site, the type of impacts, and the habitat requirements of species, it is unlikely any threatened species or ecological communities identified through the protected matters search will be impacted by the proposed landform rehabilitation.

During the Site inspection, evidence of the State listed Rare species, *Vombatus ursinus* (Common Wombat) was noted within the Site, including burrows, tracks and scats. A deceased Common Wombat was found immediately adjacent to the Site on the unformed road. Consideration will be required for the presence of the Common Wombat, and surveying will be required to ensure none are present within the application area when earthworks are completed.

Given the vegetation under application is regrowth native vegetation with a relatively low species diversity and structural formation, it is unlikely the removal of the vegetation would result in a significant impact to any of the listed fauna species. This is particularly so given that better quality habitat is located in such close proximity to the vegetation under application, giving fauna species a direct pathway to move out of the application and inhabit the better quality vegetation.

4.3 Cumulative Impact

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must consider the potential cumulative impact, both direct and indirect, that is reasonably likely to result from a proposed clearance activity.

The planned rehabilitation work is located within the existing pit and disturbance areas. Vegetation within these areas is restricted to regrowth. No further clearance is required outside the identified application area and given the short duration of earthwork activity, there are likely to be no further effects on surrounding native vegetation from aspects such as dust and sediment deposition.

Weed invasion is possible due to the movement of vehicles and machinery within the application areas during earthworks. Introduction of weed species may result in a degradation of adjacent remnant vegetation, however, during construction, strict hygiene practices must be adhered to ensure weed species are not spread or introduced.

The land will be rehabilitated to allow forestry activities to occur within the Site. As such, future clearance is unlikely to occur as native vegetation will not be reestablished within the Site.

4.4 Address the Mitigation Hierarchy

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the Native Vegetation Council (NVC) must have regard to the mitigation hierarchy. The NVC will also consider, with the aim to minimize, impacts on biological diversity, soil, water and other natural resources, threatened species or ecological communities under the EPBC Act or listed species under the NP&W Act.

a) **Avoidance – outline measures taken to avoid clearance of native vegetation**

Rehabilitation of the landform to a safe, useable state is required as part of the Tenement surrender process. To achieve this objective, clearance of regrowth native vegetation is unavoidable.

b) **Minimisation – if clearance cannot be avoided, outline measures taken to minimise the extent, duration and intensity of impacts of the clearance on biodiversity to the fullest possible extent (whether the impact is direct, indirect or cumulative)**.

Clearance of native vegetation has been reduced to only what is required to return the Site to the agreed landform at the surrender of the Tenement. Clearance is restricted to regrowth only, in areas previously cleared for mining purposes.

c) **Rehabilitation or restoration – outline measures taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been degraded, or destroyed by the impact of clearance that cannot be avoided or further minimised, such as allowing for the re-establishment of the vegetation**.

Given the land is to be returned for forestry use, there will be no opportunity to restore the land for the purposes of native vegetation.

d) **Offset – any adverse impact on native vegetation that cannot be avoided or further minimised should be offset by the achievement of a Significant Environmental Benefit (SEB) that outweighs that impact.**

As there is no opportunity within the Tenement to establish an on-ground off-set, the Client intends to pay into the NFV, the amount required for the SEB, as calculated in **Table 5 - Totals Summary Table**.

4.5 Principles of Clearance (Schedule 1, *Native Vegetation Act 1991*)

The NVC will consider Principles 1(b), 1(c) and 1(d) when assigning a level of Risk under Regulation 16 of the Native Vegetation Regulations. The NVC will consider all the Principles of clearance of the Act as relevant, when considering an application referred under the *Planning, Development and Infrastructure Act 2016*.

Table 2 - Principles of Clearance

Principle of clearance	Relevant information	Assessment against the principles	Moderating factors that may be considered by the NVC
Principle 1b - significance as a habitat for wildlife	The vegetation under application may provide limited habitat for fauna species. The vegetation is somewhat connected with adjacent remnant vegetation to the north and adjacent pine plantation to the east and west and is not in isolation. The desktop assessment for threatened fauna species identified one (1) species that may be considered 'likely', and seven (7) species that may be considered 'possible' to use the application areas, based on previous records and habitat preferences. Evidence of a further listed species, *Vombatus ursinus* (Common Wombat) was noted within the Site, including burrows, tracks and scats. Refer to **Section 4.2 Fauna Assessment** for further details. Threatened Fauna Score (all associations – 0.1	Seriously at Variance Yes	The vegetation under application consists of regrowth vegetation only and is of lower quality that adjacent remnant vegetation. Use by fauna species is likely to be opportunistic, with the Common Wombat likely taking advantage of previous earthworks. With careful planning and pre-earthworks surveys, impacts to the species can be avoided.
Principle 1c - plants of a rare, vulnerable or endangered species	No threatened flora species were recorded within the application area during the Site inspection. Given the disturbance history and physical characteristics (such as soil type) of the sites it is considered unlikely any species will present within the application area. Threatened Flora Score (all associations) – 0	Seriously at Variance No At Variance No	Not applicable.
Principle 1d - the vegetation comprises the whole or	No threatened plant communities were identified during the Site inspections. Threatened Community Score – 1	Seriously at Variance No	Not applicable.

Principle of clearance	Relevant information	Assessment against the principles	Moderating factors that may be considered by the NVC
***part of a plant community that is Rare, Vulnerable or endangered*:**			

Principles of Clearance (h-m) will be considered by comments provided by the local Natural Resource Management (NRM) Board or relevant Minister. The Data Report should contain information on these principles where relevant and where sufficient information or expertise is available.

4.6 Risk Assessment

Table 3 - Risk Assessment

Total clearance	No. of trees	N/A
	Area (ha)	2.37
	Total biodiversity Score	49.01
Seriously at variance with principle 1(b), 1(c) or 1 (d)		Principle 1(b)
Risk assessment outcome		Level 4

5 Clearance Summary

Table 4 - Clearance Areas Summary Table

Block	Site	Species diversity score	Threatened Ecological community Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
A	1	10	1	0	0.06	26.88	0.79	21.24	1	-	-	23.36	$22,560.99	$1,240.85
A	2	4	1	0	0.06	10.59	0.87	9.21	1	-	-	10.03	$9,783.51	$538.09
A	3	3	1	0	0.06	5.50	0.23	1.27	1	-	-	1.40	$1,376.26	$75.69
A	4	12	1	0	0.06	36.03	0.48	17.29	1	-	-	19.02	$18,369.44	$1010.32
						Total	**2.37**	**49.01**				**53.81**	**$52,090.20**	**$2,864.95**

Table 5 - Totals Summary Table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	49.01	53.81	$52,090.20	$2,864.95	$54,955.15

Economies of Scale Factor	0.5
Rainfall (mm)	585

6 Significant Environmental Benefit

A SEB is required for approval to clear under Division 5 of the *Native Vegetation Regulations 2017*. The NVC must be satisfied that as a result of the loss of vegetation from the clearance that an SEB will result in a positive impact on the environment that is over and above the negative impact of the clearance.

ACHIEVING AN SEB

Indicate how the SEB will be achieved by ticking the appropriate box and providing the associated information:

☐ Establish a new SEB Area on land owned by the proponent.

☐ Use SEB Credit that the proponent has established. Provide the SEB Credit Ref. No. _____

☐ Apply to have SEB Credit assigned from another person or body. The application form needs to be submitted with this Data Report.

☐ Apply to have an SEB to be delivered by a Third Party. The application form needs to be submitted with this Data Report.

☒ Pay into the NVF.

PAYMENT SEB

Given the proposed clearance is associated with the surrender of a mining lease, there will be no opportunity to achieve an on-ground SEB area. As such, the client intends to pay a total of $54,955.15, inclusive of $2,864.95 administration fee, into the NVF.

DRAWINGS

470000E 480000E 490000E 500000E

5910000N 5900000N 5890000N 5880000N 5870000N

Riddoch Highway
Wimmera Highway
Naracoorte Township
Riddoch Highway
Riddoch Highway
Casterton-Naracoorte Rd
Edenhope-Penola Rd
Edenhope Rd
Site
Riddoch Highway
Coonawarra Township
Riddoch Highway
Penola Township

Legend

- Site
- Penola Township
- Naracoorte Township
- Coonawarra Township
- Access Route
- Riddoch Highway
- SA-VIC Border

Google Satellite

470000E 480000E 490000E 500000E

REV	DESCRIPTION	DATE	BY

Data Sources:
Photography: Google Satellite Imagery accessed: 26-June-2024
Topography:
Cadastre: Data.sa.gov.au; Boundaries shown are indicative only
Ecosystem:
Other: SARIG, 2024

N

PROJECT: Comaum Sand Pit

CLIENT: Boral Resources (SA) Ltd

TITLE: Site Location Map

GROUNDWORK PART OF SLR
PH +61 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:150,000.1118 @ When Printed On A3
0 700 1,400 2,100 2,800 m

DRAWING NUMBER: 5182.DRG.010

REVISION:

DATE: 27-June-2024
PRINTED: 27-June-2024
DRAWN: RH
CHECKED:

DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 54

EPSG:7854

488000E 488100E 488200E 488300E

5883300N 5883200N 5883100N

488000E 488100E 488200E 488300E

REV	DESCRIPTION	DATE	BY

Data
Photography: UAV Survey 2023-06-21; Google Satellite Imagery accessed: 04-October-2024
Topography: UAV Survey 2023-06-21
Cadastre: Data.sa.gov.au;Boundaries are Indicative only, not all boundaries shown
Other: SARIG, 2021

Legend:
- Rehabilitated landform Area
- Extent of Earthworks
- VA1 Clearance Area
- VA2 Clearance Area
- VA3 Clearance Area
- VA4 Clearance Area
- Pine Plantation Clearance Area
- EML Boundary with Adjacent Tenements

N

PROJECT: Comaum Sand Pit

CLIENT: Boral Resources (SA) Ltd

TITLE: Native Vegetation Clearance Map

GROUNDWORK PART OF SLR
PH +61 3871 0411
WWW.GROUNDWORKPLUS.COM.AU

SCALE: 1:1,100 When Printed On A3 (0 5 10 15 20 m)
DRAWING NUMBER: 5182.DRG.013
REVISION:
DATE: 04-October-2024
DRAWN: LJ
PRINTED: 04-October-2024
CHECKED:
DATUM: HORIZONTAL / VERTICAL / EPSG:7854
MGA / AHD / 54

ATTACHMENTS

Attachment 1

Threatened Flora Species

Threatened Flora Species

Species	Common Name	National Rating	State Rating	Date of Last Record
Glycine latrobeana	Clover Glycine	VU	V	26-Sep-2011
Dipodium campanulatum	Bell-flower Hyacinth Orchid	EN	V	30-Dec-2011
Caladenia venusta	Large White Spider-orchid		V	01-Nov-2003
Dipodium pardalinum	Leopard Hyacinth-orchid		V	04-Jan-2011
Eucalyptus pauciflora ssp. pauciflora	Snow Gum		V	01-Sep-2009
Hovea heterophylla	Common Hovea		V	23-May-2014
Ranunculus sessiliflorus var. pilulifer	Annual Buttercup		V	01-Jan-2003
Caladenia necrophylla	Late Spider-orchid		R	03-Dec-2004
Corybas unguiculatus	Small Helmet-orchid		R	01-Aug-2003
Cycnogeton alcockiae	Alcock's Water-ribbons		R	09-Sep-2003
Eucalyptus fasciculosa	Pink Gum		R	23-May-2014
Galium curvihirtum	Tight Bedstraw		R	11-Dec-2007
Gonocarpus humilis	Shade Raspwort		R	01-Sep-2009
Lobelia pratioides	Poison Lobelia		R	19-Jun-2017
Melaleuca squarrosa	Bottlebrush Tea-tree		R	01-Jun-2003
Mentha diemenica	Slender Mint		R	01-Jan-2003
Montia australasica	White Purslane		R	19-Jun-2017
Pentapogon quadrifidus var. quadrifidus	Five-awn Spear-grass		R	01-Jan-2003
Poa morrisii	Soft Tussock-grass		R	26-Sep-2011
Poa rodwayi	Velvet Tussock-grass		R	23-May-2014
Pterostylis striata	Tall Shell-orchid		R	22-Jun-2017
Ranunculus inundatus	River Buttercup		R	19-Jun-2017
Sphaerolobium minus	Leafless Globe-pea		R	01-Jan-2003
Spiranthes australis	Austral Lady's Tresses		R	03-Mar-2011
Scleranthus diander	Tufted Knawel		E	09-Dec-2009

Attachment 2

Environmental Protection and Biodiversity Conservation Act 1999 Protected Matters Searches

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 29-Nov-2023

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	34
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	5
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Bool and hacks lagoons	Within 10km of Ramsar site	In buffer area only

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Endangered	Community may occur within area	In buffer area only
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area	In buffer area only
Mallee Bird Community of the Murray Darling Depression Bioregion	Endangered	Community may occur within area	In buffer area only
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	Community likely to occur within area	In buffer area only

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus banksii graptogyne South-eastern Red-tailed Black-Cockatoo [25982]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Stagonopleura guttata			
Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FISH			
Nannoperca obscura			
Yarra Pygmy Perch [26177]	Endangered	Species or species habitat may occur within area	In feature area
FROG			
Litoria raniformis			
Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area	In feature area
MAMMAL			
Isoodon obesulus obesulus			
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat likely to occur within area	In feature area
Miniopterus orianae bassanii			
Southern Bent-wing Bat [87645]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Pseudomys shortridgei			
Heath Mouse, Dayang, Heath Rat [77]	Endangered	Species or species habitat may occur within area	In buffer area only
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
PLANT			
Amphibromus fluitans			
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area	In feature area
Caladenia formosa			
Elegant Spider-orchid, Blood-red Spider-orchid [24370]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Caladenia tensa			
Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dipodium campanulatum Bell Flower Hyacinth Orchid [55051]	Endangered	Species or species habitat known to occur within area	In feature area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area	In feature area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area	In feature area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat may occur within area	In feature area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat may occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Anseranas semipalmata			
Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis			
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans			
Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa nebularia			
Common Greenshank, Greenshank [832]		Species or species habitat may occur within area overfly marine area	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Deadmans Swamp	Forest Reserve	SA	In buffer area only
Glen Roy	Conservation Park	SA	In feature area
Unnamed (No.HA1136)	Heritage Agreement	SA	In buffer area only
Unnamed (No.HA1347)	Heritage Agreement	SA	In buffer area only
Wombat Flat	Forest Reserve	SA	In buffer area only

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Deadmans Swamp	SA	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Attachment 3

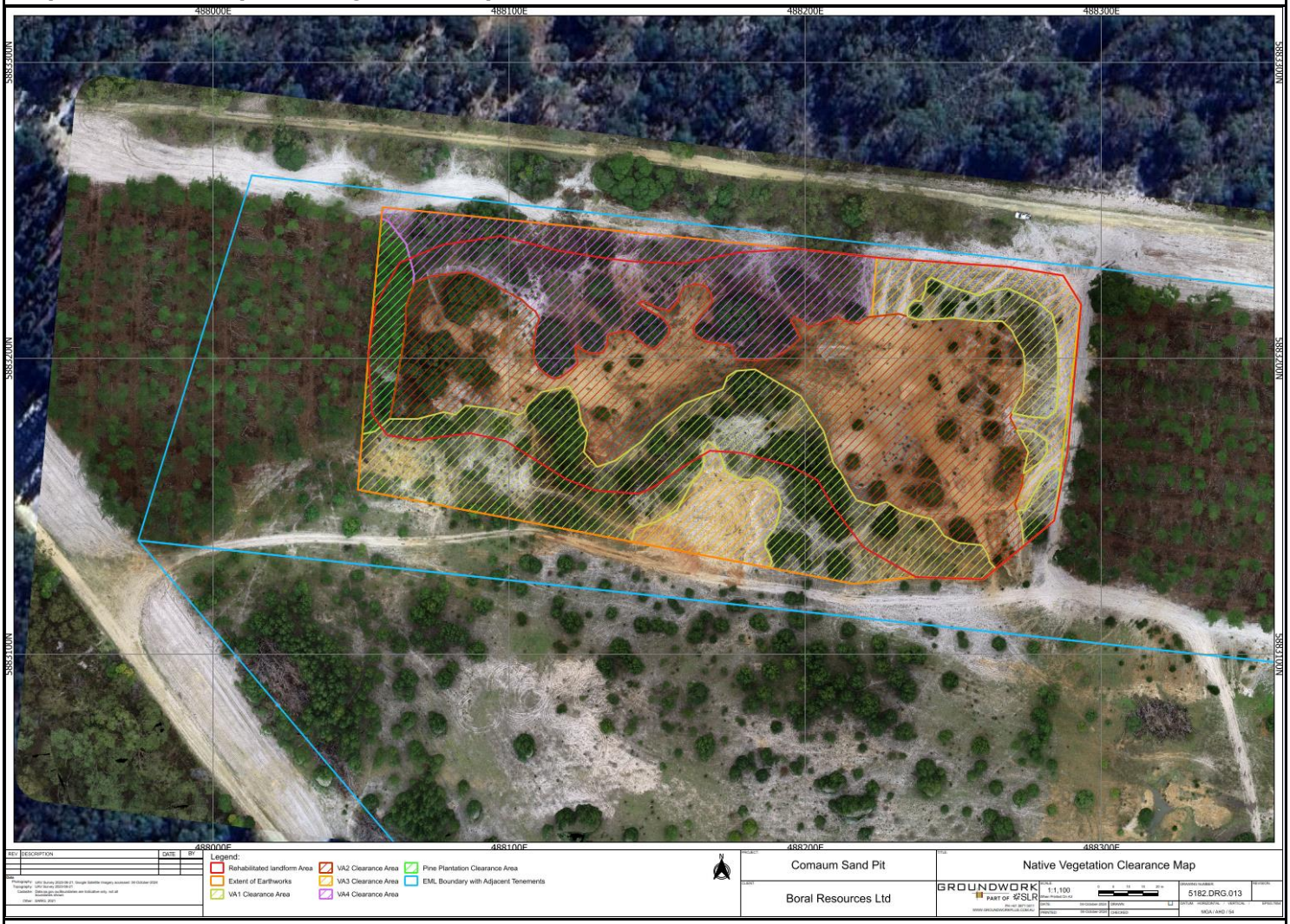
Bushland Assessment Scoresheets

Bushland Assessment Scoresheet (Version - 1 September 2024)

Block	Comaum Sand Pit
Size of Block (Ha)	7.5
Landscapes Region	Limestone Coast
BCM Region	South East
IBRA Association	Naracoorte
IBRA Subregion	Lucindale

ASSESSOR(S)	LJ
DATE OF ASSESSMENT	30/06/2023

Map of the Block (Including the Sites)



Landscape Context Scores

% native veg. remaining in IBRA Assoc.	18
% native veg. remaining in IBRA subregion	19
0 - 10% = 0.05 pts; >10-20% = 0.04 pts; >20-30% = 0.03 pts; >30-60% = 0.02 pts; > 60 = 0 pts — **Score**	0.08

Score received for both IBRA assoc. and subregion then summed

Percent Vegetation Cover (5km radius) (%)	18
0-5% = 0 pts; >5-10% = 0.02 pts; >10-25% = 0.04 pts; >25-50% = 0.06 pts; >50-75% = 0.03 pt; >75-100% = 0 pts — **Score**	0.04

% native veg. protected IBRA Assoc.	51
0-10% = 0.03 pts; >10-20% = 0.02 pts; >20-40% = 0.01 pt; >40% = 0 — **Score**	0

Block Shape Cleared perimeter:Area (km/km2)	
Cleared Perimeter (m) =	1200
Cleared Perimeter to area ratio	16.00
<6 = 0.03 pts; 6 to <12 = 0.02 pts; 12 to <18 = 0.01 pt — **Score**	0.01

Wetland or Riparian Habitat present	
Riparian zone present (Yes/No) = 0.02 pt	No
Swamp/wetland present (Yes/No) = 0.03 pts (Swamp/wetland may be +/- riparian zone)	No
Score	0

Note; Blocks will score a minimum Landscape Context Score of 1

LANDSCAPE CONTEXT SCORE (max 1.25)	**1.13**

Plant Species Recorded (Native and Introduced)		Listed Species			Natives only		Introduced Species
Species	**Common Name**	**EPBC**	**SA**	**Not in quadrat**	**Regen**	**Annual Herbs** Spring survey	
Dodonaea viscosa ssp. angustissima	Narrow-leaf Hop-bush				Yes		
Acacia mearnsii	Black Wattle				Yes		
Ficinia nodosa	Knobby Club-rush						
Kennedia prostrata	Scarlet Runner						
Gramineae sp.	Grass Family						
Eucalyptus camaldulensis ssp.	River Red Gum				Yes		
Acacia myrtifolia	Myrtle Wattle				Yes		
Rytidosperma sp.	Wallaby-grass						
Hypochaeris glabra	Smooth Cat's Ear						*
Oxalis perennans	Native Sorrel						
Oxalis pes-caprae	Soursob						*
Salvia verbenaca var.	Wild Sage						*
Sixalix atropurpurea	Pincushion						*
Plantago lanceolata var.	Ribwort						*
Pinus radiata	Radiata Pine						*
Ehrharta longiflora	Annual Veldt Grass						*
Medicago sp.	Medic						*
Isolepis marginata	Little Club-rush						*
Stenanthera conostephioides	Flame Heath						
Hibbertia sp.	Guinea-flower						
Hibbertia sp.	Guinea-flower						
Exocarpos cupressiformis	Native Cherry						

Threatened or Introduced Animal Species Recorded or Observed (Native and Introduced)		Threatened Species				Introduced Species
Species	**Common Name**	**EPBC**	**SA**	**Past Record**	**Observed**	
Coracina papuensis robusta	White-bellied Cuckooshrike		R	2005		
Corcorax melanorhamphos	White-winged Chough		R	2009		
Falco peregrinus macropus	Peregrine Falcon		R	2003		
Falcunculus frontatus frontatus	Eastern Shriketit		R	2009		
Microeca fascinans	Jacky Winter			2005		
Oriolus sagittatus sagittatus	Olive-backed Oriole		R	2003		
Zanda funerea whiteae	Yellow-tailed Black Cockatoo		V	2004		
Trichosurus vulpecula	Common Brushtail Possum		R	2014		
Vombatus ursinus	Common Wombat		R		Y - deceas	

Vegetation Condition Scores

SITE:	VA1
BCM COMMUNITY	SE 2.2 Open Forests with open shrub ± bracken understorey on sandy to terra rossa soils
VEGETATION ASSOCIATION DESCRIPTION	*Dodonaea viscosa +/- Acacia spp. shrubland in poor condition*
SIZE OF SITE (Ha)	0.79

Benchmarked attributes

(Scores determined by comparing to a Benchmark community)

Number of Native Species (Minus herbaceous annuals for spring Surveys)	13
Native Plant Species Diversity Score (max 30) from benchmark score *weighted by a factor of 2*	**10.0**
Number of regenerating native species	4
Regeneration Score (max 12) from benchmark community weighted by a factor of 1.5	**7.5**

Weed species (Top 5 Cover x Invasiveness)	Cover (max 6)	Weed Threat Rating (max 5)	C x I
Salvia verbenaca var.	2	2	4
Sixalix atropurpurea	3	2	6
Pinus radiata	3	0	0
Plantago lanceolata var.	2	2	4
Oxalis pes-caprae	2	3	6
	Cover x Threat		20
Weed Score (max 15) from benchmark community			**10**

Native Plant Life Forms	**Cover rating**
Trees > 15m	
Trees 5 - 15 m	
Trees < 5m	2
Mallee > 5m	
Mallee < 5m	
Shrubs > 2m	3
Shrubs 0.5 - 2m	3
Shrubs <0.5m	
Forbs	2
Mat Plants	1
Grasses > 0.2m	
Grasses < 0.2m	2
Sedges > 1m	
Sedges < 1m	2
Hummock grasses	
Vines, scramblers	
Mistletoe	
Ferns	
Grass-tree	
Total	15

Native Plant Life Forms (max 20) from benchmark score *weighted by a factor of 2* **14.0**

Non-Benchmarked Attributes

(Scores determined from direct field observations)

Native:exotic Understorey biomass Score (max 5)	**4**

Is the community naturally treeless?	☐
Fallen Timber/Debris (max 5)	**0**
Hollow-bearing trees Score (max 5)	**0**
Mature Tree Score (max 8)	**0**
Tree Canopy Cover Score (max 5)	**0**

Vegetation Condition Score calculation

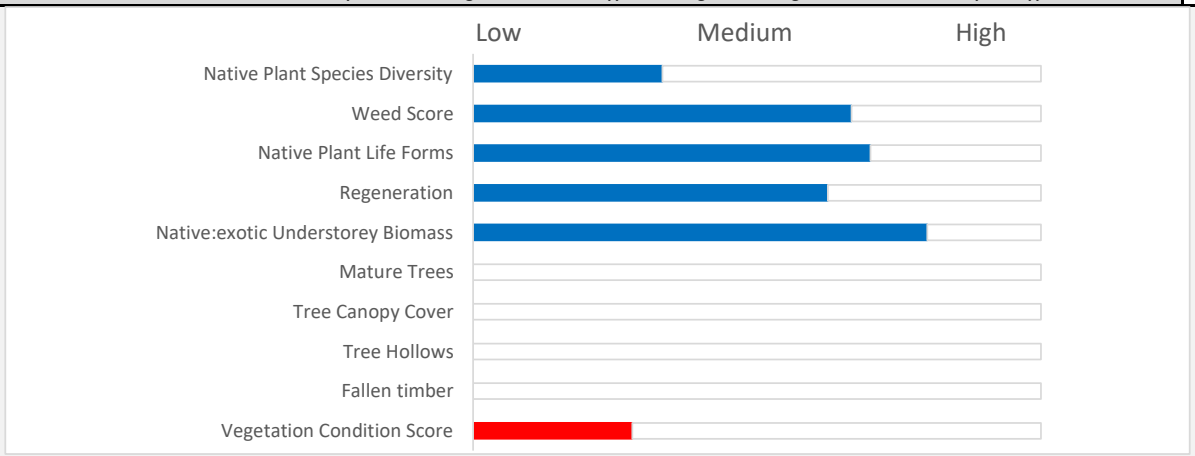
Positive Vegetation Attributes Score = Native species diversity + Regeneration + Native Plant Life Forms Fallen timber/debris + Hollow-bearing trees

- If the community Score is Not Benchmarked (SNB) for regeneration this score is multiplied 1.24

- If the community is naturally treeless this score is multiplied by 1.29 31.50

Negative Vegetation Attributes Score = (15 - Weeds) + ((10 - Biomass score - Tree Canopy Cover Score)exp2/2) 23.00

VEGETATION CONDITION SCORE (Positive veg attributes x ((80 - Negative vegetation attributes) / 80)) **22.44**



Conservation Significance Score

Is the vegetation association considered a Threatened Ecological community or Ecosystem?	Yes/No
State (Provisional List of Threatened Ecosystems of SA) **Rare** community (0.1 pt)	☐
State (Provisional List of Threatened Ecosystems of SA) **Vulnerable** community (0.2 pts)	☐
State (Provisional List of Threatened Ecosystems of SA) **Endangered** community (0.3 pts)	☐
Nationally (EPBC Act) V**ulnerable** community (0.35 pts)	☐
Nationally (EPBC Act) **Endangered** or **Critically Endangered** community (0.4 pts)	☐
Note; all sites will score a minimum Conservation Significance Score of 1 **Threatened Community Score**	1

Number of Threatened Flora Species recorded for the site (within the site)	Number
**If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.*	
State **Rare** species recorded (1 pt each)	0
State **Vulnerable** species recorded (2.5 pt each)	0
State **Endangered** recorded (5 pts each)	0
Nationally **Vulnerable** species recorded (10 pts each)	0
Nationally **Endangered** or **Critically endangered** species recorded (20 pts each)	0
0 = 0 pts; <2 = 0.04 pts; 2 - <5 = 0.08 pts; 5 - <10 = 0.12 pts; 10 - <20 = 0.16 pts; 20 or > = 0.2 pts	**0**
Threatened Flora Score	0

Potential habitat for Threatened Fauna Species (number observed or previously recorded)	Number
**If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.*	
State **Rare** species observed or locally recorded (1 pt each)	7
State **Vulnerable** species observed or locally recorded (2.5 pt each)	1
State **Endangered** species observed or locally recorded (5 pt each)	0
Nationally **Vulnerable** species observed or locally recorded (10 pts each)	0
Nationally **Endangered** or **Critically endangered** species observed or locally recorded (20 pts each)	0
0 = 0 pts; <2 = 0.02 pts; 2 - <5 = 0.04 pts; 5 - <10 = 0.06 pts; 10 - <20 = 0.08pts; 20 or > = 0.1 pts	**9.5**
Threatened Fauna Score	**0.06**
CONSERVATION SIGNIFICANCE SCORE	**1.06**

Total Scores for the Site

	Score
LANDSCAPE CONTEXT SCORE	**1.13**
VEGETATION CONDITION SCORE	**22.44**
CONSERVATION SIGNIFICANCE SCORE	**1.06**

Vegetation Condition x Landscape Context x Conservation Significance =	
UNIT BIODIVERSITY SCORE	26.88
Total Biodiversity Score (Biodiversity Score x hectares)	21.24

Photo Point and Vegetation Survey Location

Direction of the Photo

GPS Reference

Datum	
Zone (52, 53 or 54)	
Easting (6 digits)	
Northing (7 digits)	

Description

SEB Offset Calculations (when assessing a proposed clearance site)

SEB Points required for offset	
Loss Factor	1.0
Loadings for clearance of protected areas	
Reductions for rehabilitation of impact site	
SEB Uplift Factor	1.10
Total SEB Points Required	**23.36**

SEB - Payment in the Native Vegetation Fund	
SEB Points of Gain/ha Factor	7.5
Approximate SEB hectares required	3.11
Management Cost Factor ($/ha)	$24,764
Economies of Scale Factor	0.5
Mean annual rainfall for the site (mm)	585
Payment into the Fund (GST exclusive)	$22,560.99
Administration fee (GST inclusive)	$1,240.85
Total Payment Required	**$23,801.84**

SEB Points Provided Calculations

Answer these questions when assessing a site within a proposed SEB area

Refer to the SEB Guide (section on 'Adjust the SEB Points of Gain') for more information

Assessment of SEB site - On ground		
What is the risk of decline or loss of vegetation in the next 20 years?		
Has stock grazing been absent from the site for 10 or more years (and cannot be introduced without approval from the NVC)?		
Is the land subject to zoning or a dedication that is generally restrictive of development activities (e.g. conservation zone, recreation or open space zoning or crown land dedication)?		
There are no, or only very minimal, threats identified that would result in the decline of the vegetation condition (excluding threats beyond the control of the SEB offset provider such as climate change).		
Is the land subject to legally binding obligations (contractual or legislated) that provide an existing level of protection for the native vegetation (e.g. restricts the use of the land or prevents the vegetation from being harmed) that is additional to the protections provided by the Native Vegetation Act 1991?		
Likely % Loss	5.5%	Standard
Will the proposed SEB area be subject to management actions that are clearly and significantly in excess of the standard requirements as set out in the SEB Policy?		
Will a very high standard of revegetation be conducted, including the establishment of a very high proportion of the species diversity which would be expected within the relevant vegetation community, and all strata (which should be present) represented including grasses, sedges, herbs and ground cover plants?		
Will fencing be installed (in excess of the standard stock exclusion fencing) in order to exclude introduced species or excessive herbivory by native and introduced fauna?		
Will intensive and substantial management of threatened flora or fauna be undertaken which is not required in association with the proposed clearance for which the SEB is being provided?		
Are the proposed management actions and their scale of impact already required by duty of care or legislation?		
Only minimal management actions have been committed to in the proposed SEB management plan, such as minimal control of species declared for control under the *Landscapes SA Act 2019* .		
Are the management interventions practically difficult to achieve or is the recovery of the vegetation likely to be inhibited in some way?		
Are there management issues, beyond the control of the SEB offset provider, that are technically or practically difficult to address preventing them from being managed to their fullest possible extent (e.g. weed infestations within difficult to access terrain)?		
Are there physical or environmental constraints which are likely to significantly impede the rehabilitation of vegetation and slow the rate of recovery? This may include compacted soils or altered soil chemistry (e.g. high nutrients/salinity issues) where the issue will continue or increase, significant erosion that cannot be controlled without impacting native vegetation or extensive die-back or plant diseases.		
Likely Improvement Due to Management	11.512	Standard
In relation to sites requiring substantial revegetation, is it highly likely that a good outcome will be achieved?		
Does the applicant (or site manager/contractor) have significant experience and capability with sufficient resources in delivering habitat reconstruction (revegetation) projects?		
Are there other risk factors which make the outcome uncertain? ***NVB assessment only***		
Is the applicant proposing novel management actions and the outcomes are uncertain? Are there other issues that pose risks to the delivery of the offset that are not already addressed by the above questions?		
Likelihood of Achieving the Outcome	32.4%	Standard

Future Negative UBS Score	25.40
Future Positive UBS Score	31.35
UBS Gain Score	5.95
Estimate of SEB Points provided	**4.70**

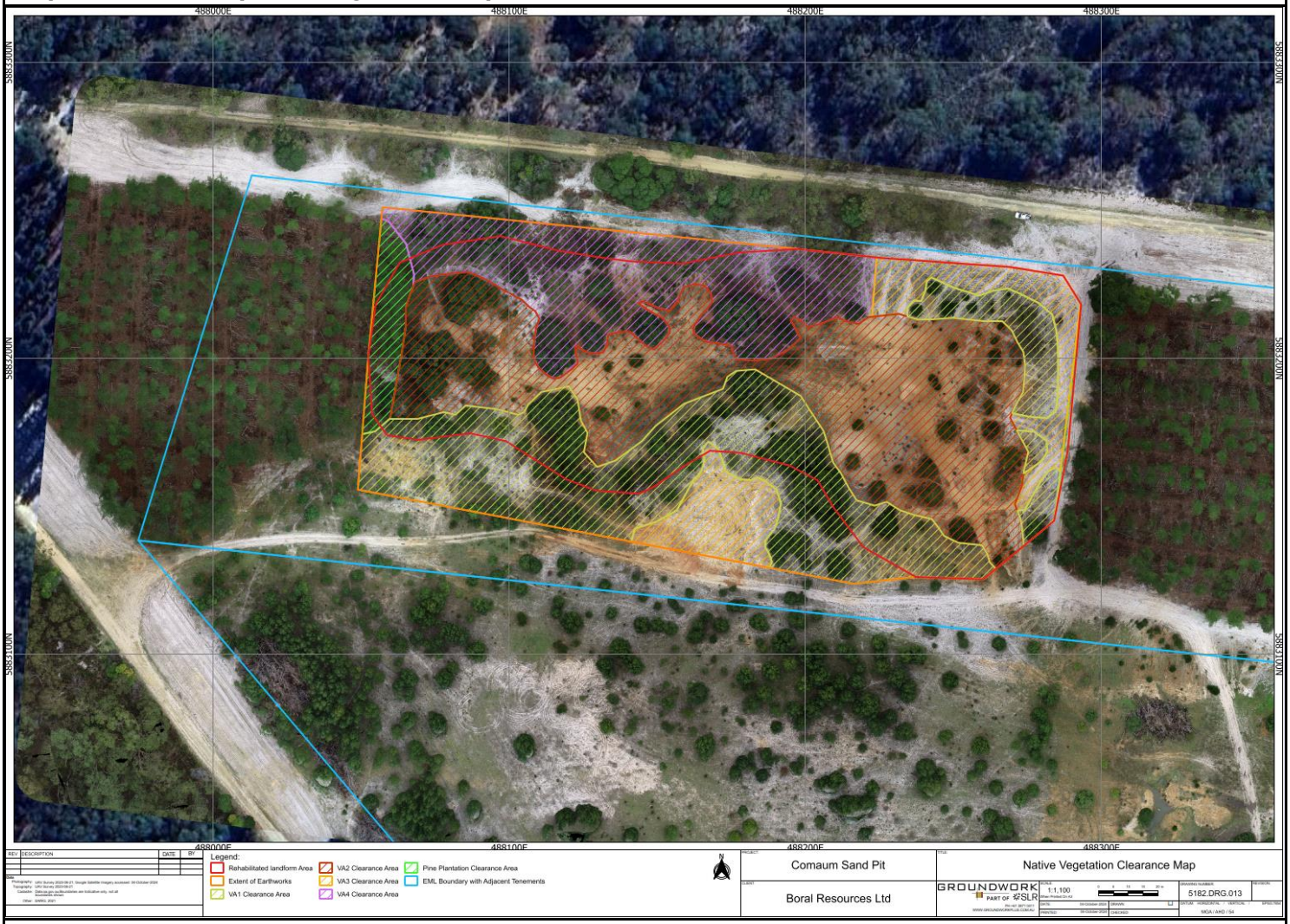
This is an estimate only and will be subject to review and verification by the Native Vegetation Council.

Bushland Assessment Scoresheet (Version - 1 September 2024)

Block	Comaum Sand Pit
Size of Block (Ha)	7.5
Landscapes Region	Limestone Coast
BCM Region	South East
IBRA Association	Naracoorte
IBRA Subregion	Lucindale

ASSESSOR(S)	LJ
DATE OF ASSESSMENT	30/06/2023

Map of the Block (Including the Sites)



Landscape Context Scores

% native veg. remaining in IBRA Assoc.	18
% native veg. remaining in IBRA subregion	19
0 - 10% = 0.05 pts; >10-20% = 0.04 pts; >20-30% = 0.03 pts; >30-60% = 0.02 pts; > 60 = 0 pts — **Score**	0.08

Score received for both IBRA assoc. and subregion then summed

Percent Vegetation Cover (5km radius) (%)	18
0-5% = 0 pts; >5-10% = 0.02 pts; >10-25% = 0.04 pts; >25-50% = 0.06 pts; >50-75% = 0.03 pt; >75-100% = 0 pts — **Score**	0.04

% native veg. protected IBRA Assoc.	51
0-10% = 0.03 pts; >10-20% = 0.02 pts; >20-40% = 0.01 pt; >40% = 0 — **Score**	0

Block Shape Cleared perimeter:Area (km/km2)	
Cleared Perimeter (m) =	1200
Cleared Perimeter to area ratio	16.00
<6 = 0.03 pts; 6 to <12 = 0.02 pts; 12 to <18 = 0.01 pt — **Score**	0.01

Wetland or Riparian Habitat present	
Riparian zone present (Yes/No) = 0.02 pt	No
Swamp/wetland present (Yes/No) = 0.03 pts (Swamp/wetland may be +/- riparian zone)	No
Score	0

Note; Blocks will score a minimum Landscape Context Score of 1

LANDSCAPE CONTEXT SCORE (max 1.25)	**1.13**

Plant Species Recorded (Native and Introduced)		Listed Species			Natives only		Introduced Species
Species	**Common Name**	**EPBC**	**SA**	**Not in quadrat**	**Regen**	**Annual Herbs** Spring survey	
Dodonaea viscosa ssp. angustissima	Narrow-leaf Hop-bush				Yes		
Acacia mearnsii	Black Wattle				Yes		
Ficinia nodosa	Knobby Club-rush						
Acacia pycnantha	Golden Wattle				Yes		
Gramineae sp.	Grass Family						
Eucalyptus viminalis ssp. cygnetensis	Rough-bark Manna Gum						
Isolepis marginata	Little Club-rush						*
Pinus radiata	Radiata Pine						*
Hypochaeris glabra	Smooth Cat's Ear						*
Plantago lanceolata var.	Ribwort						*
Oxalis pes-caprae	Soursob						*
Salvia verbenaca var.	Wild Sage						*
Sixalix atropurpurea	Pincushion						*
Plantago lanceolata var.	Ribwort						*
Isolepis marginata	Little Club-rush						*

Threatened or Introduced Animal Species Recorded or Observed (Native and Introduced)		Threatened Species				Introduced Species
Species	**Common Name**	**EPBC**	**SA**	**Past Record**	**Observed**	
Coracina papuensis robusta	White-bellied Cuckooshrike		R	2005		
Corcorax melanorhamphos	White-winged Chough		R	2009		
Falco peregrinus macropus	Peregrine Falcon		R	2003		
Falcunculus frontatus frontatus	Eastern Shriketit		R	2009		
Microeca fascinans	Jacky Winter			2005		
Oriolus sagittatus sagittatus	Olive-backed Oriole		R	2003		
Zanda funerea whiteae	Yellow-tailed Black Cockatoo		V	2004		
Trichosurus vulpecula	Common Brushtail Possum		R	2014		
Vombatus ursinus	Common Wombat		R		Y - deceas	

Vegetation Condition Scores

SITE:	VA2
BCM COMMUNITY	SE 2.2 Open Forests with open shrub ± bracken understorey on sandy to terra rossa soils
VEGETATION ASSOCIATION DESCRIPTION	*E. viminalis ssp. cygnetensis woodland over Dodonaea viscosa*
SIZE OF SITE (Ha)	0.87

Benchmarked attributes
(Scores determined by comparing to a Benchmark community)

Number of Native Species (Minus herbaceous annuals for spring Surveys)	6
Native Plant Species Diversity Score (max 30) from benchmark score *weighted by a factor of 2*	**4.0**
Number of regenerating native species	3
Regeneration Score (max 12) from benchmark community weighted by a factor of 1.5	**6**

Weed species (Top 5 Cover x Invasiveness)	Cover (max 6)	Weed Threat Rating (max 5)	C x I
Salvia verbenaca var.	2	2	4
Sixalix atropurpurea	3	2	6
Pinus radiata	3	0	0
Plantago lanceolata var.	2	2	4
Oxalis pes-caprae	2	3	6
	Cover x Threat		20
Weed Score (max 15) from benchmark community			**10**

Native Plant Life Forms	**Cover rating**
Trees > 15m	
Trees 5 - 15 m	
Trees < 5m	2
Mallee > 5m	
Mallee < 5m	
Shrubs > 2m	
Shrubs 0.5 - 2m	1
Shrubs <0.5m	
Forbs	
Mat Plants	
Grasses > 0.2m	
Grasses < 0.2m	1
Sedges > 1m	
Sedges < 1m	2
Hummock grasses	
Vines, scramblers	
Mistletoe	
Ferns	
Grass-tree	
Total	6

Native Plant Life Forms (max 20) from benchmark score *weighted by a factor of 2* **4.0**

Non-Benchmarked Attributes
(Scores determined from direct field observations)

Native:exotic Understorey biomass Score (max 5)	**3**

Is the community naturally treeless?	☐
Fallen Timber/Debris (max 5)	**0**
Hollow-bearing trees Score (max 5)	**0**
Mature Tree Score (max 8)	**0**
Tree Canopy Cover Score (max 5)	**0**

Vegetation Condition Score calculation

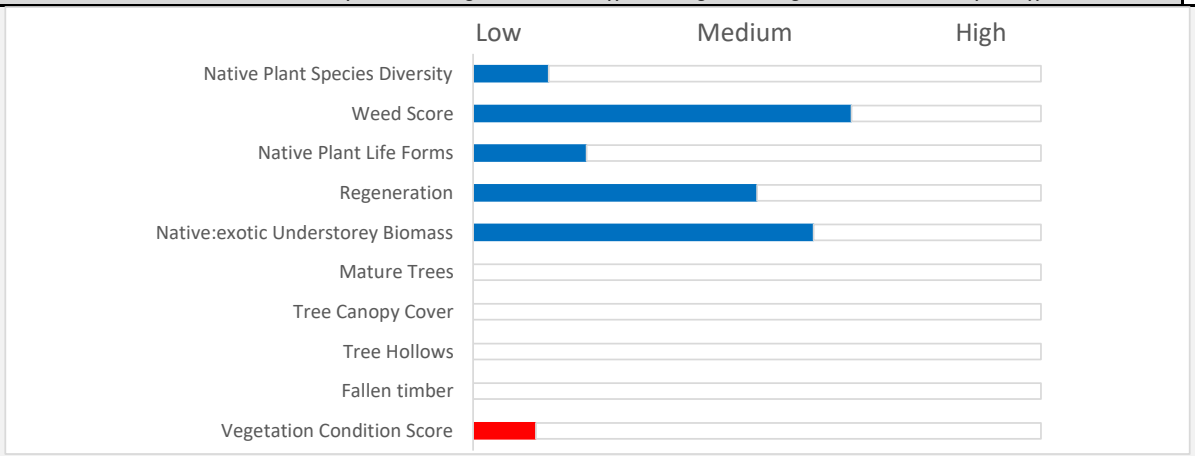
Positive Vegetation Attributes Score = Native species diversity + Regeneration + Native Plant Life Forms Fallen timber/debris + Hollow-bearing trees

- If the community Score is Not Benchmarked (SNB) for regeneration this score is multiplied 1.24

- If the community is naturally treeless this score is multiplied by 1.29 14.00

Negative Vegetation Attributes Score = (15 - Weeds) + ((10 - Biomass score - Tree Canopy Cover Score)exp2/2) 29.50

VEGETATION CONDITION SCORE (Positive veg attributes x ((80 - Negative vegetation attributes) / 80)) **8.84**



Conservation Significance Score

Is the vegetation association considered a Threatened Ecological community or Ecosystem?	Yes/No
State (Provisional List of Threatened Ecosystems of SA) **Rare** community (0.1 pt)	☐
State (Provisional List of Threatened Ecosystems of SA) **Vulnerable** community (0.2 pts)	☐
State (Provisional List of Threatened Ecosystems of SA) **Endangered** community (0.3 pts)	☐
Nationally (EPBC Act) V**ulnerable** community (0.35 pts)	☐
Nationally (EPBC Act) **Endangered** or **Critically Endangered** community (0.4 pts)	☐
Note; all sites will score a minimum Conservation Significance Score of 1 **Threatened Community Score**	1

Number of Threatened Flora Species recorded for the site (within the site)	Number
**If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.*	
State **Rare** species recorded (1 pt each)	0
State **Vulnerable** species recorded (2.5 pt each)	0
State **Endangered** recorded (5 pts each)	0
Nationally **Vulnerable** species recorded (10 pts each)	0
Nationally **Endangered** or **Critically endangered** species recorded (20 pts each)	0
0 = 0 pts; <2 = 0.04 pts; 2 - <5 = 0.08 pts; 5 - <10 = 0.12 pts; 10 - <20 = 0.16 pts; 20 or > = 0.2 pts	**0**
Threatened Flora Score	0

Potential habitat for Threatened Fauna Species (number observed or previously recorded)	Number
**If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.*	
State **Rare** species observed or locally recorded (1 pt each)	7
State **Vulnerable** species observed or locally recorded (2.5 pt each)	1
State **Endangered** species observed or locally recorded (5 pt each)	0
Nationally **Vulnerable** species observed or locally recorded (10 pts each)	0
Nationally **Endangered** or **Critically endangered** species observed or locally recorded (20 pts each)	0
0 = 0 pts; <2 = 0.02 pts; 2 - <5 = 0.04 pts; 5 - <10 = 0.06 pts; 10 - <20 = 0.08pts; 20 or > = 0.1 pts	**9.5**
Threatened Fauna Score	**0.06**
CONSERVATION SIGNIFICANCE SCORE	**1.06**

Total Scores for the Site

	Score
LANDSCAPE CONTEXT SCORE	**1.13**
VEGETATION CONDITION SCORE	**8.84**
CONSERVATION SIGNIFICANCE SCORE	**1.06**

Vegetation Condition x Landscape Context x Conservation Significance =	
UNIT BIODIVERSITY SCORE	10.59
Total Biodiversity Score (Biodiversity Score x hectares)	9.21

Photo Point and Vegetation Survey Location	Direction of the Photo
	West
	GPS Reference
	Datum: GDA20
	Zone (52, 53 or 54):
	Easting (6 digits):
	Northing (7 digits):
	Description

SEB Offset Calculations (when assessing a proposed clearance site)

SEB Points required for offset	
Loss Factor	1.0
Loadings for clearance of protected areas	
Reductions for rehabilitation of impact site	
SEB Uplift Factor	1.10
Total SEB Points Required	**10.13**

SEB - Payment in the Native Vegetation Fund	
SEB Points of Gain/ha Factor	7.5
Approximate SEB hectares required	1.35
Management Cost Factor ($/ha)	$24,764
Economies of Scale Factor	0.5
Mean annual rainfall for the site (mm)	585
Payment into the Fund (GST exclusive)	$9,783.51
Administration fee (GST inclusive)	$538.09
Total Payment Required	**$10,321.60**

SEB Points Provided Calculations

Answer these questions when assessing a site within a proposed SEB area

Refer to the SEB Guide (section on 'Adjust the SEB Points of Gain') for more information

Assessment of SEB site - On ground		
What is the risk of decline or loss of vegetation in the next 20 years?		
Has stock grazing been absent from the site for 10 or more years (and cannot be introduced without approval from the NVC)?		
Is the land subject to zoning or a dedication that is generally restrictive of development activities (e.g. conservation zone, recreation or open space zoning or crown land dedication)?		
There are no, or only very minimal, threats identified that would result in the decline of the vegetation condition (excluding threats beyond the control of the SEB offset provider such as climate change).		
Is the land subject to legally binding obligations (contractual or legislated) that provide an existing level of protection for the native vegetation (e.g. restricts the use of the land or prevents the vegetation from being harmed) that is additional to the protections provided by the Native Vegetation Act 1991?		
Likely % Loss	6.7%	Standard
Will the proposed SEB area be subject to management actions that are clearly and significantly in excess of the standard requirements as set out in the SEB Policy?		
Will a very high standard of revegetation be conducted, including the establishment of a very high proportion of the species diversity which would be expected within the relevant vegetation community, and all strata (which should be present) represented including grasses, sedges, herbs and ground cover plants?		
Will fencing be installed (in excess of the standard stock exclusion fencing) in order to exclude introduced species or excessive herbivory by native and introduced fauna?		
Will intensive and substantial management of threatened flora or fauna be undertaken which is not required in association with the proposed clearance for which the SEB is being provided?		
Are the proposed management actions and their scale of impact already required by duty of care or legislation?		
Only minimal management actions have been committed to in the proposed SEB management plan, such as minimal control of species declared for control under the *Landscapes SA Act 2019* .		
Are the management interventions practically difficult to achieve or is the recovery of the vegetation likely to be inhibited in some way?		
Are there management issues, beyond the control of the SEB offset provider, that are technically or practically difficult to address preventing them from being managed to their fullest possible extent (e.g. weed infestations within difficult to access terrain)?		
Are there physical or environmental constraints which are likely to significantly impede the rehabilitation of vegetation and slow the rate of recovery? This may include compacted soils or altered soil chemistry (e.g. high nutrients/salinity issues) where the issue will continue or increase, significant erosion that cannot be controlled without impacting native vegetation or extensive die-back or plant diseases.		
Likely Improvement Due to Management	14.232	Standard
In relation to sites requiring substantial revegetation, is it highly likely that a good outcome will be achieved?		
Does the applicant (or site manager/contractor) have significant experience and capability with sufficient resources in delivering habitat reconstruction (revegetation) projects?		
Are there other risk factors which make the outcome uncertain? ***NVB assessment only***		
Is the applicant proposing novel management actions and the outcomes are uncertain? Are there other issues that pose risks to the delivery of the offset that are not already addressed by the above questions?		
Likelihood of Achieving the Outcome	18.8%	Standard

Future Negative UBS Score	9.88
Future Positive UBS Score	13.79
UBS Gain Score	3.91
Estimate of SEB Points provided	**3.40**

This is an estimate only and will be subject to review and verification by the Native Vegetation Council.

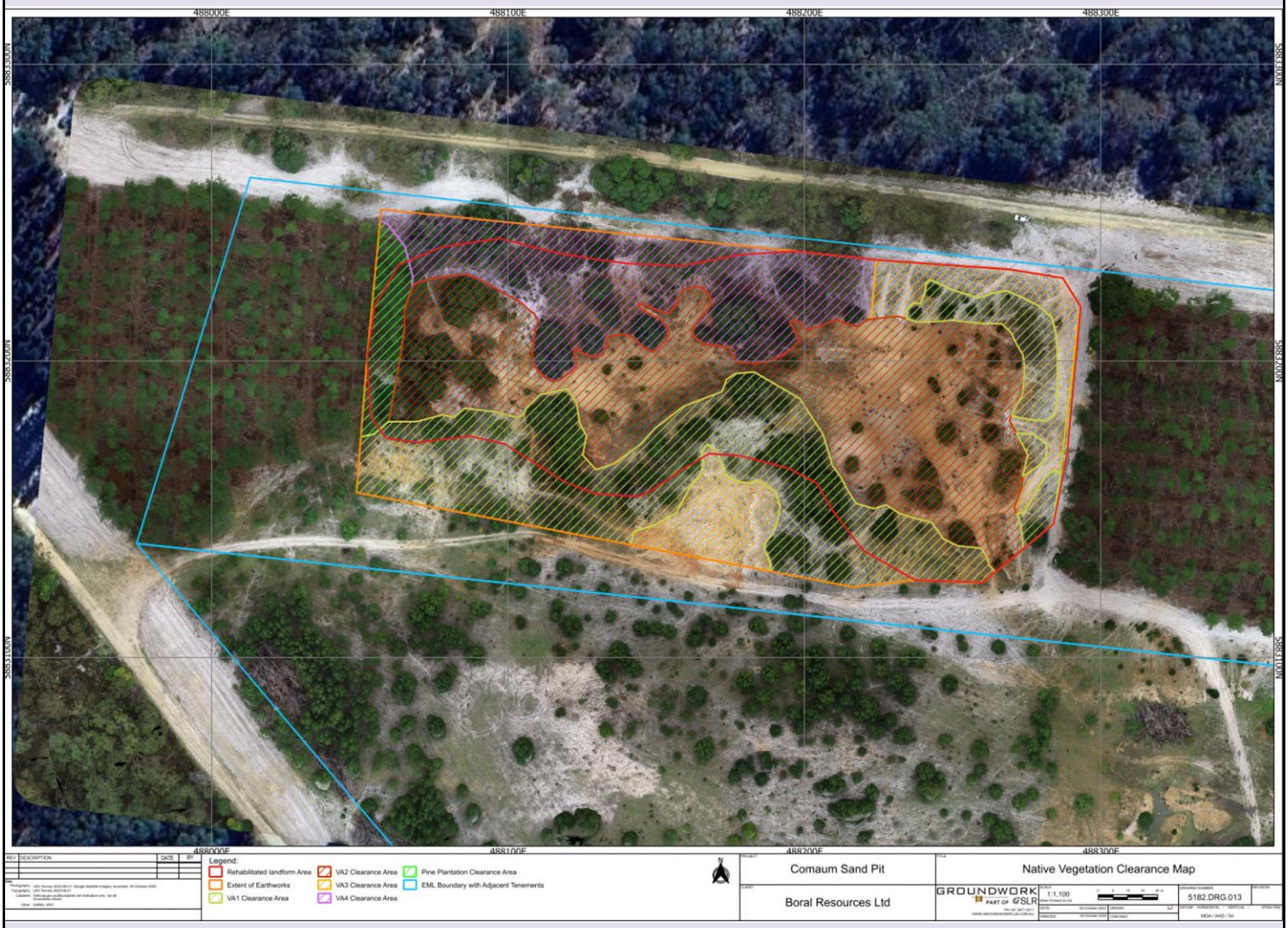
Bushland Assessment Scoresheet (Small Sites)

(Version - 1 Sept 2024)

Block	Comaum Sand Pit
Size of Block (ha)	7.5
Landscapes Region	Limestone Coast
IBRA Association	Naracoorte
IBRA Subregion	Lucindale

ASSESSOR(S)	LJ
DATE OF ASSESSMENT	30/06/2023

Map of the Block (Including the Sites)



Landscape Context Scores

Percent Vegetation Cover (5km radius) (%)	18
0-5% = 0 pts; >5-10% = 0.02 pts; >10-25% = 0.04 pts;	
>25-50% = 0.06 pts; >50-75% = 0.03 pt; >75-100% = 0 pts	
Score	0.04

Block Shape Cleared perimeter:Area (km/km2)	
Cleared Perimeter (m) =	1200
Cleared Perimeter to area ratio	16.00
<6 = 0.03 pts; 6 to <12 = 0.02 pts; 12 to <18 = 0.01 pt	
Score	0.01

Note; Blocks will score a minimum Landscape Context Score of 1

% native veg. remaining in IBRA Assoc.	18
% native veg. remaining in IBRA subregion	19
0 - 10% = 0.05 pts; >10-20% = 0.04 pts; >20-30% = 0.03 pts;	
>30-60% = 0.02 pts; > 60 = 0 pts **Score**	0.08

Score received for both IBRA assoc. and subregion and summed

% native veg. protected IBRA Assoc.	51
0-10% = 0.03 pts; >10-20% = 0.02 pts; >20-40% = 0.01 pt;	
>40% = 0 **Score**	0

Wetland or Riparian Habitat present	
Riparian zone present (Yes/No) = 0.02 pt	No
Swamp/wetland present (Yes/No) = 0.03 pts	No
(Swamp/wetland may be +/- riparian zone)	
Score	0

LANDSCAPE CONTEXT SCORE (max 1.25)	**1.13**

Plant Species Recorded (Native and Introduced)		Threatened Sp.		Introduced Species
Species	**Common Name**	**EPBC**	**SA**	
Ficinia nodosa	Knobby Club-rush			
Isolepis marginata	Little Club-rush			*
Kennedia prostrata	Scarlet Runner			
Sixalix atropurpurea	Pincushion			*
Hypochaeris glabra	Smooth Cat's Ear			*
Erigeron sp.	Fleabane			*

Threatened or Introduced Animal Species Recorded or Observed (Native and Introduced)		Threatened Species				Introduced Species
Species Name	**Common Name**	**EPBC**	**SA**	**Past Record**	**Observed**	
Coracina papuensis robusta	White-bellied Cuckooshrike		R	2005		
Corcorax melanorhamphos	White-winged Chough		R	2009		
Falco peregrinus macropus	Peregrine Falcon		R	2003		
Falcunculus frontatus frontatus	Eastern Shriketit		R	2009		
Microeca fascinans	Jacky Winter			2005		
Oriolus sagittatus sagittatus	Olive-backed Oriole		R	2003		
Zanda funerea whiteae	Yellow-tailed Black Cockato		V	2004		
Trichosurus vulpecula	Common Brushtail Possum			2014		
Vombatus ursinus	Common Wombat		R		Y - deceas	

Vegetation Condition Scores

SITE:	VA3
VEGETATION ASSOCIATION DESCRIPTION	Scattered Isolepis sp. with introduced herbaceous weeds.
SIZE OF SITE (Ha)	0.23

Native Plant species diversity	
Score the diversity of species present in the site as a proportion to what would be expected in a vegetation of that community in very good condition (approaching a pre-European state)	
<5% (3 Points)	☑
5-10% (6 Points)	☐
11 - 20% (9 Points)	☐
21 - 30% (12 Points)	☐
31 - 40 % (15 Points)	☐
41 - 50% (18 Points)	☐
51 - 60% (21 Points)	☐
61 - 70% (24 Points)	☐
71 - 80% (27 Points)	☐
>80% (30 Points)	☐
Native Plant species diversity score (max score of 30)	3

Weed Scores	
Does the site contain plant species declared under the *Landscape SA Act 2019* (1.5 points)	☐
Cover rating for all declared weeds (max of 6)	
Does the site contain environmental weeds (introduced plants with the capacity to invade and exclude native species from bushland. This typically includes species with a BCM weed threat rating of 3, 4 or 5). (1 Point)	☑
Cover rating for all environmental weeds (max of 6)	3
Weed Score (max score of 15)	12

Is the community naturally treeless?	☐
Mature Tree Score (max 8)	**0**
Fallen timber/debris (max 5)	**0**
Hollow-bearing trees Score (max 5)	**0**
Tree Canopy Cover Score (max 5)	**0**
Native:exotic Understorey biomass score (max 5)	**3**

Regeneration	
No regeneration present (0 Points)	☑
Very low regeneration, consisting of highly scattered juvenile plants of a limited number of species (3 points)	☐
Regeneration present, consisting of multiple individual juvinile plants but a limited number of species (6 points)	☐
Multiple species regenerating, but low numbers of juvenile plants (9 points)	☐
Multiple species regenerating with multiple individual juviniles present with varying age classes (12 points)	☐
Regeneration Score (Max 12)	0

Native Plant life form	
All strata of vegetation heavily impacted and native vegetation represented by only scattered plants (4 points)	☑
All strata of vegetation impacted with limited structural diversity, largely uniform age classes and reduced vegetation cover (8 points)	☐
At least one strata of vegetation has been impacted, with reduced structural diversity, elements may be missing (such as plant species that provide specific structural features e.g. sedges or mid layer shrubs) and reduce vegetation cover (12 points)	☐
Limited impacts on native vegetation, with a diversity of structural features and a varied age class, with only a minor loss in structurally diversity, vegetation cover or structural elements (16 points)	☐
All strata of vegetation present, little or no sign of disturbance. A variety of life forms and associated age classes present. Vegetation cover near complete (20 points)	☐
Native Plant life form score (max 20)	4

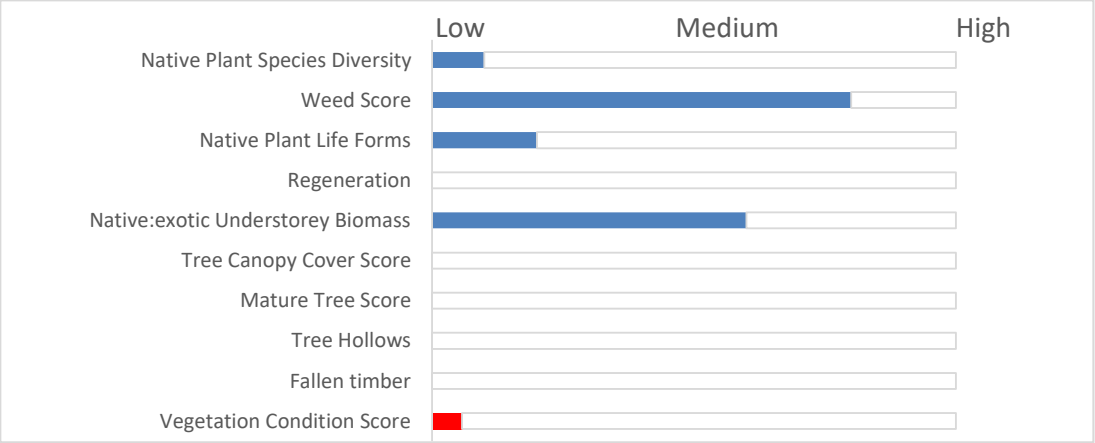
Vegetation Condition Score calculation

Positive Vegetation Attributes Score = Native species diversity + Regeneration + Native Plant Life Forms + Mature Trees + Fallen timber/debris + Hollow-bearing trees

If the community is naturally treeless this score is multiplied by 1.24 — 7.00

Negative Vegetation Attributes Score = (15 - Weeds) + ((10 - Biomass score - Tree Canopy Cover Score)exp2/2) — 27.50

VEGETATION CONDITION SCORE (Positive veg attributes x ((Negative vegetation attributes + 60) / 80)) — **4.59**



Conservation Significance Score

Is the vegetation association considered a Threatened Ecological community or Ecosystem?	Yes/No
State (Provisional List of Threatened Ecosystems of SA) **Rare** community (0.1 pt)	☐
State (Provisional List of Threatened Ecosystems of SA) **Vulnerable** community (0.2 pts)	☐
State (Provisional List of Threatened Ecosystems of SA) **Endangered** community (0.3 pts)	☐
Nationally (EPBC Act) V**ulnerable** community (0.35 pts)	☐
Contains a Nationally (EPBC Act) **Endangered** or **Critically Endangered** community (0.4 pts)	☐
Note; all sites will score a minimum Conservation Significance Score of 1 **Threatened CommuntiyScore**	1

Number of Threatened Flora Species recorded for the site (within the site)	Number
**If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.*	
State **Rare** species recorded (1 pt each)	0
State **Vulnerable** species recorded (2.5 pt each)	0
State **Endangered** recorded (5 pts each)	0
Nationally **Vulnerable** species recorded (10 pts each)	0
Nationally **Endangered** or **Critically endangered** species recorded (20 pts each)	0
0 = 0 pts; <2 = 0.04 pts; 2 - <5 = 0.08 pts; 5 - <10 = 0.12 pts; 10 - <20 = 0.16pts; 20 or > = 0.2 pts	**0**
Threatened Flora Score	0

Potential habitat for Threatened Fauna Species (number observed or previously recorded)	Number
**If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.*	
State **Rare** species observed or locally recorded (1 pt each)	6
State **Vulnerable** species observed or locally recorded (2.5 pt each)	1
State **Endangered** species observed or locally recorded (5 pt each)	0
Nationally **Vulnerable** species observed or locally recorded (10 pts each)	0
Nationally **Endangered** or **Critically endangered** species observed or locally recorded (20 pts each)	0
0 = 0 pts; <2 = 0.02 pts; 2 - <5 = 0.04 pts; 5 - <10 = 0.06 pts; 10 - <20 = 0.08pts; 20 or > = 0.1 pts	**8.5**
Threatened Fauna Score	**0.06**

CONSERVATION SIGNIFICANCE SCORE	1.06

Total Scores for the Site

	Score
LANDSCAPE CONTEXT SCORE	1.13
VEGETATION CONDITION SCORE	4.59
CONSERVATION SIGNIFICANCE SCORE	1.06

Vegetation Condition x Landscape Context x Conservation Significance =	
UNIT BIODIVERSITY SCORE	5.50
Total Biodiversity Score (Biodiversity Score x hectares)	1.27

Photo Point and Vegetation Survey Location

Direction of the Photo

GPS Reference

Datum	
Zone (52, 53 or 54)	
Easting (6 digits)	
Northing (7 digits)	

Description

SEB Offset Calculations (when assessing a proposed clearance site)

SEB Points required for offset	
Loss Factor	1.0
Loadings for clearance of protected areas	
Reductions for rehabilitation of impact site	
SEB Uplift Factor	1.10
Total SEB Points Required	**1.40**

SEB - Payment in the Native Vegetation Fund	
SEB Points of Gain/ha Factor	7.5
Approximate SEB hectares required	0.19
Management Cost Factor ($/ha)	$24,764
Economies of Scale Factor	0.5
Mean Annual rainfall for the site (mm)	585
Payment into the Fund (GST exclusive)	$1,376.26
Administration fee (GST inclusive)	$75.69
Total Payment Required	**$1,451.95**

SEB Points Provided Calculations

Answer these questions when assessing a site within a proposed SEB area

Refer to the SEB Guide (section on 'Adjust the SEB Points of Gain') for more information

Assessment of SEB site - On ground		
What is the risk of decline or loss of vegetation in the next 20 years?		
Has stock grazing been absent from the site for 10 or more years (and cannot be introduced without approval from the NVC)?		
Is the land subject to zoning or a dedication that is generally restrictive of development activities (e.g. conservation zone, recreation or open space zoning or crown land dedication)?		
There are no, or only very minimal, threats identified that would result in the decline of the vegetation condition (excluding threats beyond the control of the SEB offset provider such as climate change).		
Is the land subject to legally binding obligations (contractual or legislated) that provide an existing level of protection for the native vegetation (e.g. restricts the use of the land or prevents the vegetation from being harmed) that is additional to the protections provided by the Native Vegetation Act 1991?		
Likely % Loss	7.1%	Standard
Will the proposed SEB area be subject to management actions that are clearly and significantly in excess of the standard requirements as set out in the SEB Policy?		
Will a very high standard of revegetation be conducted, including the establishment of a very high proportion of the species diversity which would be expected within the relevant vegetation community, and all strata (which should be present) represented including grasses, sedges, herbs and ground cover plants?		
Will fencing be installed (in excess of the standard stock exclusion fencing) in order to exclude introduced species or excessive herbivory by native and introduced fauna?		
Will intensive and substantial management of threatened flora or fauna be undertaken which is not required in association with the proposed clearance for which the SEB is being provided?		
Are the proposed management actions and their scale of impact already required by duty of care or legislation?		
Only minimal management actions have been committed to in the proposed SEB management plan, such as minimal control of species declared for control under the *Landscapes SA Act 2019* .		
Are the management interventions practically difficult to achieve or is the recovery of the vegetation likely to be inhibited in some way?		
Are there management issues, beyond the control of the SEB offset provider, that are technically or practically difficult to address preventing them from being managed to their fullest possible extent (e.g. weed infestations within difficult to access terrain)?		
Are there physical or environmental constraints which are likely to significantly impede the rehabilitation of vegetation and slow the rate of recovery? This may include compacted soils or altered soil chemistry (e.g. high nutrients/salinity issues) where the issue will continue or increase, significant erosion that cannot be controlled without impacting native vegetation or extensive die-back or plant diseases.		
Likely Improvement Due to Management	15.1	Standard
In relation to sites requiring substantial revegetation, is it highly likely that a good outcome will be achieved?		
Does the applicant (or site manager/contractor) have significant experience and capability with sufficient resources in delivering habitat reconstruction (revegetation) projects?		
Are there other risk factors which make the outcome uncertain? ***NVB assessment only***		
Is the applicant proposing novel management actions and the outcomes are uncertain? Are there other issues that pose risks to the delivery of the offset that are not already addressed by the above questions?		
Likelihood of Achieving the Outcome	14.6%	Standard

Future Negative UBS Score	5.11
Future Positive UBS Score	8.14
UBS Gain Score	3.03
Estimate of SEB Points provided	**0.70**

This is an estimate only and will be subject to review and verification by the Native Vegetation Council.

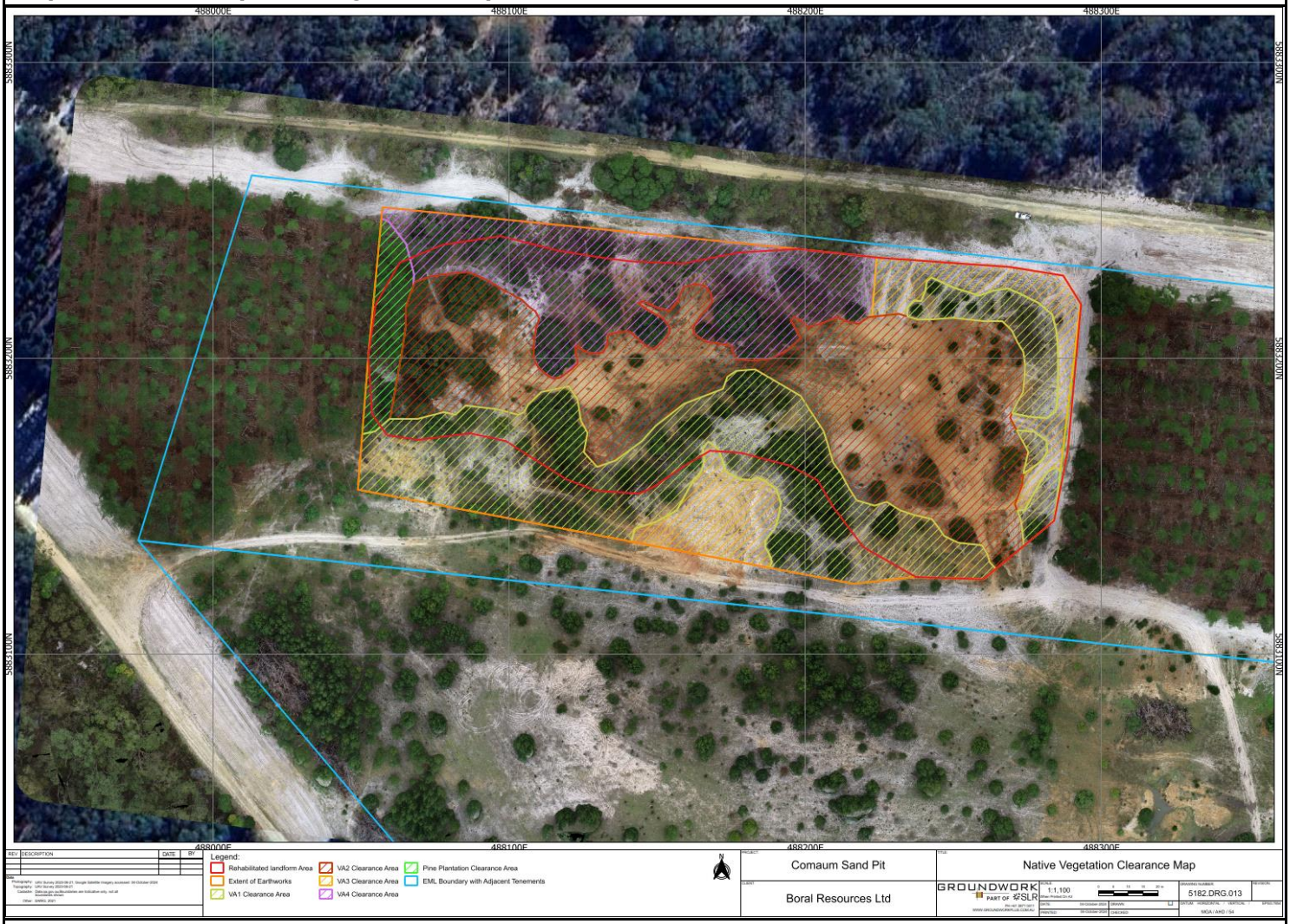
If you answered 'yes' to any question, provide justification in the Data Report

Bushland Assessment Scoresheet (Version - 1 September 2024)

Block	Comaum Sand Pit
Size of Block (Ha)	7.5
Landscapes Region	Limestone Coast
BCM Region	South East
IBRA Association	Naracoorte
IBRA Subregion	Lucindale

ASSESSOR(S)	LJ
DATE OF ASSESSMENT	30/06/2023

Map of the Block (Including the Sites)



Landscape Context Scores

% native veg. remaining in IBRA Assoc.	18
% native veg. remaining in IBRA subregion	19
0 - 10% = 0.05 pts; >10-20% = 0.04 pts; >20-30% = 0.03 pts; >30-60% = 0.02 pts; > 60 = 0 pts — **Score**	0.08

Score received for both IBRA assoc. and subregion then summed

Percent Vegetation Cover (5km radius) (%)	18
0-5% = 0 pts; >5-10% = 0.02 pts; >10-25% = 0.04 pts; >25-50% = 0.06 pts; >50-75% = 0.03 pt; >75-100% = 0 pts — **Score**	0.04

% native veg. protected IBRA Assoc.	51
0-10% = 0.03 pts; >10-20% = 0.02 pts; >20-40% = 0.01 pt; >40% = 0 — **Score**	0

Block Shape Cleared perimeter:Area (km/km2)	
Cleared Perimeter (m) =	1200
Cleared Perimeter to area ratio	16.00
<6 = 0.03 pts; 6 to <12 = 0.02 pts; 12 to <18 = 0.01 pt — **Score**	0.01

Wetland or Riparian Habitat present	
Riparian zone present (Yes/No) = 0.02 pt	No
Swamp/wetland present (Yes/No) = 0.03 pts (Swamp/wetland may be +/- riparian zone)	No
Score	0

Note; Blocks will score a minimum Landscape Context Score of 1

LANDSCAPE CONTEXT SCORE (max 1.25)	**1.13**

Plant Species Recorded (Native and Introduced)		Listed Species			Natives only		
Species	**Common Name**	**EPBC**	**SA**	**Not in quadrat**	**Regen**	**Annual Herbs** Spring survey	**Introduced Species**
Dodonaea viscosa ssp. angustissima	Narrow-leaf Hop-bush				Yes		
Acacia mearnsii	Black Wattle				Yes		
Ficinia nodosa	Knobby Club-rush						
Kennedia prostrata	Scarlet Runner						
Gramineae sp.	Grass Family						
Eucalyptus viminalis ssp. cygnetensis	Rough-bark Manna Gum						
Acacia myrtifolia	Myrtle Wattle				Yes		
Rytidosperma sp.	Wallaby-grass						
Hypochaeris glabra	Smooth Cat's Ear						*
Oxalis perennans	Native Sorrel						
Oxalis pes-caprae	Soursob						*
Salvia verbenaca var.	Wild Sage						*
Sixalix atropurpurea	Pincushion						*
Plantago lanceolata var.	Ribwort						*
Pinus radiata	Radiata Pine						*
Ehrharta longiflora	Annual Veldt Grass						*
Medicago sp.	Medic						*
Isolepis marginata	Little Club-rush						*
Stenanthera conostephioides	Flame Heath						
Hibbertia sp.	Guinea-flower						
Hibbertia sp.	Guinea-flower						
Exocarpos cupressiformis	Native Cherry						
Arctotheca calendula	Cape Weed						*
Pteridium esculentum ssp. esculentum	Bracken Fern				Yes		

Threatened or Introduced Animal Species Recorded or Observed (Native and Introduced)		Threatened Species				Introduced Species
Species	**Common Name**	**EPBC**	**SA**	**Past Record**	**Observed**	
Coracina papuensis robusta	White-bellied Cuckooshrike		R	2005		
Corcorax melanorhamphos	White-winged Chough		R	2009		
Falco peregrinus macropus	Peregrine Falcon		R	2003		
Falcunculus frontatus frontatus	Eastern Shriketit		R	2009		
Microeca fascinans	Jacky Winter			2005		
Oriolus sagittatus sagittatus	Olive-backed Oriole		R	2003		
Zanda funerea whiteae	Yellow-tailed Black Cockatoo		V	2004		
Trichosurus vulpecula	Common Brushtail Possum		R	2014		
Vombatus ursinus	Common Wombat		R		Y - deceas	

Vegetation Condition Scores

SITE:	VA4
BCM COMMUNITY	SE 2.2 Open Forests with open shrub ± bracken understorey on sandy to terra rossa soils
VEGETATION ASSOCIATION DESCRIPTION	*E. viminalis ssp. cygnetensis woodland over Dodonaea viscosa*
SIZE OF SITE (Ha)	0.48

Benchmarked attributes
(Scores determined by comparing to a Benchmark community)

Number of Native Species (Minus herbaceous annuals for spring Surveys)	14
Native Plant Species Diversity Score (max 30) from benchmark score *weighted by a factor of 2*	**12.0**
Number of regenerating native species	4
Regeneration Score (max 12) from benchmark community weighted by a factor of 1.5	**7.5**

Weed species (Top 5 Cover x Invasiveness)	Cover (max 6)	Weed Threat Rating (max 5)	C x I
Salvia verbenaca var.	2	2	4
Sixalix atropurpurea	3	2	6
Pinus radiata	3	0	0
Plantago lanceolata var.	2	2	4
Oxalis pes-caprae	2	3	6
	Cover x Threat		20
Weed Score (max 15) from benchmark community			**10**

Native Plant Life Forms	**Cover rating**
Trees > 15m	
Trees 5 - 15 m	2
Trees < 5m	2
Mallee > 5m	
Mallee < 5m	
Shrubs > 2m	2
Shrubs 0.5 - 2m	2
Shrubs <0.5m	
Forbs	2
Mat Plants	1
Grasses > 0.2m	
Grasses < 0.2m	2
Sedges > 1m	
Sedges < 1m	2
Hummock grasses	
Vines, scramblers	
Mistletoe	
Ferns	3
Grass-tree	
Total	18

Native Plant Life Forms (max 20) from benchmark score *weighted by a factor of 2* **16.0**

Non-Benchmarked Attributes
(Scores determined from direct field observations)

Native:exotic Understorey biomass Score (max 5)	**4**

Is the community naturally treeless?	☐
Fallen Timber/Debris (max 5)	**1**
Hollow-bearing trees Score (max 5)	**0**
Mature Tree Score (max 8)	**2**
Tree Canopy Cover Score (max 5)	**1**

Vegetation Condition Score calculation

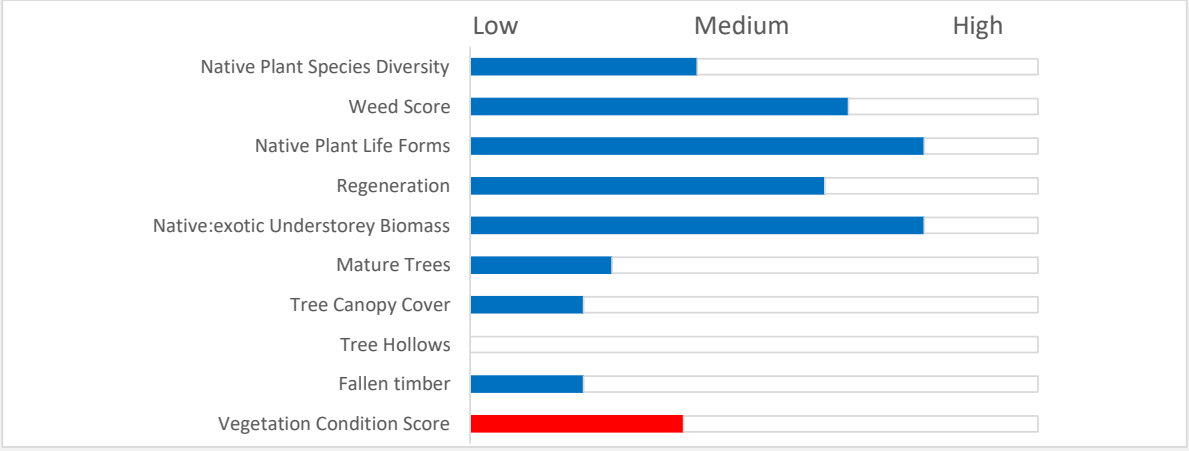
Positive Vegetation Attributes Score = Native species diversity + Regeneration + Native Plant Life Forms Fallen timber/debris + Hollow-bearing trees

- If the community Score is Not Benchmarked (SNB) for regeneration this score is multiplied 1.24

- If the community is naturally treeless this score is multiplied by 1.29 38.50

Negative Vegetation Attributes Score = (15 - Weeds) + ((10 - Biomass score - Tree Canopy Cover Score)exp2/2) 17.50

VEGETATION CONDITION SCORE (Positive veg attributes x ((80 - Negative vegetation attributes) / 80)) **30.08**



Conservation Significance Score

Is the vegetation association considered a Threatened Ecological community or Ecosystem?	Yes/No
State (Provisional List of Threatened Ecosystems of SA) **Rare** community (0.1 pt)	☐
State (Provisional List of Threatened Ecosystems of SA) **Vulnerable** community (0.2 pts)	☐
State (Provisional List of Threatened Ecosystems of SA) **Endangered** community (0.3 pts)	☐
Nationally (EPBC Act) V**ulnerable** community (0.35 pts)	☐
Nationally (EPBC Act) **Endangered** or **Critically Endangered** community (0.4 pts)	☐
Note; all sites will score a minimum Conservation Significance Score of 1 **Threatened Community Score**	1

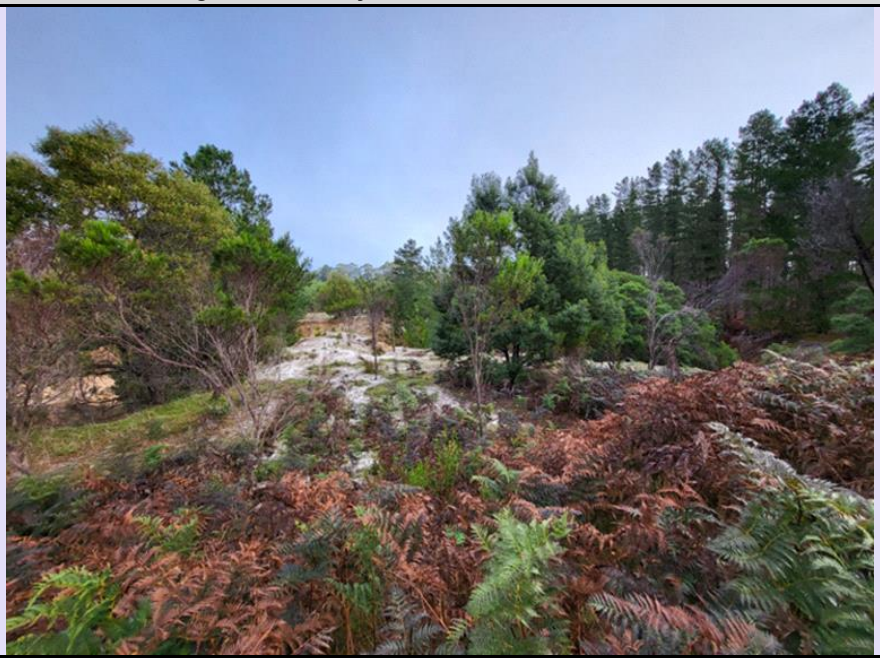
Number of Threatened Flora Species recorded for the site (within the site)	Number
**If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.*	
State **Rare** species recorded (1 pt each)	0
State **Vulnerable** species recorded (2.5 pt each)	0
State **Endangered** recorded (5 pts each)	0
Nationally **Vulnerable** species recorded (10 pts each)	0
Nationally **Endangered** or **Critically endangered** species recorded (20 pts each)	0
0 = 0 pts; <2 = 0.04 pts; 2 - <5 = 0.08 pts; 5 - <10 = 0.12 pts; 10 - <20 = 0.16 pts; 20 or > = 0.2 pts	**0**
Threatened Flora Score	0

Potential habitat for Threatened Fauna Species (number observed or previously recorded)	Number
**If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.*	
State **Rare** species observed or locally recorded (1 pt each)	7
State **Vulnerable** species observed or locally recorded (2.5 pt each)	1
State **Endangered** species observed or locally recorded (5 pt each)	0
Nationally **Vulnerable** species observed or locally recorded (10 pts each)	0
Nationally **Endangered** or **Critically endangered** species observed or locally recorded (20 pts each)	0
0 = 0 pts; <2 = 0.02 pts; 2 - <5 = 0.04 pts; 5 - <10 = 0.06 pts; 10 - <20 = 0.08pts; 20 or > = 0.1 pts	**9.5**
Threatened Fauna Score	**0.06**
CONSERVATION SIGNIFICANCE SCORE	**1.06**

Total Scores for the Site

	Score
LANDSCAPE CONTEXT SCORE	**1.13**
VEGETATION CONDITION SCORE	**30.08**
CONSERVATION SIGNIFICANCE SCORE	**1.06**

Vegetation Condition x Landscape Context x Conservation Significance =	
UNIT BIODIVERSITY SCORE	36.03
Total Biodiversity Score (Biodiversity Score x hectares)	17.29

Photo Point and Vegetation Survey Location	Direction of the Photo
	West
	GPS Reference
	Datum: GDA20
	Zone (52, 53 or 54):
	Easting (6 digits):
	Northing (7 digits):
	Description

SEB Offset Calculations (when assessing a proposed clearance site)

SEB Points required for offset	
Loss Factor	1.0
Loadings for clearance of protected areas	
Reductions for rehabilitation of impact site	
SEB Uplift Factor	1.10
Total SEB Points Required	**19.02**

SEB - Payment in the Native Vegetation Fund	
SEB Points of Gain/ha Factor	7.5
Approximate SEB hectares required	2.54
Management Cost Factor ($/ha)	$24,764
Economies of Scale Factor	0.5
Mean annual rainfall for the site (mm)	585
Payment into the Fund (GST exclusive)	$18,369.44
Administration fee (GST inclusive)	$1,010.32
Total Payment Required	**$19,379.76**

SEB Points Provided Calculations

Answer these questions when assessing a site within a proposed SEB area

Refer to the SEB Guide (section on 'Adjust the SEB Points of Gain') for more information

Assessment of SEB site - On ground		
What is the risk of decline or loss of vegetation in the next 20 years?		
Has stock grazing been absent from the site for 10 or more years (and cannot be introduced without approval from the NVC)?		
Is the land subject to zoning or a dedication that is generally restrictive of development activities (e.g. conservation zone, recreation or open space zoning or crown land dedication)?		
There are no, or only very minimal, threats identified that would result in the decline of the vegetation condition (excluding threats beyond the control of the SEB offset provider such as climate change).		
Is the land subject to legally binding obligations (contractual or legislated) that provide an existing level of protection for the native vegetation (e.g. restricts the use of the land or prevents the vegetation from being harmed) that is additional to the protections provided by the Native Vegetation Act 1991?		
Likely % Loss	4.9%	Standard
Will the proposed SEB area be subject to management actions that are clearly and significantly in excess of the standard requirements as set out in the SEB Policy?		
Will a very high standard of revegetation be conducted, including the establishment of a very high proportion of the species diversity which would be expected within the relevant vegetation community, and all strata (which should be present) represented including grasses, sedges, herbs and ground cover plants?		
Will fencing be installed (in excess of the standard stock exclusion fencing) in order to exclude introduced species or excessive herbivory by native and introduced fauna?		
Will intensive and substantial management of threatened flora or fauna be undertaken which is not required in association with the proposed clearance for which the SEB is being provided?		
Are the proposed management actions and their scale of impact already required by duty of care or legislation?		
Only minimal management actions have been committed to in the proposed SEB management plan, such as minimal control of species declared for control under the *Landscapes SA Act 2019* .		
Are the management interventions practically difficult to achieve or is the recovery of the vegetation likely to be inhibited in some way?		
Are there management issues, beyond the control of the SEB offset provider, that are technically or practically difficult to address preventing them from being managed to their fullest possible extent (e.g. weed infestations within difficult to access terrain)?		
Are there physical or environmental constraints which are likely to significantly impede the rehabilitation of vegetation and slow the rate of recovery? This may include compacted soils or altered soil chemistry (e.g. high nutrients/salinity issues) where the issue will continue or increase, significant erosion that cannot be controlled without impacting native vegetation or extensive die-back or plant diseases.		
Likely Improvement Due to Management	9.984	Standard
In relation to sites requiring substantial revegetation, is it highly likely that a good outcome will be achieved?		
Does the applicant (or site manager/contractor) have significant experience and capability with sufficient resources in delivering habitat reconstruction (revegetation) projects?		
Are there other risk factors which make the outcome uncertain? ***NVB assessment only***		
Is the applicant proposing novel management actions and the outcomes are uncertain? Are there other issues that pose risks to the delivery of the offset that are not already addressed by the above questions?		
Likelihood of Achieving the Outcome	40.1%	Standard

Future Negative UBS Score	34.26
Future Positive UBS Score	40.83
UBS Gain Score	6.57
Estimate of SEB Points provided	**3.15**

This is an estimate only and will be subject to review and verification by the Native Vegetation Council.

Attachment 3

Threatened Fauna Species Summary

Threatened Flora Species

Species	Common Name	National Rating	State Rating	Date of Last Record
Glycine latrobeana	Clover Glycine	VU	V	26-Sep-2011
Dipodium campanulatum	Bell-flower Hyacinth Orchid	EN	V	30-Dec-2011
Caladenia venusta	Large White Spider-orchid		V	01-Nov-2003
Dipodium pardalinum	Leopard Hyacinth-orchid		V	04-Jan-2011
Eucalyptus pauciflora ssp. pauciflora	Snow Gum		V	01-Sep-2009
Hovea heterophylla	Common Hovea		V	23-May-2014
Ranunculus sessiliflorus var. pilulifer	Annual Buttercup		V	01-Jan-2003
Caladenia necrophylla	Late Spider-orchid		R	03-Dec-2004
Corybas unguiculatus	Small Helmet-orchid		R	01-Aug-2003
Cycnogeton alcockiae	Alcock's Water-ribbons		R	09-Sep-2003
Eucalyptus fasciculosa	Pink Gum		R	23-May-2014
Galium curvihirtum	Tight Bedstraw		R	11-Dec-2007
Gonocarpus humilis	Shade Raspwort		R	01-Sep-2009
Lobelia pratioides	Poison Lobelia		R	19-Jun-2017
Melaleuca squarrosa	Bottlebrush Tea-tree		R	01-Jun-2003
Mentha diemenica	Slender Mint		R	01-Jan-2003
Montia australasica	White Purslane		R	19-Jun-2017
Pentapogon quadrifidus var. quadrifidus	Five-awn Spear-grass		R	01-Jan-2003
Poa morrisii	Soft Tussock-grass		R	26-Sep-2011
Poa rodwayi	Velvet Tussock-grass		R	23-May-2014
Pterostylis striata	Tall Shell-orchid		R	22-Jun-2017
Ranunculus inundatus	River Buttercup		R	19-Jun-2017
Sphaerolobium minus	Leafless Globe-pea		R	01-Jan-2003
Spiranthes australis	Austral Lady's Tresses		R	03-Mar-2011
Scleranthus diander	Tufted Knawel		E	09-Dec-2009

Attachment 5

Confidential - Aboriginal Heritage Sites Search

Attachment 6

Legislation and Standards

Environmental Aspect	Applicable Legislation	Applicable Non-Legislated Standard/s
Public Safety	*Work Health and Safety Act 2012* (SA) and Regulations *Mining Act 1971* (SA) *Local Government Act 1999* (SA)	Mine Closure and Completion: Leading Practice Sustainable Development Program for the Mining Industry (Department of Industry, Tourism and Resources, 2016).
Traffic	*Work Health and Safety Act 2012* (SA) and Regulations *Road Traffic Act 1961* (SA) *Local Government Act 1999* (SA)	N/A
Protection of Third Party Property	*Work Health and Safety Act 2012 (SA) and Regulations* *Mining Act 1971* *Local Government Act 1999* *Electricity Act 1996* *Electricity (General) Regulations 2012* *Country Fires Act 1989* *Forestry Act 1950*	N/A
Heritage	*Aboriginal Heritage Act 1988* (SA) *Heritage Places Act 1993* (SA) *Mining Act 1971* (SA) and Regulations *Planning, Development and Infrastructure Act 2016* *Aboriginal and Torres Strait Island Heritage Protection Act 1987* (Cth)	Cultural Heritage Guidelines, A handbook for Staff and Contractors, (Transport SA 1999) Section 20 of the *Aboriginal Heritage Act 1988*: Discovery of sites, objects or remains
Weeds, Pests and Plant pathogens	*Landscape South Australia Act 2019* *Controlled Substances Act 1984* (SA) and Regulations (SA) 2017 *Agricultural and Veterinary Products Act (Control of Use) Act 2002* (SA) and Regulations 2017	Weed control handbook for declared plants in South Australia (Government of South Australia, 2017)
Topsoil management	*Landscape South Australia Act 2019*	Mine Closure and Completion: Leading Practice Sustainable Development Program for the Mining Industry (Department of Industry, Tourism and Resources, 2006).

Environmental Aspect	Applicable Legislation	Applicable Non-Legislated Standard/s
Waste management	*Zero Waste SA Act 2004* (SA) *Environmental Protection Act 1993* (SA) *Environment Protection (Waste to Resources) Policy 2010* (SA) *Environment Protection (National Pollutant Inventory) Policy 2008* (Cth)	EPA Guideline: Site contamination—what is site contamination? (EPA, 2009) EPA Guideline: EPA080/16 Bunding and spill management (EPA, 2016)
Visual amenity	*Mining Act 1971* (SA) and *Mining Regulations 2020*	South Australian Planning and Design Code
Noise	*Environment Protection Act 1993* (SA) *Environment Protection (Commercial & Industrial Noise) Policy 2023*	South Australian Planning and Design Code
Dust	*Environment Protection Act 1993* (SA) *Environment Protection (Air Quality) Policy 2016* (SA) *The South Australian Public Health Act 2011* (SA) *Local Government Act 1999* (SA)	World Health Organisation (WHO) Air Quality Guidelines, 2005 National Environment Protection (Ambient Air Quality) Measure Australian Standard AS 3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulates – Deposited matter – Gravimetric method Australian Standard AS 3580.9.6 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 high volume sampler with size-selective inlet – Gravimetric method
Groundwater	*Environment Protection Act 1993* (SA) *Environment Protection (Water Quality) Policy 2015* (SA) *Natural Resources Management Act 2004* (SA)	Australian and New Zealand Guidelines for Fresh and Marine Waters (ANZECC and ARMCANZ, 2000)
Native vegetation	*Landscape South Australia Act 2019*) *Native Vegetation Act 1991* (SA) *Environment Protection and Biodiversity Conservation Act 1999* (Cth)	Guide to the *Native Vegetation Regulations 2017*, Native Vegetation Council (July, 2019)
Surface water (Erosion, Sediment and Stormwater Management)	*Environment Protection Act 1993* (SA) *Environment Protection (Water Quality) Policy 2015* (SA)	Australian and New Zealand Guidelines for Fresh and Marine Waters (ANZECC and ARMCANZ, 2000) Code of practice for wastewater overflow management (EPA, 2017)

Environmental Aspect	Applicable Legislation	Applicable Non-Legislated Standard/s
		Stormwater pollution prevention: Code of practice for the building and construction industry (EPA, 1999)

Emma Manuel

From: Stuart Adam <sadam@onefortyone.com>
Sent: Tuesday, 1 October 2024 4:48 PM
To: James Rowe
Cc: Emma Manuel; Louise Jaunay
Subject: RE: Rehabilitation Plan - Comaum

Afternoon James

Thanks for the reply. OneFortyOne PlantationS are happy with a 1:3 batter.

Kind Regards

Stuart
Adam

Roading Forester
Green Triangle Forests
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D: +61 8 8724 2706

Home Safe & Well

From: James Rowe <james.rowe@slrconsulting.com>
Sent: Tuesday, 1 October 2024 4:13 PM
To: Stuart Adam <sadam@onefortyone.com>
Cc: Emma Manuel <emma.manuel@slrconsulting.com>; Louise Jaunay <louise.jaunay@slrconsulting.com>
Subject: RE: Rehabilitation Plan - Comaum

Hi Stuart,

Yes sure. 1:3 batters are an industry standard for rehabilitation of sand quarries.

They are accepted in all states, the drawing below highlights the batter angle within the A-A' and B-B' Cross Section that you can note is very conservative.

To assist we could add into the PEPR and design that the batters are seeded with pines (or alternate) if you would like?? Media growth will also assist with minimising any erosional or channelling affects.

Regards,

James

James Rowe
Technical Director & Growth Lead - Groundwork

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SLR acknowledges the traditional custodians of Country and recognises their continuing stewardship and connection to land, water and community. We pay our respect to Aboriginal and Torres Strait Islander cultures; and to Elders past and present.

From: Stuart Adam <sadam@onefortyone.com>
Sent: Tuesday, 1 October 2024 4:07 PM
To: James Rowe <james.rowe@slrconsulting.com>
Cc: Emma Manuel <emma.manuel@slrconsulting.com>; Louise Jaunay <louise.jaunay@slrconsulting.com>
Subject: RE: Rehabilitation Plan - Comaum

Good Afternoon James

Thanks for touching base on the project. I had a chat to our estate manager and he ask the question: Can you provide some data that 1:3 batter won't have any adverse effects e.g. erosion?

Kind Regards

Stuart
Adam

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Home Safe & Well

From: James Rowe <james.rowe@slrconsulting.com>
Sent: Tuesday, 1 October 2024 3:27 PM
To: Stuart Adam <sadam@onefortyone.com>
Cc: Emma Manuel <emma.manuel@slrconsulting.com>; Louise Jaunay <louise.jaunay@slrconsulting.com>
Subject: Rehabilitation Plan - Comaum

****EXTERNAL EMAIL – Think quick before you click****

Hi Stuart,

Hope all is well.

It has been some time since we last engaged with you and have been awaiting onsite meetings with the local indigenous that has been time consuming to organise to date.

In the meantime we have moved forward with the 1:3 battered design for the site, please find below:

5182.DRG.011 - Proposed Rehabilitation Plan-A3-L.pdf
https://groundworkplus.egnyte.com/dl/2aBC5nFEJI
Password – TsLXq4tJ

What the regulator (DEM) does require is written documentation (email is fine) acknowledging that One Forty One as the landowner are happy with the 1:3 batter to inform the rehabilitation design. For context the Lease Conditions of the site stated a 1:5 design of which would be difficult to achieve given the skinny tenement width.

If you can please confirm the above and feel free to call if you have any questions.

Regards,

James

James Rowe
Technical Director & Growth Lead - Groundwork

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Attachment 7

Landowner Consultation

Emma Manuel

From: Emma Manuel
Sent: Tuesday, 4 February 2025 1:45 PM
To: Stuart Adam
Cc: James Rowe; andrew.bondini@boral.com.au; Sheryl Vickery
Subject: RE: Topsoil Lease Condition amendment

Hi Stuart,

I spoke with Boral and they would like to confirm the estimate for topsoil are a desktop assessment and may be subject to change when operations occurring, however will still commit to wall batters the first priority of management.

It is noted the "topsoil" has historically, and will be for future operations more representative of a blend of the sandy soil and sub surface layers and this is what is consistent with the adjoining landscapes and onsite and is supporting regrowth at the moment.

Any queries on this please let me know, otherwise the consultation section of the PEPR will reflect this and the below correspondence.

Many thanks,
Emma

Emma Manuel
Senior Project Consultant - Environmental Management, Permitting & Compliance

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From: Stuart Adam <sadam@onefortyone.com>
Sent: Monday, 3 February 2025 11:14 AM
To: Emma Manuel <emma.manuel@slrconsulting.com>
Cc: James Rowe <james.rowe@slrconsulting.com>; andrew.bondini@boral.com.au; Sheryl Vickery <sheryl.vickery@onefortyone.com>
Subject: RE: Topsoil Lease Condition amendment

Good Morning Emma

We agree with the planned strategy as proposed in the PEPR to apply topsoil primarily to the walls and then any remaining to the pit floor.

Kind Regards

Stuart
Adam

Roading Forester
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Home Safe & Well

From: Emma Manuel <emma.manuel@slrconsulting.com>
Sent: Monday, 3 February 2025 10:46 AM
To: Stuart Adam <sadam@onefortyone.com>
Cc: James Rowe <james.rowe@slrconsulting.com>; andrew.bondini@boral.com.au
Subject: Topsoil Lease Condition amendment

Hi Stuart,

The Rehabilitation / Closure PEPR has been submitted to Department for Environment and Mining (DEM) and they have requested we seek confirm in writing from you regarding a lease condition addressing topsoil.

First Schedule Lease condition 2 states:

“The mined area is to be progressively backfilled with a minimum thickness of 0.5 meters of topsoil.”

The calculations of the topsoil stockpiles onsite and the remaining area to be disturbed for rehabilitation identified:

A desktop estimate was undertaken on the final landform, there is potentially 5,000 m2 of area that could contain topsoil for rehab purposes from existing stockpiles and newly won topsoil from undisturbed areas. Thickness for rehabilitation is calculated at 0.5 metre as per the lease.

Topsoil required for Rehab areas:

- Walls / batter slopes covers 11,500 m2 = 5,750 m3 of topsoil.
- Floor area is 7,200 m2 = 3,600 m3 of topsoil.

Therefore, we have assessed the walls could be covered but not the floor and has been described in the rehabilitation of the Site. This will allow for revegetation on the amended slopes of 1:3 as previously agreed, and mitigate erosion. Any additional material or remaining topsoil can be spread on the floor of the pit if there is any.

Factors that have been considered for rehab are:

1. The lease conditions from this time period had this thickness included as a minimum and was not calculated based on actual depth vs area etc.
2. The majority of the Site has been extracted and the remaining works are reshaping and use of historic topsoil bunds and any material won through proposed earthworks (as calculated above).
3. The surrounding landforms also contains minimal topsoil and shows signs of successful revegetation, as does the Site.

Can you please advise via reply email the strategy as proposed in the PEPR is to apply topsoil primarily to the walls and then any remaining to the pit floor.

Kind regards,
Emma

Emma Manuel
Senior Project Consultant - Environmental Management, Permitting & Compliance

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