

**ANNUAL
BIODIVERSITY
MONITORING
REPORT
2022**

Prepared for Hodgson Quarries and Plant Pty Ltd

October 2022 V.1



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Annual Biodiversity Monitoring Report 2022

**Hodgson Quarries and Plant Pty Ltd
Roberts Road Maroota NSW**

This assessment has been prepared by

South East Environmental

October 2022 V.1

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Abbreviations

Abbreviation	Description
BC Act	<i>Biodiversity Conservation Act 2016</i>
DPIE	Department of Planning, Industry and Environment
EEC	Endangered Ecological Community
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
HTW	High Threat Weed
KPI	Key Performance Indicators
KTP	Key Threatening Processes
LEP	Local Environmental Plan
NSW OEES	New South Wales Office of Environment, Energy and Science
OEMP	Operational Environmental Management Plan
ONR	Old Northern Road
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
THSC	The Hills Shire Council
VIS	Vegetation Information System
WoNS	Weeds of National Significance

1 INTRODUCTION

This Annual Biodiversity Monitoring Report presents the findings of the annual monitoring of the biodiversity value within the Hodgson Quarries operation at Roberts Road Maroota.

1.1 BACKGROUND

Hodgson Quarries and Plant Pty Ltd operates a sand extraction and processing operation on a 28 hectare site including Lot 1 and 2 of DP228308 and Lot 2 of DP312327 Roberts Road Maroota. The quarry operates in compliance to Development Consent File No. S98/00772 issued by the Minister for Urban Affairs and Planning in 2000.

Several modifications have been made to the Development Consent, the most recent (Mod 4) being approved in 2021. Modification 3 triggered a review of the Operational Environmental Management Plan (OEMP) which included the update of a Flora and Fauna Management Plan. A requirement of the Flora and Fauna Management Plan, as addressed in Schedule 2 Condition 55 of the consent, is to develop an ongoing monitoring program for existing vegetated areas to assess their floristic structure, diversity, resilience, robustness to disturbance and fauna species diversity.

1.2 OBJECTIVES

The objectives of this Annual Biodiversity Monitoring Report is to describe the current condition of the vegetation found throughout the site and to advise Hodgson Quarries on the appropriate management measures that should be implemented to meet the expectations of the Flora and Fauna Management Plan (2016) prepared by VGT Pty Ltd.

This report will:

- identify native flora and fauna species, populations and ecological communities known to or likely to occur within the site;
- describe the native vegetation and habitats within the site;
- describe the current condition of the threatened flora and its habitat found within the site;
- determine the legislative and conservation significance of species, populations and ecological communities known or likely to occur within the site with reference to the Commonwealth *EPBC Act 1999* and the *NSW BC Act 2016*;
- recommend appropriate biodiversity and environmental management measures that should be implemented to reach criteria for monitoring success set by the Flora and Fauna Management Plan for the Sand Quarry, Roberts Road Maroota, NSW (2016);
- provide an independent monitoring report for inclusion as part of the external reporting for the quarry Annual Review.

2 METHODOLOGY

2.1 SITE HISTORY

2.1.1 Agricultural use

Much of the undisturbed area on the Roberts Road quarry site is agricultural land. Approximately 9 hectares is currently in use for this purpose, with approximately 0.5 hectares currently under active rehabilitation within the agricultural land area as will be discussed further in this report.

The remaining vegetation within the agricultural land area has had ongoing disturbance over many years which has including timber removal, livestock grazing and fruit orchards. As a result, exotic weed species are common. Farm dams have been dug which once provided irrigation to the fruit orchards and now provide water to livestock and Sunrise Plant Nursery which is located in the north/west corner of the property. They also provide a water source for native and exotic species that occur in the immediate area.

2.1.2 Remnant native vegetation

An area immediately north of the entrance gate along Roberts Road contains remnant native vegetation which has been excluded from the sand extraction operational area. Although this area shows signs of past disturbance, it remains relatively intact and appears to be supporting a reasonable diversity of native flora and fauna given its small size of approximately 1 hectare.

The remnant native vegetation consists of a Sandstone Gully Forest type which was most likely once a moist open forest at the head of the catchment for Coopers Creek which extends further to the north. This vegetation type would have supported several species of canopy tree which were likely to have been harvested for fence post timber in the early European settlement era. Remaining canopy species are most likely regrowth from a clearing event in the early 1900's and provide ample protection for the lower stratum. Fencing to exclude livestock has improved the ability for native species, particularly the ground cover stratum, to flourish.

2.1.3 Threatened flora habitat

An area in the north eastern corner of the site contains a threatened flora species which has previously been identified and monitored. The area where this species has been located has had severe disturbance in the past from clearing, grazing and most recently the sand quarry operations.

The area immediately surrounding the threatened species consists of pushed up crushed sandstone material which has resulted in an extremely compacted ground surface. Native shrubs from the soil seed bank and surrounding areas are becoming established despite the harsh growing conditions. It is expected that over time without intervention this area will establish as an extension of the remnant native vegetation adjacent although the plant community type may remain different indefinitely due to the change in surface geology.

2.2 FIELD SURVEY

Botanical surveys of the study area were conducted during October 2022. The survey consisted of a random meander throughout the areas of the property not in current use by quarry operations.

A targeted threatened flora survey was undertaken to locate *Acacia bynoeana* onsite. All flora species recorded are listed in Appendix A of this report.

Opportunistic sightings were also undertaken for indirect evidence of native fauna, including scratches, scats, nests, hollows in use, camps, roosts, den sites etc. Opportunistic sightings of all fauna species were recorded throughout the survey period.

There is no requirement for targeted threatened fauna surveys within the site however incidental sightings from previous reporting periods has been considered for this report.

2.3 CRITERIA TO MONITOR SUCCESS

VGT Pty Ltd 2016 have outlined the Key Performance Indicators (KPI) to measure success of the biodiversity and rehabilitation effort of the flora and fauna management within the Roberts Road quarry site. The following tables depict the performance and completion criteria for the site.

Table 1. Performance and completion criteria for Roberts Road quarry (taken from VGT Pty Ltd 2016)

<i>Performance Criteria being monitored</i>	
<i>Native Vegetation monitoring</i>	Demonstrated use of native plant species naturally occurring in the Maroota area used in all progressive revegetated and rehabilitated areas.
	Low mortality of plants used in progressive revegetation with 75% becoming established 3 years after planting.
	Installation of high durability fencing, with low maintenance requirements and suitable for excluding cattle and other livestock, to be installed prior to the completion of revegetation work areas.
	Fencing surrounding revegetated and rehabilitated areas are maintained in working condition.
	Installation of fencing along the southern fence line and to the north of the site entrance completed during dewatering of the fines ponds and prior to the construction of the new access track.
	Vegetation is retained.
	Low evidence of native vegetation disturbance surrounding the bund walls at the corner of Old Northern Road and Roberts Road.
<i>Fauna Monitoring</i>	Weeds, pests and feral animals are to be controlled.
	Weeds, pests and feral animals are to be controlled.
	Connectivity between current and future rehabilitated areas are established adjacent to existing and future areas of vegetation. Patches are not to be separated by more than 10 metres.
	Evidence of varying sized rocks between 20mm and greater than 200mm spread over rehabilitated areas.
	Evidence of logs and other fallen timber spread over rehabilitated areas.
	Ground dwelling fauna species of similar diversity to adjacent areas of similar habitat.
	On completion of the rehabilitation, a suitably qualified ecologist has determined the requirement on whether nest boxes are required. If nest boxed required to be installed a nest box management plan has been prepared.

2.4 SURVEY LIMITATIONS

The survey was conducted within a short timeframe during spring. Therefore some plant species may not have been identified due to the survey being performed when not in flower, or when dormant. It is noted that some flora species are seasonal, and may not have been visible at the time of the surveys.

The survey limitations have been addressed through:

- consideration of flora and fauna species known to occur in the locality (including number of records from BioNet);
- consideration of habitat suitability present within the study areas and connectivity to other areas of habitat in the local landscape;
- consideration of past and current weather conditions;
- A conservative approach in assuming the presence of a species that could potentially be present in the study areas.

Where the study area contains potential habitat for threatened fauna species known to occur in the locality, and where survey areas support a likelihood of occurrence, it has been assumed on a conservative approach that such species may occur in the study area.

3 RESULTS

Results from the field surveys conducted over October 2022 have been separated into three distinct areas to enable quantification of condition for each specific location and its monitoring objectives.

3.1 REMNANT NATIVE VEGETATION

The remnant native vegetation is a disturbed patch of native dominant species located in the north eastern corner of the property. The condition of the remnant area can be further divided into two separate areas as determined by disturbance level and the current soil profile available for flora species.

3.1.1 Immediately north of Roberts Road site entry gate

The remnant native vegetation within this area has a mature canopy of Eucalyptus and Angophora species. Lower strata are present including midstorey canopy, shrubs and ground cover. The exclusion of livestock grazing within this area has resulted in an increase of native ground cover species which over time will contribute to a much richer biodiversity value.

Biodiversity functional attributes such as size class of canopy species, litter cover, fallen timber and natural regeneration of species occurring is present within the area. Such attributes are likely to increase over time providing disturbance remains excluded within the area.



Figure 1. Remnant vegetation located immediately north of Roberts Road site entry gate Oct 2022

3.1.2 North eastern corner

The remnant vegetation within the area of the far north eastern corner of the site has undergone past disturbance which has left the canopy broken. Eucalyptus and Angophora species are recovering throughout much of the area however the mature specimens are spaced apart providing little in canopy protection to the stratum below. The shrub stratum in this area is dominant and in some areas almost impenetrable. In other areas the shrub stratum is sparse and bare ground occurs.

In severely disturbed areas species from the following genus are thriving in the harsh conditions:

- Acacia
- Allocasuarina
- Daviesia
- Dillwynia
- Hakea

Leaf litter is abundant throughout most of this area however fallen timber and size class of canopy species is limited.



Figure 2. Remnant vegetation located in the north eastern corner adjacent to Roberts Road Oct 2022

3.2 AGRICULTURAL LAND

3.2.1 Roberts Road Boundary

Exotic grasses dominate the agricultural land along Roberts Road. Some native species are present, particularly along the large bund wall which provides protection from the hot westerly sun, including Three-awned Speargrass *Aristida vagans*, Slender Rat's Tail Grass *Sporobolus creber* and Weeping Grass *Microlaena stipoides*. Agricultural weeds occur within the area although they are not considered to be dominant within the landscape. One Weed of National Significance (WoNS) was identified, Fireweed *Senecio madagascariensis*. However, due to no grazing pressure on grass over the past 24 month period, the Fireweed density has continued to decline due to being outcompeted by thick grass growth.

The native species which have been planted on a bund wall bordering Roberts Road and Old Northern Road are growing well. Almost all of these species have reached reproductive maturity.



Figure 3. Bund wall adjacent to Roberts Road.

3.2.2 Old Northern Road Boundary

This area of agricultural land is dominated by exotic grass species suitable for livestock grazing. Some agricultural weed species occur although they do not dominate the landscape. A WoNS species, Fireweed *Senecio madagascariensis*, was observed in low density within this area. The Common Eastern Toadlet *Crinia signifera* was heard calling from the large dam adjacent to Old Northern Road along the western boundary. Several Eastern Snake-necked Tortoise's *Chelodina longicollis* were observed foraging within the large dam while a Red-bellied Black Snake *Pseudechis porphyriacus* was commonly observed sunbaking along the edge of the same dam during the reporting period.



Figure 4. Agricultural land with grassed bund wall adjacent to Old Northern Road

3.2.3 North western corner

A plant nursery is established in the far north western corner of the site. The nursery makes use of water in the farm dams located on site. The agricultural land directly to the east of the nursery site is dominated by exotic grass species suitable for livestock grazing. One WoNS was identified in low density in this location, Fireweed *Senecio madagascariensis*.



Figure 5. Agricultural land adjacent to the plant nursery on Old Northern Road

3.3 PLANTED NATIVE VEGETATION

3.3.1 North of Roberts Road entrance gate

Bottlebrush *Callistemon* species have been planted along the eastern boundary of the property adjacent to the existing native vegetation. These shrubs are well established and provide a screen to Roberts Road. The shrubs provide habitat for small birds and food resources for a range of mammals, birds and invertebrate.

Weeds occur just beyond the staff car park in the grassy area adjacent to the remnant native vegetation. It would benefit the site for the WoNS which occur in this location to be controlled to minimise the risk of spread into the native vegetation. WoNS which occur in this location include Fireweed, Blackberry, Lantana and Bridal Creeper.



Figure 6. Bund wall immediately north of Roberts Road site entrance

3.3.2 Old Northern Road

The southeastern corner and southern boundary of the site has bund walls with planted native trees and shrubs. The trees along Old Northern Road have required pruning due to their close proximity to electrical power lines. As a result some of the trees have perished. The remaining plants appear to be growing well despite the pruning. The bund walls have good coverage of native vegetation with reproduction maturity demonstrated by most species during this monitoring period. The bundwalls along Old Northern Road are within the agricultural land and therefore are moderately covered in suitable grass species for grazing. Some native grass species also occur including Three-awned Speargrass and Weeping Grass.



Figure 7. Planted native vegetation along Old Northern Road

3.3.3 Northern Boundary

A variety of Bottlebrush *Callistemon* species have been planted in two locations along the northern boundary of the property. Exclusion fencing was previously undertaken to exclude grazing stock however the fencing has been removed since stock have not been kept on the property for the past two years. There are two WoNS species present along the fence line of the neighboring property, Lantana *Lantana camara* and Blackberry *Rubus fruticosus sp. aggregate* which have been under a monthly management program for the past twelve months. Significant death of both species has been noted therefore a reduction of intensity for the management schedule is justified. Quarterly to bi-annual treatment and monitoring should be sufficient.



Figure 8. Effective treatment of Lantana on the northern bund wall



Figure 9. Planted native vegetation along northern property boundary

3.4 THREATENED FLORA

A single threatened flora species was previously identified within the property boundary. During the site survey in October 2022 seven *Acacia bynoeana* individuals were located and identified onsite within the verge of the remnant native vegetation area and the sand quarry operational area. Plants varied in size from approximately 50mm – 200mm high, 50mm - 400mm in diameter. Six plants had multi-stems which were all healthy and had ample foliage and seed pod indicating the plants had reached reproductive maturity. The seventh plant was a small single stemmed seedling. Three of these plants appeared to be new recruits while four were plants identified in the previous reporting period. It would seem that in this particular location, perhaps due to the extreme environmental conditions of the site, this species occurs as a bi-annual rather than a permanent perennial. A new recruit has appeared in the location of the original plant which has had no living specimen in the immediate location for the previous two monitoring periods. This new recruit is likely to have appeared from soil seedbank.

NSW OEEES plant profile describe the habitat for the *Acacia bynoeana* as:

- Occurs in heath or dry sclerophyll forest on sandy soils;
- Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches; and
- Associated overstorey species include Red Bloodwood, Scribbly Gum, Parramatta Red Gum, Saw Banksia and Narrow-leaved Apple.

The location in which these plants occurs is a spoil mound pushed up from the silt pond adjacent. There is no canopy nearby which can be associated with the habitat.

No other threatened flora species were identified onsite.



Figure 10. *Acacia bynoeana* identified and located onsite with plentiful seed pod both fresh and spent



Figure 11. Typical habitat where *Acacia bynoeana* has been identified and located onsite

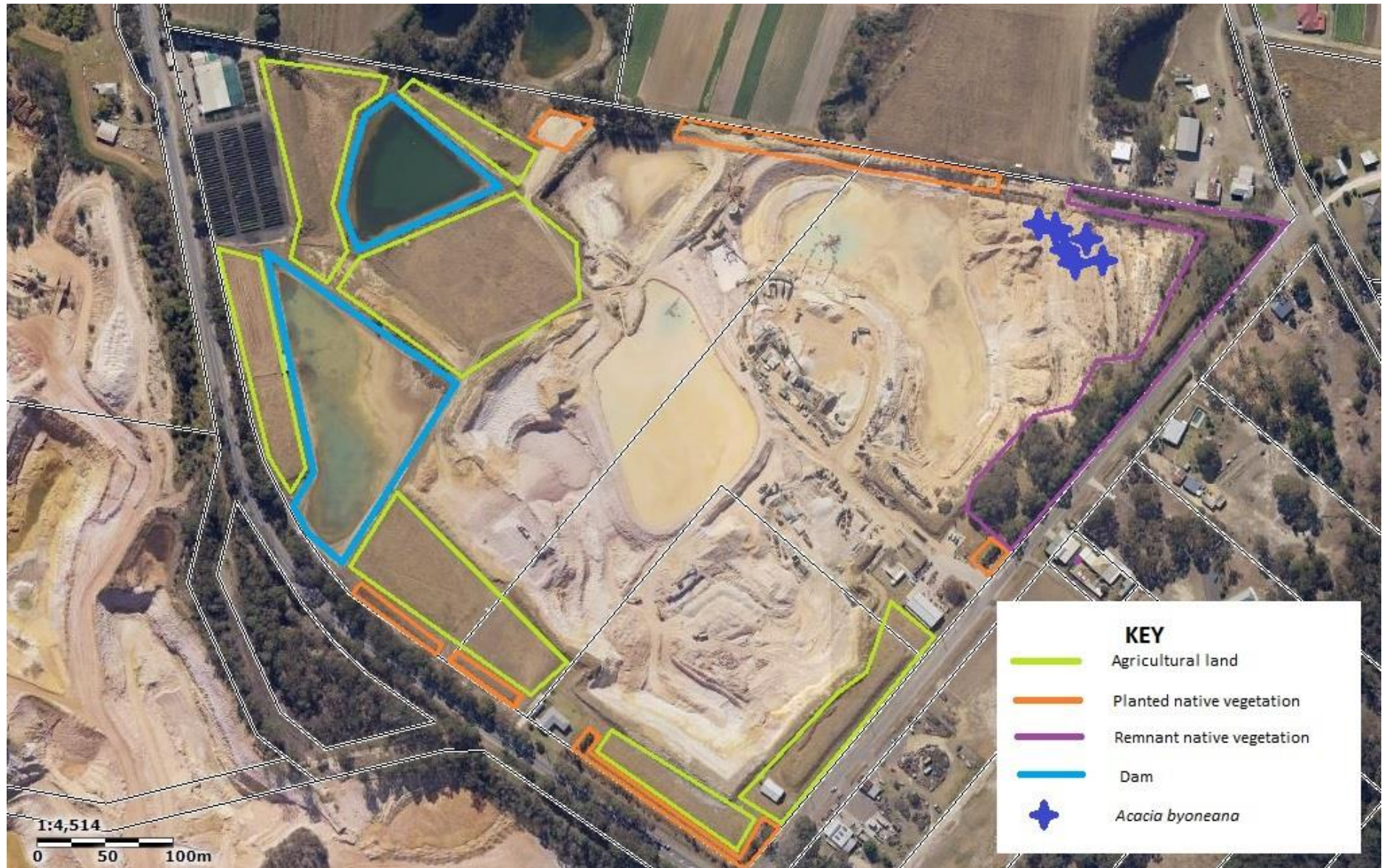


Figure 12. Location of vegetation zones within the Hodgson Quarries Roberts Road site

3.5 NATIVE FAUNA

There was no dedicated native fauna survey undertaken for this report. One threatened fauna species has been previously identified within the property via incidental sightings.

During the botanical survey in October 2022, and throughout the reporting period, opportunistic sightings of native fauna were recorded. In total twenty native species were recorded onsite. One threatened fauna species was identified onsite being the Glossy Black Cockatoo. These birds were observed feeding in the *Allocasuarina littoralis* located on the northern boundary bund wall within the remnant native vegetation. These birds appear to be repeat local visitors as they have been observed onsite over the past three reporting periods. A complete list of fauna observed during the monitoring period can be found in Appendix C.

Overall the condition of habitat for native fauna species within the property is considered to be low in its current state. The remnant native vegetation areas currently have the most habitat value to support a range of native fauna species however this area is small and not likely to be large enough to support any viable population. Connectivity to native vegetation in all directions is broken due to road easements or surrounding agricultural land use.

4 DISCUSSION AND RECOMMENDATIONS

This is the fifth Annual Biodiversity Monitoring Report produced for Hodgson Quarries Roberts Road Maroota. Rehabilitation work is still in the early stages and will increase with both intensity and measurable criteria in the years that follow, particularly as the quarry operations come to an end.

The site does appear to have shown some tolerance to the extreme wet conditions that the two year cycle of La Nina has brought to the region. Evidence of some die back, particularly of large shrubs is apparent although juvenile growth is reasonably prolific. Forbs and ferns have thrived in the wet conditions and have increased in diversity and density since the previous reporting period. Native grasses have continued to increase in density. Particularly in bare patches where soils are too shallow for shrubs and canopy species to become established.

Natural native regeneration from the soil seed bank is occurring throughout much of the remnant native vegetation areas. Fencing to exclude livestock has most likely assisted in the ability for natural regeneration to occur undisturbed over time.

Weeds are present throughout the property with WoNS occurring in low density within the agricultural areas, within the grassy area adjacent to the staff car park and within the planted native vegetation along the northern boundary bund wall. High Threat Weeds (HTW), as determined by the DPIE BAM, are also present although most of these weeds can be found within the agricultural land area. It is highly recommended continued management of these weeds to maintain control of their growth and spread is undertaken on a quarterly to bi-annual basis. Recommended weed control methods suitable for use throughout the year is supplied in Appendix D.

There is an intention to undertake some infill native planting over time on the bund wall along the southern end of Roberts Road and the eastern bund wall facing Old Northern Road. Due to overhead powerlines in the immediate area, low growing native shrub species suitable for planting in these locations is highly recommended.

Overall the rehabilitation and biodiversity of the site is within the expectations of the life of the quarry. Continued weed management would benefit the site, particularly the WoNS.

5 LIMITATIONS AND ASSUMPTIONS

This study was limited by the timing and frequency of the survey. There may be flora and/or fauna species present at the site that were not recorded due to their seasonal, territorial or cryptic nature.

It can never be proven that threatened species have not, do not or will not use the site as habitat. The conclusions drawn in this report are a result of testing, observation and experience.

This report describes the habitat and vegetation of the site at the time of the field survey. Vegetation and habitat will change over time and therefore the findings of this report are only relevant for the current proposal and for the duration of the application.

6 QUALIFICATIONS AND EXPERIENCE OF THE AUTHOR AND FIELD ECOLOGIST

The Author and Field Ecologist, Melissa Mass, has formal qualifications including a Bachelor of Applied Science (B. App. Sc.), majoring in Ecology, and a Certificate 3 in Horticulture. Her current Scientific Licence number issued from the NSW OEH is SL101441 with expiry date 31st Oct 2023. Furthermore an Animal Research Authority issued by the NSW Animal Care and Ethics Committee is current to undertake general survey work throughout NSW with expiry date 23rd Mar 2023. Melissa is an accredited Biodiversity Assessor conforming to the requirements as imposed by DPIE with Accreditation number being BAAS18053.

Melissa has been working as an Ecologist for 14 years. Her work has included targeted threatened species assessment and management, reviews of environmental factors, bush regeneration, environmental impact assessments, and environmental survey and monitoring.

Melissa has a strong focus on threatened species ecology and has actively contributed to the Long-nosed Potoroo National Recovery Plan.

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8 APPENDIX

Appendix A – Native Flora identified and recorded as present onsite October 2022

Scientific Name	Common Name	Status
<i>Acacia bynoeana</i>	Bynoe's Wattle	BC Act – Endangered EPBC Act – Vulnerable
<i>Acacia linifolia</i>	White Wattle	
<i>Acacia myrtifolia</i>	Red-stemmed Wattle	
<i>Acacia parramattensis</i>	Parramatta Wattle	
<i>Acacia suaveolens</i>	Sweet Wattle	
<i>Acacia ulicifolia</i>	Prickly Moses	
<i>Allocasuarina littoralis</i>	Black She-oak	
<i>Allocasuarina paludosa</i>	Swamp She-oak	
<i>Allocasuarina torulosa</i>	Forest Oak	
<i>Amyema congener</i>	Variable Mistletoe	
<i>Angophora bakeri</i>	Narrow Leaved Apple	
<i>Angophora costata</i>	Smooth Barked Apple	
<i>Anisopogon avenaceus</i>	Oat Speargrass	
<i>Aristida vagans</i>	Three-awn Speargrass	
<i>Aristida warburgii</i>	Fine leafed wire grass	
<i>Blechnum cartilagineum</i>	Gristle Fern	
<i>Bossiaea heterophylla</i>	Variable Bossiaea	
<i>Breynia oblongifolia</i>	Coffee Bush	
<i>Callistemon citrinus</i>	Crimson Bottlebrush	
<i>Calochilus paludosus</i>	Red Beard Orchid	
<i>Cassytha pubescens</i>	Devils Twine	
<i>Cheilanthes sieberi</i>	Mulga Fern	
<i>Clematis aristata</i>	Old Mans Beard	
<i>Cyathea australis</i>	Rough Tree Fern	
<i>Dampiera stricta</i>	Blue Dampiera	
<i>Daviesia ulicifolia</i>	Gorse Bitter Pea	
<i>Dianella caerulea</i>	Blue Flax-lily	
<i>Dichelachne micrantha</i>	Shorthair Plumegrass	
<i>Dichondra repens</i>	Kidney Weed	
<i>Dillwynia retorta</i>	Heathy Parrot Pea	
<i>Dodonaea triquetra</i>	Large Leaf Hop Bush	
<i>Drosera auriculata</i>	Sundew	
<i>Drosera peltata</i>	Sundew	
<i>Drosera spathulata</i>	Spoon Leaved Sundew	
<i>Echinopogon ovatus</i>	Forest Hedgehog Grass	
<i>Einadia hastata</i>	Berry Saltbush	
<i>Entolasia marginata</i>	Bordered Panic	
<i>Eucalyptus acmenoides</i>	White Mahogany	
<i>Eucalyptus eugeniodides</i>	Thin Leaved Stringybark	
<i>Eucalyptus haemastoma</i>	Scribbly Gum	
<i>Eucalyptus notabilis</i>	Mountain Mahogany	
<i>Eucalyptus tereticornis</i>	Forest Red Gum	

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<i>Eucalyptus umbra</i>	Broad-leaved White Mahogany	
<i>Euchiton sphaericus</i>	Star Cudweed	
<i>Geranium homeanum</i>	Cranesbill	
<i>Gleichenia dicarpa</i>	Pouched Coral Fern	
<i>Glycine clandestina</i>	Twining Glycine	
<i>Gonocarpus teucrioides</i>	Raspwort	
<i>Goodenia bellidifolia</i>	Daisy-leaved Goodenia	
<i>Grevillea buxifolia</i>	Grey Spider Flower	
<i>Grevillea speciosa</i>	Red Spider Flower	
<i>Hakea sericea</i>	Needlebush	
<i>Hardenbergia violacea</i>	False Sarsaparilla	
<i>Juncus usitatus</i>	Common Rush	
<i>Kunzea ambigua</i>	Tick Bush	
<i>Leptospermum polygalifolium</i>	Tantoon	
<i>Lindsaea microphylla</i>	Lacy Wedge Fern	
<i>Lomandra longifolia</i>	Spiny head Mat-rush	
<i>Lomandra multiflora</i>	Many-flowered Mat-rush	
<i>Microlaena stipoides</i>	Weeping grass	
<i>Microtis unifolia</i>	Onion Orchid	
<i>Mitrasacme polymorpha</i>	Varied Mitrewort	
<i>Notelaea longifolia</i>	Large Mock Olive	
<i>Oxalis perennans</i>	Native Sorrel	
<i>Ozothamnus diosmifolius</i>	Rice Flower	
<i>Parsonsia straminea</i>	Common Silkpod	
<i>Patersonia sericea</i>	Silky Purple Flag	
<i>Persoonia lanceolate</i>	Lance Leaf Geebung	
<i>Petrophile pulchella</i>	Conesticks	
<i>Phyllota phyllicoides</i>	Heath Phyllota	
<i>Pittosporum undulatum</i>	Sweet pittosporum	
<i>Pomax umbellata</i>	Pomax	
<i>Pratia purpurascens</i>	White Root	
<i>Pteridium esculentum</i>	Bracken Fern	
<i>Scaevola ramosissima</i>	Purple Fan Flower	
<i>Senecio linearifolius</i>	Fireweed Groundsel	
<i>Sporobolus creber</i>	Slender Rat's Tail Grass	
<i>Stylidium lineare</i>	Narrow-leaved Triggerplant	
<i>Syncarpia glomulifera</i>	Turpentine	
<i>Themeda triandra</i>	Kangaroo Grass	
<i>Viola hederacea</i>	Ivy Leaved Violet	
<i>Xanthorrhoea media</i>	Grass Tree	
<i>Xanthosia tridentata</i>	Rock Xanthosia	

Appendix B – Exotic flora identified and recorded as present onsite October 2022

Scientific Name	Common Name	Status
<i>Ageratina adenophora</i>	Crofton Weed	High Threat Weed (HTW)
<i>Anagallis arvensis</i>	Red Pimpernel	
<i>Andropogon virginicus</i>	Whisky Grass	HTW
<i>Araujia sericifera</i>	Moth Vine	HTW
<i>Asparagus asparagoides</i>	Bridal Creeper	WoNS, HTW
<i>Bidens pilosa</i>	Cobblers pegs	HTW
<i>Briza minor</i>	Shivery Grass	
<i>Cestrum parqui</i>	Green Cestrum	HTW
<i>Chloris gayana</i>	Rhodes Grass	HTW
<i>Cirsium vulgare</i>	Spear Thistle	
<i>Conyza bonariensis</i>	Flax-leaf fleabane	
<i>Cynodon dactylon</i>	Couch Grass	
<i>Digitaria sanguinalis</i>	Crabgrass	
<i>Ehrharta erecta</i>	Panic Veldtgrass	HTW
<i>Eragrostis curvula</i>	African Lovegrass	HTW
<i>Gnaphalium coarctatum</i>	Cudweed	
<i>Hypochaeris radicata</i>	Catsear	
<i>Lantana camara</i>	Lantana	WoNS, HTW
<i>Ligustrum sinense</i>	Small-leaf Privet	HTW
<i>Oxalis corniculata</i>	Creeping Woodsorrel	
<i>Paspalum dilatatum</i>	Paspalum	HTW
<i>Paspalum urvillei</i>	Vasey's Grass	
<i>Pennisetum clandestinum</i>	Kikuyu Grass	
<i>Phalaris aquatica</i>	Phalaris	
<i>Phytolacca octandra</i>	Inkweed	
<i>Plantago lanceolata</i>	Lambs Tongues	
<i>Rubus fruticosus sp. agg.</i>	Blackberry	WoNS, HTW
<i>Senecio madagascariensis</i>	Fireweed	WoNS, HTW
<i>Setaria parviflora</i>	Slender Pigeon Grass	
<i>Sida rhombifolia</i>	Paddy's Lucerne	
<i>Solanum mauritianum</i>	Wild Tobacco Bush	
<i>Solanum nigrum</i>	Black Nightshade	
<i>Solanum sisymbriifolium</i>	Sticky Nightshade	
<i>Sonchus oleraceus</i>	Common Sow Thistle	
<i>Trifolium repens</i>	White Clover	
<i>Verbena bonariensis</i>	Purpletop	
<i>Vicia sativa</i>	Common Vetch	

Appendix C – Fauna identified and recorded as present onsite 2022

Scientific Name	Common Name	Observation Type
Bird		
<i>Anthochaera chrysoptera</i>	Little Wattlebird	Observed
<i>Colluricincla harmonica</i>	Grey Shrike-thrush	Observed
<i>Calyptorhynchus lathami</i>	Glossy Black Cockatoo	Observed
<i>Cracticus tibicen</i>	Australian Magpie	Observed
<i>Dacelo novaeguineae</i>	Laughing Kookaburra	Observed
<i>Eopsaltria australis</i>	Eastern Yellow Robin	Observed
<i>Falco cenchroides</i>	Nankeen Kestrel	Observed
<i>Malurus cyaneus</i>	Superb Fairy Wren	Observed
* <i>Manorina melanocephala</i>	Noisy Minor	Observed
<i>Ocyphaps lophotes</i>	Crested Pigeon	Observed
<i>Phaps chalcoptera</i>	Common Bronzewing	Observed
<i>Platyercus eximius</i>	Eastern Rosella	Observed (nesting in fencepost)
<i>Sericornis frontalis</i>	White-browed scrubwren	Observed
Mammal		
* <i>Oryctolagus cuniculus</i>	European Rabbit	Scat and digs
<i>Trichosurus vulpecula</i>	Brush-tailed Possum	Scat
* <i>Vulpes vulpes</i>	European Red Fox	Scat/print
<i>Wallabia bicolor</i>	Swamp Wallaby	Scat
Reptile		
<i>Chelodina longicollis</i>	Snake-necked Turtle	Observed
<i>Intellagama lesueurii</i>	Water Dragon	Observed
<i>Lampropholis guichenoti</i>	Common Skink	Observed
<i>Pseudechis porphyriacus</i>	Red-bellied Black Snake	Observed
Amphibian		
<i>Crinia signifera</i>	Common Eastern Toadlet	Heard call
<i>Litoria peronii</i>	Peron's Tree Frog	Observed

*Pest species

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Appendix D – Recommended weed control for each month of the year (WoNS and HTW only)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
African Lovegrass	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Blackberry	Herbicide	Herbicide	Herbicide						Herbicide	Herbicide	Herbicide	Herbicide
Bridal Creeper	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal
Cobblers Pegs	Hand removal	Hand removal	Hand removal	Hand removal					Herbicide	Herbicide	Herbicide	Hand removal
Crofton Weed	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Fireweed	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal
Lantana	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Paspalum	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide			Herbicide	Herbicide	Herbicide	Herbicide
Rhodes Grass	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide
Whiskey Grass	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Herbicide	Herbicide	Herbicide	Hand removal

Herbicide – Foliar spray with an appropriate product as per the instructions on the label. Foliar spray should be carried out during active growing season.
 Hand removal – Necessary when targeted species have reached flowering maturity. Entire plant can be removed or flowering heads may be cut. Removed material should be immediately bagged to prevent spread of seed and appropriately disposed of.

This table should be considered a guide for appropriate treatment during different months of the year. It does not indicate a specified work schedule.