



26 August 2019

Albury City Council
PO Box 323
ALBURY NSW 2640

Attention: Terri O'Brien, Senior Town Planner

Dear Terri,

**Subject: Response to Second Further Information Request
Development Application 10.2017.35576.1 – Extractive Industry ('Rockwood Quarry')
and Crushing of Recycled Concrete
208 Winchester Lane, Table Top**

Further to Council's second request seeking further information regarding the proposed extractive industry at 'Rockwood Quarry', please find enclosed:

- Environmental Impact Statement, Volume 1: Main Report (amended August 2019);
- Attachment B – Proposed Plans (amended, August 2019);
- Attachment E – Aboriginal Cultural Heritage Assessment Report, Biosis (amended 19 August 2019); and
- Attachment L – Quarry Closure and Rehabilitation Plan (amended, August 2019).

Please note that all other attachments and subconsultant reports that were previously submitted remain unchanged as a result of the revised EIS documentation. Due to the size of the documents, Attachment E has been bound and provided as a separate standalone document to be included as part of this submission package

The amended information has been provided in response to the items outlined in Council's further information request, as well as matters raised by the NSW Office of Environment and Heritage in their letter dated 8 May 2019. The following provides a brief summary and response to the additional information that has been provided:

1. Quarry Closure and Rehabilitation Plan

In response to council's request, the Quarry Closure and Rehabilitation Plan (QCRP) has been amended to provide additional information and further clarification in relation to matters regarding rehabilitation. More specifically, the QCRP has been updated to include the following additional information:

- Resource assessment confirming amount of in-situ resource materials available on-site as part of the proposed quarrying operation, as well as further details regarding fill materials and their sources to achieve proposed finished surface levels and void slope stability;
- Further details regarding proposed staging of extraction and rehabilitation works, including the preparation of an indicative development schedule;

- Details regarding the risk management framework and work, health and safety requirements;
- Amendments to the plan to ensure consistent between the QCRP and the main EIS report and associated technical reports;
- Further details regarding water surface controls, closure liability and financial details, as well as project monitoring and reporting; and
- Preparation of additional plans, including a Future Land Use Plan and Site Rehabilitation Plan.

2. Aboriginal Cultural Heritage

Matters regarding Aboriginal Cultural Heritage have been further assessed and the Aboriginal Cultural Heritage Assessment Report (ACHAR) has been updated to include reference to AHIMS site 55-6-0064, including any potential impacts on this site.

In summary, the revised ACHAR concluded:

No evidence of the scarred tree (AHIMS 55-6-0064) identified during the initial AHIMS search (Client Service ID: 361646) was present within or immediately adjacent the study area. This may be due to discrepancies in mapping of the scarred tree (AHIMS 55-6-0064) which may be physically located some distance outside the current study area. It is, however, more likely that the tree was subject to destruction and no longer exists. Aboriginal representatives' onsite could provide no further information regarding the scarred tree. Further discussions via telephone in June and August of 2019, confirmed that no culturally modified tree was observed within or immediately adjacent the southern boundary of the study area. An Aboriginal Site Impact Recording Form (ASIRF) was submitted to AHIMS and approved on 22 July 2019, altering the status of mungabarina-mm1 (AHIMS site 55-6-0064) from an existing Aboriginal site to having been destroyed.

3. Biodiversity

Whilst requests for additional biodiversity assessments, including the preparation of a Biodiversity Offset Management Plan (BOMP) are acknowledged, it is noted that the proposed works are not subject to the provisions of the *Biodiversity Conservation Act 2016* (BC Act) as the development is subject to savings and transitional provisions under previous acts and legislation.

More specifically, the Secretary's Environmental Assessment Requirements (SEAR's) were issued on 5 September 2016, which is before the date that the BC Act was introduced. Similarly, the EIS was submitted in November 2017, which was also before the date that this legislation was introduced.

Accordingly, the provisions of the BC Act do not apply in this instance.

Notwithstanding the above, the development is considered to be generally consistent with the purposes of the BC Act, which seeks to maintain a healthy, productive and resilient environment. This has been achieved as follows:

- the size of the development footprint has been reduced to avoid areas of environmental sensitivity and tree loss;

- the development proposes to establish a biodiversity offset area of approximately 15 hectares, which will provide a better environmental connection between two large patches of environmental zoned land in accordance with the requirements of a Vegetation Management Plan (VMP);
- a biodiversity assessment of the proposed area of works and a targeted site survey of the Pink-tailed worm lizard have been prepared, which confirms that the works will not have a long-term or adverse environmental impact; and
- the project has been referred to the Federal Minister for the Environment, who upon review considered the works to not be classified as a Controlled Action.

If you require any further information, please do not hesitate to contact the undersigned directly on 6021 0662.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Matt Johnson', with a stylized flourish at the end.

Matt Johnson
Senior Planner

Encl

habitat planning

Environmental Impact Statement

**Extractive Industry ('Rockwood Quarry') and Crushing
of Recycled Concrete**

208 Winchester Lane, Table Top

Volume 1: Main Report

August 2019



**Prepared for**

AP Delaney & Co Pty Ltd

Habitat Planning

Suite 1, 622 Macauley Street

ALBURY NSW 2640

p. 02 6021 0662 f. 02 6021 0663

habitat@habitatplanning.com.au

habitatplanning.com.au

Document Control

Version	Purpose	Author	Reviewed	Date
A	Draft, Version 1	MJ	RD	10/10/2017
B	Draft, Version 2	MJ	RD	8/11/2017
C	Lodgement	MJ	MJ	16/11/2017
D	Post Lodgement Revision	MJ	MJ	05/10/2018
E	Post Lodgement, Version 2	MJ	MJ	08/04/2019



The information contained in this document produced by Habitat Planning is solely for the use of the person or organisation for which it has been prepared and Habitat Planning undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.

All rights reserved. No section or element of this document may be removed from this document, reproduced, electronically stored or transmitted in any form without the written permission of Habitat Planning.

Contents

Declaration

Executive Summary

1.	Introduction	1
1.1	Project Summary	1
1.2	Background	2
1.3	Secretary's Environmental Assessment Requirements (SEARs)	4
1.4	Project Team	7
1.5	Structure of EIS	8
1.6	Project Objectives	8
1.7	Analysis of Alternatives	9
1.8	Justification of Development	9
2.	Site & Context Description	11
2.1	Subject Land	11
2.2	Existing Quarry & Associated Activities	14
2.3	Surrounding Context	25
2.4	Site & Surrounding Context Photographs	37
3.	Description of Proposal	42
3.1	Project Summary	42
3.2	Description of Works	43
3.3	Area of Extraction	44
3.4	Quantities of Materials	45
3.5	Hours of Operation & Workforce	45
3.6	Equipment	46
3.7	Stockpiles	46
3.8	Development Schedule	47
3.9	Blasting and Crushing of Recycled Concrete	49
3.10	Rehabilitation	50
4.	Statutory Planning Instruments	54
4.1	Commonwealth Legislation	54
4.2	State Legislation	58
4.3	State Environmental Planning Policies	63
4.4	Albury Local Environmental Plan 2010	69
4.5	Albury Development Control Plan 2010	75
4.6	Guidelines	79
4.7	Integrated Development & Approvals Required	88
5.	Strategic Plans & Policies	89
5.1	State	89
5.2	Local	90
6.	Consultation	94
6.1	Public Authorities	94
6.2	Community	98

6.3	Identification of Key Stakeholder Issues.....	99
7.	Environmental Issues	101
7.1	Biodiversity	101
7.2	Water	105
7.3	Noise, Blasting & Vibrations	111
7.4	Heritage.....	120
7.5	Erosion & Sediment Control.....	126
7.6	Soil & Land Resources	129
7.7	Air Quality	141
7.8	Waste Management and Disposal	147
7.9	Transport & Access.....	150
7.10	Social & Economic Impact	159
7.11	Visual Amenity	161
7.12	Surrounding Land Uses.....	163
7.13	Work, Health and Safety.....	165
7.14	Utilities & Services	168
7.15	Rehabilitation & Future Land Use.....	170
8.	Summary of Mitigation and Monitoring Measures	179
9.	Conclusion	185

Attachments

- A. Secretary's Environmental Assessment Requirements (SEARs) dated 5 September 2016 and correspondence received from the NSW Department of Planning & Environment;
- B. Proposed Plans;
- C. Copy of Previously Approved Development Consents;
- D. Environment Protection Licence No. 10069 – "Rockwood" Winchester Lane, Table Top
- E. Aboriginal Cultural Heritage Assessment Reports, *Biosis*
- F. Traffic Impact Assessment, *Peter Meredith Consulting*
- G. Noise Impact Assessment, *Ray Walsh Acoustics, Noise and Sound*
- H. Air Quality Impact Assessment, *GHD*
- I. Biodiversity Assessment and Vegetation Management Plan, *Biosis*
- J. Survey & Habitat Assessment for Pink-tailed Worm-lizard, *Eco-tone Wildlife & Habitat Assessments*
- K. EPBC Referral and Approval;
- L. Quarry Closure and Rehabilitation Plan;
- M. Hydro-geological Assessment & Borehole Logs, *GHD*
- N. Australian Newsprint Mills Waste Water Management Plan, *NSW Land and Water Conservation*
- O. Groundwater Monitoring Results – Biosolid Waste; *Nolan-ITU*
- P. Product Material Testing Results;
- Q. Copy of Neighbour Notification Letter and Responses to Community Consultation

List of tables

Table 1: Project Summary

Table 2: Site History

Table 3: Secretary's Environmental Assessment Requirements Compliance Table

Table 4: EIS Structure

Table 5: Annual Temperature, Albury

Table 6: Annual Rainfall, Albury

Table 7: Annual Wind Speeds, Albury

Table 8: Summary of EPA Licence Requirements

Table 9: Rockwood Quarry – Annual Extraction Rates

Table 10: Rockwood Quarry – Blasting Records

Table 11: Section 79C(1) – Matters for Consideration

Table 12: Extractive Industries SEPP, Part 3: Development Applications – Matters for Consideration

Table 13: Summary of Key Stakeholder Issues

Table 14: Catchment Context

Table 15: Receptor Locations

Table 16: Amenity Criteria for Noise

Table 17: $L_{eq15\text{ minute}}$ Sound Power Levels – Mechanical Plant and Equipment

Table 18: Predicted L_{eq} Noise Levels – All Residential Receptors

Table 19: Measured Vibration and Overpressure Levels

Table 20: Sub-base course materials

Table 21: Basecourse materials

Table 22: Summary of Extraction and Fill Rates

Table 23: Schedule of Fill Sources

Table 24: Identified sensitive receptors

Table 25: Average Daily Traffic, AM and PM Peak hour traffic volumes for Gerogery Road, June 2018

Table 26: Estimated Existing Daily Traffic and direction, AM and PM Peak hour traffic volumes for Winchester Lane

Table 27: Level of Service (Los) for capacity and operational analysis for all types of road facilities

Table 28: Closure and Rehabilitation Criteria

Table 29: Summary of Mitigation and Monitoring Measures

List of figures

Figure 1: Locality Plan within the context of the broader area

Figure 2: Locality Plan within the context of the surrounding area

Figure 3: Aerial Photograph of Subject Land

Figure 4: Site Plan (Existing)

Figure 5: Aerial Photograph of Pit 1

Figure 6: Site Plan (Existing) of Pit 1 showing existing activities

Figure 7: Aerial Photograph of Pit 3

Figure 8: Site Plan (Existing) of Pit 3 showing existing activities

Figure 9: Aerial Photograph of Pit 3 showing existing

Figure 10: Approved Quarry Expansion of Pit 3 contained in Development Consent 10.2008.28631.1

Figure 11: Approved Waste Disposal Area

Figure 12: View of existing site entrance to Winchester Lane from Gerogery Road

Figure 13: Vehicles entrance to Pit 1 as viewed from Travelling Stock Reserve

Figure 14: Example of site rehabilitation works occurring within Pit 1

Figure 15: Detention dam located to the south of Pit 1

Figure 16: View of waste disposal and detention dam located to the south west of Pit 3

Figure 17: Pit 3 extraction area looking west

Figure 18: Pit 3 expansion area looking south

Figure 19: Existing stockpiles contained within Pit 3

Figure 20: Crushing and screening plant contained within Pit 3

Figure 21: Existing detention dam located to the south of Pit 3

Figure 22: View looking south west from the subject land towards Burgess' Quarry

Figure 23: View of example Norske Skog biosolid material used in rehabilitation and filling

Figure 24: View of existing roadside regrowth vegetation located adjacent to Gerogery Road

Figure 25: View of existing Gerogery Road road embankment to cut back and battered

Figure 26: Site Plan (Proposed) showing the location of quarry pits and activities

Figure 27: Proposed Staging Plan – Pit 3

Figure 28: Proposed road embankment and tree removal works

Figure 29: Proposed expansion area and vegetation classification (original)

Figure 30: Proposed expansion area and vegetation classification (revised)

Figure 31: Proposed vegetation offset area

Figure 32: Zoning of Subject Land

Figure 33: Extract of Albury Bushfire Prone Land Map

Figure 34: Potential Land Use Conflicts in Table Top

Figure 35: Albury Industrial Hub Master Plan

Figure 36: Albury Catchment Areas

Figure 37: Location of Existing Storage dams on-site

Figure 38: Sensitive Noise Receptors

Figure 39: Intangible Aboriginal Cultural heritage located in the study area

Figure 40: Potential Archaeological Deposit (PAD) sites and Test Excavation Results

Figure 41: Summary of Stop Work Provisions following the discovery of human remains

Figure 42: Regional Geology Plan indicating the subject land

Figure 43: Sensitive Receptors Map

Figure 44: Existing and estimated AM and PM peak traffic flows at the intersection of Gerogery Road and Winchester Lane

Figure 45: Future 2037 AM and PM peak traffic flows at the intersection of Gerogery Road and Winchester Lane

Figure 46: Gerogery Road north bound at 287m from Winchester Lane

Figure 47: Rehabilitation Site Works Plans

Figure 48: Rockwood 3 – Proposed Rehabilitation Staging

Figure 49: Future Land Use Plan

Acronyms

ACHAR	Aboriginal Cultural Heritage Assessment Report
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
ANZECC	Australian and New Zealand Environment Council, Canberra
APZ	Asset Protection Zone
DCP	Development Control Plan
DPE	NSW Department of Planning & Environment
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EP&A Act	NSW Environmental Planning & Assessment Act 1979

EP&A Regulation	Environmental Planning & Assessment Regulation 2000
EPBC Act	NSW Environment Protection and Biodiversity Conservation Act 1999
LEP	Local Environmental Plan
LGA	Local Government Area
NES	National Environmental Significance
NIA	Noise Impact Assessment
OEH	NSW Office of Environment & Heritage
PAD	Potential Archaeological Deposit
PBP	Planning for Bushfire Protection
POEO Act	Protection of the Environment Operations Act 1997
RAPs	Registered Aboriginal Parties
RMS	NSW Roads & Maritime Services
SEPP	State Environmental Planning Policy
TIA	Traffic Impact Assessment

Abbreviations

“the Council”	Albury City Council
“the Act”	Environmental Planning & Assessment Act 1979
“the LEP”	Albury Local Environmental Plan 2010
“the DCP”	Albury Development Control Plan 2010
“the Project”	New extractive industry and crushing of recycle concrete
“the Subject Land”	as defined in Figure 2

Declaration

Submission of Environmental Impact Statement (EIS)

prepared under Section 78A (8A) of the *Environmental Planning and Assessment Act 1979*.

EIS prepared by

name: Matt Johnson
qualifications: Bachelor, Urban & Regional Planning
address: Habitat Planning, 1/622 Macauley Street, Albury NSW 2640

Applicant

applicant name: AP Delaney & Co Pty Ltd
applicant address: 280 Kiewa Street, South Albury

land details

land to be developed: Rockwood Quarry
address: 208 Winchester Lane & Gerogery Road, Table Top
Lot No, DP, etc: Lot 2 in DP1018401 and Lot 3 in DP 233061

development application

proposed development: Extractive industry (quarry) and crushing of recycled concrete.

environmental impact statement

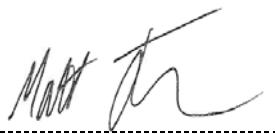
as detailed within this report.

Declaration

I declare that:

- the statement (EIS) has been prepared in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*, and
- the statement contains all available information that is relevant to the environmental assessment of the proposed development, and
- that the information contained in the statement is neither false nor misleading.

signature:



name:

Matt Johnson

date:

22 August 2019

Executive Summary

Introduction & Project Overview

This Environmental Impact Statement (EIS) supports a Designated Development application for an extractive industry, the crushing of recycled concrete and associated works at Lot 2 in DP1018401 and Lot 3 in DP233061 addressed as 208 Winchester Lane, Table Top, more commonly known as 'Rockwood Quarry'.

The proposed development involves an extractive industry, as well as the ancillary crushing of recycled concrete, which is currently occurring on the subject land. The subject application has been prepared as the current approval is due to expire on 17 September 2019. As a consequence, a new Development Application (and associated EIS) is required to be lodged and approved so as to allow quarrying activities to occur on-site.

More specifically, this application seeks approval to undertake the following:

- Approval for an extractive industry within existing approved Pits 1 and 3 for a 30-year period, inclusive of the following works:
 - Site preparation works (including identification of in-situ materials and removal and stockpiling of topsoil, ground litter and vegetation);
 - Periodic blasting of in-situ material ready for excavation;
 - Excavation of materials utilising a variety of machinery and equipment such as front-end loaders, excavators, graders and the like;
 - Processing and screening of materials;
 - Stockpiling of materials on-site ready for transport;
 - Transport and haulage of materials off-site via Winchester Lane; and
 - Rehabilitation and revegetation work to ensure a self-sustaining environment when the operation of the quarry is fully completed.
- Approval for a maximum annual extraction of crushed rock of 100,000m³ per annum to cater for the long-term needs of the quarry (Note: the existing quarry has approval for 75,000m³);
- Expansion of existing Pit 3 in a north easterly direction (12.67 hectares) consistent with a previous approval issued for the site;
- Crushing and recycling of an annual maximum of 20,000 tonnes of solid concrete waste from residential, industrial and commercial sites (Pit 3 only);
- Earth embankment/reshaping works along Gerogery Road to improve current sight lines for vehicles exiting Winchester Lane;
- Removal of 19 trees with the proposed Pit 3 area,
- Removal of 1.25 hectares of vegetation that meets the listing criteria as the Box Gum Woodlands threatened ecological community and 2.4 hectares of native vegetation (grasslands) zoned E3 Environmental Management within the proposed Pit 3 area;
- Removal and/or pruning of several trees within the adjoining Gerogery Road, road reserve (by the relevant road authority), which are currently obscuring views from this intersection; and

- Rehabilitation, revegetation and maintenance of RU2 Rural Landscape zoned land in accordance with the requirements of a Vegetation Management Plan to ensure that the proposed activities will not have an overall adverse environmental impact.

It is noted that separate approval for the transport and disposal of liquid wastes from the adjoining Norske Skog Paper Mill, which is currently undertaken on-site is not required as it is already approved under a separate approval (see development consent 147/92).

Approval Process

The EIS has been prepared and submitted to the NSW Department of Planning & Environment (DPE) pursuant to Section 78A (8A) of the *Environmental Planning & Assessment Act 1979* (EP&A Act) and Schedule 2 of the *Environmental Planning & Assessment Regulation 2000* (EP&A Regulation). The EIS has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) issued by DPE on 5 September 2016 and further advice provided by DPE on 16 March 2018, 29 March 2018 and 19 October 2018 (see **Attachment A**).

The proposal has been assessed against the relevant legislation and environmental planning instruments, as well as, having regard for industry guidelines and other publications. In addition, the matters specified in the SEARs and the requirements of other government departments and agencies have been addressed.

As the development involves an extractive industry, the application must be referred to the Southern Joint Regional Planning Panel (JRPP) for determination.

Other Approvals

Under Section 91 of the EP&A Act, a proposal is 'integrated development' if in order for it to be carried out, requires additional approval under other legislation. In this instance, the following approvals are required:

- Environment Protection License to authorise the carrying out of a scheduled activity in accordance with Section 48 of the *Protection of the Environment Operations Act 1997*, being an extractive industry that extracts, crushes, grinds or separates more than 30,000 tonnes of materials per annum.

Existing Site Conditions

The subject land has principally been used for the purposes of an extractive industry, with quarrying activities occurring on-site since the pre-1970s, including use by the former Hume Shire Council. These activities continue today with the current operator and also include the ancillary crushing of recycled concrete and the disposal of biosolid wastes from the adjoining Norske Skog Paper mill (operating under a separate approval). Other activities to occur on-site include the intermittent grazing of cattle and other livestock on those portions of the site not used for quarrying activities.

Environmental Assessment

Biodiversity

A biodiversity assessment (see **Attachment I**) was prepared by Biosis in support of the proposed activity, which assessed the current environmental conditions of the property and the likely environmental impacts of the works.

Native vegetation is still present in the landscape as large patches, isolated paddock trees and unimproved pasture on private properties and within road reserves and nature reserves in the broader landscape.

Higher quality woodland remnants occur on hilltops and rocky rises where the canopy remains relatively intact and the understorey is predominantly native. Derived grasslands occur on the slopes and valley floors where the canopy has been predominantly removed but the understorey remains native. The eastern portion of the site has been grazed extensively by cattle while the western and northern sections have been excluded from grazing, with the exception of minor native grazing by Eastern Grey Kangaroo *Macropus giganteus*. A section of the study area to the northeast of Pit 3 has been impacted by past quarrying activities and now contains predominantly introduced vegetation.

Native vegetation within the study area consists of Plant Community Type (PCT) 266: *White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion* where the canopy remains and PCT 1000: *Speargrass – Redleg Grass derived grassland on hills in the Jindera to Holbrook region*, southern NSW South Western Slopes bioregion where the canopy has been historically removed.

Plant Community Type 266 was found to meet the listing criteria as the Box Gum Woodlands TEC, listed as critically endangered under the EPBC Act. The study area was found to contain suitable habitat for Pink-tailed Worm-lizard *Aprasia parapulchella*, listed as Vulnerable under the EPBC Act, and Swift Parrot *Lathamus discolor*, listed as Critically Endangered under the EPBC Act.

Threatened flora species were considered to have a low or negligible likelihood of occurring in the study area. Sixteen bird species listed under the BC Act were recorded or predicted to occur within the study area. A Test of Significance under the BC Act is not required as the proposed development is located wholly within biodiversity certified land (savings provisions)(ALEP 2010).

An assessment against the Significant Impact Criteria has been undertaken for threatened species listed under the EPBC Act. Although it was determined that the proposed quarry extension would not have a significant effect on threatened species if recommended mitigation measures are implemented, the project was referred to the Commonwealth Department of Environment and Energy to obtain legal certainty for the proponent.

Following review of the proposed works, the Federal Minister for the Environment and Energy determined that the proposed works were not a 'Controlled Action' and that no further environmental assessment was required under this Act.

In addition, the biodiversity report concluded that the proposed works will not have a long term adverse environmental impact at either the local or state level subject to the establishment of an approximate 15 hectare vegetation offset area being established and maintained on-site. The report also requires that any works to be conducted on-site shall be in accordance with the requirements of a Vegetation Management Plan and Quarry Closure and Rehabilitation Plan prepared for the site.

Water

There are no watercourses affected by the development and the subject land is not subject to flooding. There are also no known groundwater issues associated with the area currently being worked, or to be worked, if consent is granted.

At present, both surface water and groundwater impacts are appropriately managed on-site with stormwater run-off collected and treated via a series of detention basins (dams) located on-site that detains and gradually filters the water and maintains pre-development flows.

Diversion banks have also been established and maintained to direct clean stormwater run-off around areas of work, with water directed into a system of existing sedimentation or retention ponds located downstream that have served the quarry since initial operations began. Continued monitoring and maintenance of this system will ensure the diversion banks will achieve this as designed.

Stockpiles of processed material are located away from drainage outlets to prevent water contamination. Rainwater that directly falls onto the extraction site is retained and used by the crusher in controlling dust. Clean surface water from the sedimentation pond will also be reused for this purpose, if required.

The disposal of biosolid waste (subject to a separate approval) is also currently appropriately managed via the establishment of cut-off drains and leachate dams that control and manage stormwater and leachate run-off in accordance with a previous hydro-geological assessment and Wastewater Management Plan prepared for the site (see **Attachments L & M**). Annual monitoring and periodic environmental audits have also been undertaken that confirm that the development is not causing environmental harm, nor has it resulted in a significant increase in the water table (see **Attachment O**).

The proposed development also does not require separate approval under the *Water Management Act 2000* or the *Fisheries Management Act 1994*.

Noise & Blasting

A Noise Impact Assessment (see **Attachment G**) has been prepared by Ray Walsh Acoustics, Noise and Sound in support of the proposed quarrying and associated activities on-site. More specifically, this report assessed the impacts of the proposed development on nearby sensitive noise receptors (dwellings) to determine if it will operate within specified limits.

The NIA has been prepared in accordance with relevant policies, guidelines and requirements and seeks to determine the current and predicted level of noise and vibrations generated from the site. More specifically, the NIA assessed the future noise emissions from operational plant and on-road traffic from the quarry and associated activities (crushing of concrete, disposal of biosolid waste) under a 'worst case scenario', being at maximum capacity.

Following assessment, it is confirmed that the proposed quarry will operate well within noise limits set by the existing Environmental Protection Licence, the NSW EPA's *Road Noise Policy 2011*, *NSW Industrial Noise Policy 2000*, *Noise Policy for Industry 2017* and the *ANZECC Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration 1990*.

Heritage

The subject land does not contain any items or areas of European heritage significance or adjoin any areas of known heritage significance following a review of Schedule 5 of the *Albury Local Environmental Plan 2010*.

Matters regarding Aboriginal Cultural Heritage have also been assessed and an initial Aboriginal Cultural Heritage Assessment Report (ACHAR) was prepared for the subject land by Biosis (see **Attachment E**) in accordance with relevant NSW Office of Environment and Heritage requirements.

Extensive consultation was undertaken with the Aboriginal community including three (3) Registered Aboriginal Parties (RAPs). A review of the Aboriginal Heritage Information Management System (AHIMS) revealed that there were no registered objects or artefacts contained on-site and the field survey with the RAPs did not uncover any objects or artefacts.

It is noted however that during this meeting the two RAPs indicated that the granite boulders in the north-eastern corner of the study area may be an important ceremonial area. Yalmambirra also provided the following oral history information:

A very important Wiradjuri elder, who has now passed so I cannot say his name, told me that all the areas on high hills in this part of Wiradjuri country were important meeting and gathering places or ceremonial places for men or women.

The outcome of the consultation process was that the RAPs considered the study area to contain an intangible place of moderate cultural significance, although that significance was not clearly defined and specific examples were not provided. As this area is not associated with any tangible Aboriginal cultural heritage site/object or Potential Archaeological Deposit (PAD), it cannot be recorded in AHIMS.

In addition, the site does not meet the criteria to be declared as an Aboriginal place under section 84 of the NPW Act. Only Aboriginal objects and Aboriginal places are protected under the *National Parks and Wildlife Act 1974*. As such an AHIP is not required for this site.

Notwithstanding the above, the boundaries of the proposed quarry expansion area (namely the north east corner) have been amended to generally avoid impacting this area.

Following referral to the NSW Office of Environment and Heritage, it was requested that a second ACHAR be prepared that assessed all areas of 'activities' and works, including proposed roadside embankment works. A subsequent ACHAR was prepared for the entire site and all areas of activity by Biosis (see **Attachment E**) and consultation was undertaken again with the three RAPs.

Following the completion of the archaeological survey, two (2) areas of potential archaeological deposit (PAD) were identified within the project area, identified as Pad 1 and Pad 2. Pad 1 comprised an area of land on a level footslope immediately adjacent an ephemeral waterway to the west and what appeared to be a naturally occurring line to the east. Pad 2 comprised a hill crest/lookout point overlooking the entire study area.

In response, a total of ten 50cm x 50cm pits were excavated within the two Pad sites at 20 metre intervals in order to determine the presence of any artefacts. No artefacts were discovered during these test excavations, which is consistent with other studies within the region, which indicate that Aboriginal sites are largely identified within close proximity (100m) to permanent sources of fresh water.

The report concluded that given that there are no recorded Aboriginal sites/objects recorded in the study area, nor were any artefacts identified during the test excavations, the potential risk of harming Aboriginal cultural heritage is low.

Erosion & Sediment Control

Matters regarding erosion and sediment control can be effectively managed by the adoption and implementation of erosion and sediment control measures such as silt fencing, diversion of stormwater run-off and the stabilisation and top-dressing of disturbed areas, which are already in place.

Erosion and sediment control measures are already undertaken on site, with future controls to be undertaken in accordance with the 'Blue Book' (*Managing Urban Storm water: Volumes 1 and 2*), DECC guideline *Managing Urban Stormwater: Soils and Construction – Volume 2E: Mines and Quarries* and Council's Soil and Water Management Policy.

Development will occur over stages so as to limit the area of land disturbance as well as the potential for erosion and the loss of sediment. Furthermore, erosion and sediment control measures will be periodically reviewed and maintained to ensure that they effectively functioning. To ensure an appropriate long term outcome is achieved, over time the site will be gradually rehabilitated with areas of disturbance to be stabilised, landscaped and returned to its pre-development state.

Soil & Land Resources

The subject land has been operating as an extractive industry for over 45 years and therefore the ongoing use of this land for the purposes of a quarry is not expected to result in the loss of any productive agricultural lands, or the sterilisation of land for future urban development.

The application seeks approval to undertake extractive industry activities within the previously approved Pits 1 and 3 for a 30-year period with a maximum annual extraction of crushed rock on-site of 100,000m³ per annum. The application also seeks approval to expand the previously approved Pit 3 in a north easterly direction. The primary purpose of the quarry is to extract granite materials ('buckshot' and harder diorite granites), which have been found to be very hard and durable and ideally suited to making high quality road base and fine crushed rock.

A resource assessment has been prepared, which outlines the regional and local geology, characteristics, suitability and local markets for this road construction material, as well as an assessment of how much of this resource is available in situ. Previous resource investigations conducted on-site (via bore drilling) (see **Attachment M**) has confirmed that granite material is located to a depth of 130 metres and that there is ample material available to service the proposed development.

Air Quality

An Air Quality Impact was prepared for the proposed development by GHD (see **Attachment H**) in accordance with relevant NSW EPA requirements to determine the development's impacts on nearby sensitive receptors under a 'worst case scenario', being maximum capacity.

The main air quality impacts associated with the proposed quarry activities and works is the generation of airborne dust during excavation works and the transport of materials. Exhaust emissions generated from machinery and transport vehicles will also occur. Some of these impacts already exist courtesy of the existing quarry operation and have been managed and controlled so as to limit complaint.

The principal sources of dust associated with the proposal will be generated by machinery associated with clearing, stockpiling topsoil and fill, excavators loading the trucks and general movement of vehicles to and from the site. Climatic conditions can also influence the impact of dust in the vicinity, particularly in dry and windy conditions.

Following the completion of the air quality assessment, it was concluded that the proposed development will operate within environmental thresholds subject to a number of ongoing mitigation and monitoring works. Such mitigation works include machinery maintenance and treatment of unsealed roads for dust suppression (via water carts) and the retention and maintenance of existing landscape screenings along access roads.

Waste Management

The main wastes produced from quarrying activities will be limited to vegetative remains resulting from clearing the extraction site, which will be used in rehabilitation works and the collection of inert soft and hard plastics from crushed concrete, which will be collected and disposed of via council's normal waste collection services. In addition, effluent disposal from the staff toilet will be disposed of via an existing septic system and general refuse resulting from meal breaks will also be collected.

It is also noted that up to 10,000 tonnes of biosolid waste (classified as general solid waste (putrescible)) from the nearby Norske Skog Paper Mill are currently disposed of on-site in a retired quarry pit located to the south west of Pit 3, which is used as part of site rehabilitation and land application works.

Approval for these works is not required as part of this application as they have already been the subject of a separate development approval and licence process (see Development Consent No. 147/92).

Notwithstanding, consideration of the cumulative impacts of all activities on-site is still required as part of the current application. A hydro-geological study (see **Attachment M**) was previously prepared with regards to the disposal of this biosolid waste and the following environmental protection measures have been established and will be maintained:

- Construction of cut off drains and diversion banks to redirect 'clean' stormwater runoff around waste disposal areas;
- Construction of clay-lined leachate dams to collect and hold leachate run-off, where it is later used to irrigate open paddock lands located to the north west of the waste disposal area; and
- Installation of monitoring bores and piezometers (shallow and deep) to monitor changes in water table levels and chemical composition of the soil;

The receipt and disposal of this waste on-site is currently undertaken in accordance with the conditions of a previously issued development consent and an EPA Licence (No. 10069)(see **Attachment D**), which includes amongst other things, annual monitoring and independent environmental audits. It is noted that since initial disposal of biosolid waste on-site in 1983, there have been no recorded incidents of environmental harm resulting from the disposal of this waste.

Consequently, no further consideration of the disposal of biosolid waste is required as part of this application as it has already previously been approved.

Transport & Access

Access to and from the quarry will occur via the unsealed Winchester Lane, which intersects with Gerogery Road to the east. Given that the proposal seeks to increase the annual maximum rate of extraction, a Traffic Impact Assessment (TIA) has been prepared by Peter Meredith Traffic (see **Attachment F**) that addresses the potential traffic impacts of the development (at maximum capacity) on the capacity, condition, safety and efficiency of the existing road network.

At present, the majority of traffic accessing Winchester Lane and the subject land enters north bound turning left into Winchester Lane from Gerogery Road and exits south bound by turning right from Winchester Lane into Gerogery Road given the destination of source materials.

Following a review of existing and proposed conditions, the TIA concluded that this intersection will continue to operate with a Level of Service 'A' and can achieve appropriate southbound sight distances following the removal of several small trees and low branches by the local road authority that have been allowed to grow uncontrolled on the road verge that currently restrict sight lines.

The report did conclude however that the northern approach to the intersection of Gerogery Road and Winchester Lane did not meet the 250 metre sight distance requirement (only achieved 180 metres). Accordingly, the application proposes to reshape this bank via cutting so as to achieve the relevant sight lines at the intersection of Winchester Lane and Gerogery Road looking north.

The report also outlined that the proposed development will result in an increase in traffic volumes (1vph (vehicle per hour or 5.4 loads per day)), but concluded that the proposed development (at maximum capacity) will not create any adverse impacts with regards to traffic volumes or road capacity and safety.

Social & Economic Impact

The social and economic impacts of the proposed quarry have been assessed and are not expected to differ significantly from current day operations. It is noted that the current quarry has operated for more than 45 years with little to no complaint or incident from surrounding or adjoining neighbours due to the current operations conducted on-site and the management and mitigation measures implemented by the operator.

The social and economic impacts of the quarry is considered appropriate and will not create any adverse off-site impacts as the works will continue to be screened from view and will operate within relevant environmental (air quality, noise, traffic) thresholds. This will ensure that adjoining neighbours are protected on-going and will not be adversely affected as a result of the development.

It is noted that at maximum capacity, the quarry will only operate approximately 133 days per year or 11 days per month (based on current daily extraction rates, which are not proposed to change) and will therefore not operate full time, but rather on an as needs basis to cater for the demands of the existing site operator. This will ensure that any impacts on neighbours associated with the development will be limited.

The existing quarry provides a number of positive economic impacts as it satisfies the strong ongoing demand for quarry resources as part of local road construction and earthmoving operations conducted by the current owner and operator of the land. The current materials extracted on-site provide valuable resources to the local construction industry and avoid the need to have to source resources from outside of the local area, which will lead to higher construction costs.

Visual Amenity

The existing quarry is screened from surrounding lands and is located below the ridgeline of Nine Mile Hill. Existing remnant vegetation is proposed to be retained on-site and it is noted that the landowner previously undertook extensive landscape plantings approximately 10 years ago to screen the access road and minimise issues regarding dust and visual appearance.

Given the fact that the quarry already exists and the proposed quarry expansion area will be centrally located and visually screened below the ridgeline, the development will not create any issues with regards to visual amenity.

As a consequence, there will be no significant change to the visual landscape of the area.

Surrounding Land Uses

The quarry is surrounded by a variety and mix of land uses including agricultural uses, industrial uses, another extractive industry, as well as a number of large lot residential dwellings. It is reiterated that the subject land has continued to operate for the purposes of an extractive industry and associated works, including the crushing of recycled concrete and disposal of biosolid waste for over 45 years with little or no complaint.

Accordingly, the use of the subject land as a quarry and associated works will not adversely affect the surrounding land uses and will act as an appropriate transition/buffer between proposed large scale heavy industrial developments located to the south and large lot residential properties located to the north.

Work, Health and Safety

The subject land has continued to operate for the purposes of an extractive industry for over 45 years with little or no incident or complaint. There are a number of factors that could be considered to contribute to this general level of compliance including; the generally isolated location of the proposed works, the relatively small-scale nature of the quarry, the fact that the site is secured and not publicly available, as well as the management measures that have been established over time.

Despite the general lack of incidents or public and worker safety concerns, the use of the land as a quarry and associated works still has the potential to create public safety risks, including road safety issues, work, health and safety risks, as well as environmental health issues (odour, noise, dust).

Whilst this has the potential to create public/worker health and safety concerns, this is considered satisfactory in this instance as the land is not publicly available and is secured via fencing and gates, including the fitting of a motion-censored infra-red security camera on site entrances. In addition, the development does not involve the storage, handling or transport of hazardous or dangerous goods.

Staff safety and operational management measures have also been established and implemented, including a requirement for a minimum of three (3) staff to be present on-site at all times and the installation of security cameras on screening and crushing plant to monitor quarrying operations.

The proposed development will maintain these safety and security procedures and is therefore expected to maintain existing works, health and safety requirements.

Utilities & Services

The proposed quarry and associated works are not expected to generate any additional demands for infrastructure and services over and above the existing operations on-site.

Furthermore, the proposed development will not adversely affect the existing water supply and right of carriageway easements that currently traverse the land and will not place any undue demands on Council's or service providers' infrastructure.

It is noted however, that the existing electrical easement that traverses the site will need to be realigned as this easement is located within the proposed quarry expansion area (stages 4-6). In response, this infrastructure will be relocated prior to development occurring in stages 4-6 of the quarry expansion area and will be realigned through the current extraction pit and proposed stage 2-3 expansion areas, which will have been exhausted and rehabilitated back to its natural state.

Matters regarding on-site effluent disposal have also been considered and are appropriate in this instance as there is ample capacity within the current septic disposal system to accommodate the ongoing use of this site.

Rehabilitation & Future Land Use

The subject land will be gradually rehabilitated over time as areas become exhausted of minerals and progressive site rehabilitation will occur at the completion of each stage to minimise the appearance of site disturbance and ensure a safe and self-sustaining environment when the operation of the quarry is fully completed.

A Quarry Closure and Rehabilitation Plan has been prepared and is provided as **Attachment L** to this EIS. The main objective of the rehabilitation is to produce an area which is stable, self-sustaining, conforms to the character of the local and regional environment, and is safe. At the completion of quarrying activities, the site will be fully rehabilitated in the form of grassed paddocks, giving the site a similar appearance to its surrounding lands.

In recognition of the native vegetation removal works associated with the proposed extractive industry, an area of RU2 Rural Landscape zoned land will be revegetated and maintained ongoing to ensure that the development does not have a long term adverse environmental impact. These works will be undertaken in accordance with a Vegetation Management Plan (VMP) that has been prepared for the site (see **Attachment I**).

Conclusion

This EIS has been prepared to consider the environmental, social and economic impacts of the proposed extractive industry (Rockwood Quarry), crushing of recycled concrete and associated works. The EIS addresses the matters for consideration outlined in the SEARs and accords with Schedule 2 of the EP&A Regulation.

As demonstrated within this EIS and having regard to the fact that the existing quarry has been operating from this site for more than 45 years with limited neighbour complaint, the impacts on the environment and surrounding land uses from the sites' ongoing use as an extractive industry is considered to be appropriate.

It is therefore considered that the subject project warrants approval.

1. Introduction

This Environmental Impact Statement (EIS) has been prepared by Habitat Planning on behalf of AP Delaney & Co Pty Ltd to accompany a Designated Development application for an extractive industry, the crushing of recycled concrete and associated works at 208 Winchester Lane, Table Top, more commonly known as 'Rockwood Quarry'.

The EIS has been prepared and submitted to the Department of Planning & Environment (DPE) and Albury City Council pursuant to Section 78A (8A) of the *Environmental Planning & Assessment Act 1979* (EP&A Act) and Schedule 2 of the *Environmental Planning & Assessment Regulation 2000* (EP&A Regulation). The EIS has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) issued by DPE on 5 September 2016 and further advice provided by DPE on 16 March 2018, 29 March 2018 and 19 October 2018 (see **Attachment A**).

This EIS provides a comprehensive environmental assessment of the project. It describes the subject site, the project and its benefits, and assesses the project against relevant matters set out in legislation, environmental planning instruments and planning policies and strategies. It should be read in conjunction with the supporting information and plans attached to this report.

The EIS demonstrates that the project is consistent with the relevant State and local strategic planning objectives and will allow for the ongoing use of the land for extractive industry and associated purposes, which will not result in any significant environmental or amenity impacts. Accordingly, the EIS concludes that the project warrants approval.

1.1 Project Summary

A summary of the proposed development is outlined in **Table 1** below:

Table 1: Project Summary

SEARs No.	1075
Address	208 Winchester Lane, Table Top 'Rockwood Quarry'
Property Description	- Lot 2 in DP 1018401 - Lot 3 in DP 233061
Ownership	AP Delaney & Co Pty Ltd
LGA	Albury
Zoning	<i>Albury Local Environmental Plan 2010:</i> - RU2 Rural Landscape; - E3 Environmental Management.
Permissibility	- Proposal is permissible with consent in the RU2 zone. - Proposal is prohibited in the E3 zone. Notwithstanding, the subject land is listed as Item No. 15 within Schedule 1 of the LEP as an 'Additional Permitted Use', which allows 'extractive industries' as permitted with consent.
Project Description	Extractive industry, crushing of recycled concrete (20,000m ³ per annum), road embankment works, tree removal works and revegetation and rehabilitation works.
Annual Extraction Rate	100,000m ³ per annum (current site activities approved for 75,000m ³ per annum).
Life of Consent	30 years.

1.2 Background

AP Delaney & Co Pty Ltd purchased 190 hectares of land at Nine Mill Hill (the subject land) on 10 June 1970 as a source of hill gravel and rock for use in earthmoving activities in the Albury-Wodonga region. At the time of acquiring this property, the subject land was being used by the former Hume Shire Council as a source of hill gravel when there were no restrictions or approvals required for the extraction of raw materials from farming properties.

Since owning the subject land, the land has continued to be used by this company for the purposes of an extractive industry.

On 20 May 1992, the NSW Minister for Planning approved a modification of the Norske Skog Paper Mill, which allowed for the installation of a recycled fibre plant and associated work to enable the storage and warehousing of old newspapers and similar products and the deinking and recycling of such products into pulp. As a consequence, this modification also allowed for the disposal of solid waste (biosolids) to Rockwood Quarry, subject to the installation of environmental protection measures and an ongoing monitoring program.

On 18 June 1993, *State Environmental Planning Policy No. 37 – Continued Mines and Extractive Industries* (SEPP 37) was introduced and required the registration of existing operating mining/quarrying operations with the local council, which at the time was the former Hume Shire Council. In accordance with the requirements of SEPP 37, the existing quarry was duly registered.

In 1995, a Development Application was submitted to the former Hume Shire Council to continue quarrying operations on the subject land. Following review of this application, Development Consent No. 73/95 was subsequently issued, which included a condition that the development consent would lapse 20 years from the date of approval, that is, on 17 September 2016.

This development consent was subsequently modified (Modification No. 73/95AM1) in March 1999 to allow for an expansion of quarrying operations to include blasting and the recycling and crushing of concrete on-site.

In 2004, a boundary adjustment occurred between the former Hume Shire and Albury Local Government Areas (LGAs). As a consequence, the subject land is now contained within the Albury LGA and under the jurisdiction of Albury City Council.

In June 2006 an application was made to Albury City Council to modify the existing development consent to allow for an increase in the annual production of crushed rock from 50,000m³ to 75,000m³ per annum, as well as to allow for an extension of time beyond the current 20 year period. As part of this modification process, a Statement of Environmental Effects was prepared and the proposed modification was publicly advertised and referred to a number of government agencies.

Following consideration of this request, development consent No. 10.2008.28631.1 was subsequently issued by Albury City Council, being a modification of the previous Hume Shire Consents 73/95 and 73/95AM1. Whilst approval was granted to increase the maximum annual production of crushed rock up to 75,000m³, it is noted however that the request to extend the life of this approval beyond the 20 year period was not supported by Council and the development was due to expire on 17 September 2016.

This modification of consent was subject to 23 conditions, which the current landowner and operator have faithfully fulfilled and/or adhered to over the past 10 years. In particular, this has involved significant site fencing and tree planting operations, dust suppression initiatives, sight screening and

monitoring procedures, so as to ensure compliance with relevant local and state government requirements, as well as to minimise any potential impacts or harm on surrounding neighbours.

Apart from a small number of queries or enquiries regarding the current operations of the quarry during its initial operation, the development has been operating compliantly and complaint free for many years, and wish to continue to do so.

Ongoing requests by the landowner for Albury City Council to modify the original approval and extend the life of the existing development consent beyond the current expiration date were assessed, but ultimately not supported.

In response, the landowner was requested to submit a new development application and accompanying Environmental Impact Statement (EIS) consistent with current legislative and planning requirements, so as to allow for the continued use of the subject land as an extractive industry.

In recognition of the amount of work involved in preparing a new development application, Albury City Council granted several one (1) year extensions of time to allow for the preparation of this documentation and allow existing extractive industry operations to continue in the interim. The revised date that the approval will now expire is 17 September 2019.

Accordingly, the subject Development Application has been prepared in response to previous discussions and advice received from Albury City Council.

A summary of the history of the subject land is contained within **Table 2** below.

A copy of the most recent development consent issued for the site is provided as **Attachment C** to this report.

Table 2: Site History

Date	Description
Pre-1970	Operation and use of subject land as a quarry by the former Hume Shire Council
June 1970	AP Delaney & Co Pty Ltd acquires the subject land and continues operation as a quarry.
May 1992	Modification of Development Consent No. 147/92 issued by the Minister for Planning for the installation of a recycled fibre plant and associated work, to enable the storage and warehousing of old newspapers and similar products and the deinking and recycling of such products into pulp including allowing the disposal of biosolid waste on the 'Rockwood Quarry' site, subject to ongoing monitoring and environmental protection measures.
June 1993	<i>State Environmental Planning Policy No. 37 – Continued Mines and Extractive Industries</i> was gazetted and the quarry was registered with Hume Shire Council.
September 1995	Development Consent No. 73/95 issued by Hume Shire Council to continue quarrying operations on-site. This approval was granted for a 20 year period and was due to expire on 17 September 2016.
March 1999	Modification of original development consent by Hume Shire Council (No. 73/95AM1) to allow for blasting and crushing and the recycling of concrete.
December 2008	Modification of original development consent by Albury City Council to increase the annual production of crushed rock from 50,000m ³ to 75,000m ³ per annum. Development Consent was also granted for an expansion of Pit 3 to the north east in an area measuring approximately 450m x 300m. It is noted however that a request to extend the life of the approval was not granted. This approval was subsequently known as Development Consent No. 10.2008.28631.1

Date	Description
November 2016	Modification of development consent (No. 10.2008.28631.2) to allow for a one (1) year extension of time before the development consent expired. The new date that the development consent lapses is 17 September 2017.
September 2017	Modification of development consent (No. 10.2008.28631.3) to allow for an additional one (1) year extension of time before the development consent expires. The new date that the development consent lapses is 17 September 2018 or 30 November 2017 should a new Development Application (and associated Environmental Impact Statement) not be lodged for a new extractive industry on-site.
November 2017 *	Lodgement of Development Application (Designated Development) and supporting Environmental Impact Statement for an extractive industry with a lifespan of 30 years and a maximum annual production of crushed rock of 100,000m ³ per annum.
September 2018	Modification of development consent (No. 10.2008.28631.4) to allow for an additional one (1) year extension of time before the development consent expires. The new date that the development consent lapses is 17 September 2019.
April 2019 (present day)*	Lodgement of revised Environmental Impact Statement in response to a request for further information from a number of government agencies and council identified during assessment.

* Current Development Application lodged as Designated Development, yet to be determined.

1.3 Secretary's Environmental Assessment Requirements (SEARs)

The Secretary's Environmental Assessment Requirements (SEARs) No. 1075 were issued by NSW Department of Planning and Environment (DPE) on 5 September 2016. **Table 3** below provides an outline of the individual requirements of the SEARs and how they have been addressed in this EIS.

A full copy of the SEARs is included at **Attachment A**.

It is noted however, that since obtaining the SEARs, the current owner and operator requested that the proposed development be amended to increase the annual maximum extraction of crushed rock from 75,000m³ to 100,000m³ per annum. It was also requested that the period of time in which the approval will lapse be increased from 20 years to 40 years.

Following consultation and advice received from DPE on 16 March 2018 (see **Attachment A**), it was confirmed that the original existing SEARs is still appropriate and that a new SEARs does not need to be re-issued. It is noted however, that DPE advised that it is unlikely to support a request for a 40 year quarry project as originally requested. Accordingly, the project was amended to have a maximum lifespan of 30 years and the development is reliant upon the originally-issued SEARs.

Furthermore, in response to an OEH request, consultation and advice was received from DPE on 29 March 2018 confirming that the proposed consequential embankment works and tree removal works located within the Gerogery Road, road reserve is covered within the scope of the current SEARs.

Further advice was received from Albury City Council on 1 August 2018 recommending that further consultation be undertaken with NSW DPE regarding the proposed timings and scope of the proposal given the time delays associated with the project. In accordance with this request, further consultation was undertaken with DPE, and a written response was provided on 19 October 2018 confirming that the current SEARs and scope of works is still valid and will not lapse.

Table 3: Secretary's Environmental Assessment Requirements Compliance Table

Secretary's Environmental Assessment Requirements No. 1075	Addressed in EIS
General Requirements	
The Environmental Impact Statement (EIS) for the development must comply with the requirements in Clauses 6 and 7 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>. In particular, the EIS must include: ▪ an executive summary;	See Executive Summary section of report
▪ a comprehensive description of the development, including: - a detailed site description and history of any previous quarrying on the site, including a current survey plan; - identification of the resource, including the amount, type and composition, as well as details regarding the timing and intensity of extractive operations, having regard to DRE's requirements; - the layout of the proposed works and components (including any existing infrastructure that would be used for the development); - an assessment of the potential impacts of the development, as well as any cumulative impacts, including the measures that would be used to minimise, manage or offset these impacts; - a summary of all proposed environmental management and monitoring measures for the development; - a detailed rehabilitation plan for the site; - any likely interactions between the development and any existing/approved developments and land uses in the area; - a list of any other approvals that must be obtained before the development may commence; - the permissibility of the development, including identification of the land use zoning of the site; - identification of sensitive receivers likely to be affected by the development using clear maps/plans, including key landform areas, such as conservation areas and waterways; and ▪ the reasons why the development should be approved, having regard to the economic, social and environmental aspects of the development and taking into consideration the objects of the Environmental Planning & Assessment Act 1979; ▪ a signed declaration from the author of the EIS, certifying that the information contained within the document is neither false nor misleading.	Throughout EIS
Key Issues	
The EIS must assess the potential impacts of the proposal at all stages of the development, including the establishment, operation and decommissioning of the development. Water – including: - an annual site water balance for representative years over the life of the development and demonstration that sufficient water supplies would be available to meet operational requirements; - identification of any licensing requirements or other approvals required under the <i>Water Act 1912</i> and/or <i>Water Management Act 2000</i>; - a description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant Water Sharing Plan or water source embargo; - an assessment of activities that could cause erosion or sedimentation issues, and the proposed measures to prevent or control these impacts; - an assessment of the likely impacts of the development on the quality and quantity of surface and groundwater resources, having regard to EPA and WaterNSW requirements; - a detailed description of the proposed water management system, water monitoring program and other measures to mitigate surface and groundwater impacts; and - an assessment of potential downstream impacts from surface water runoff, having regard to the requirements of WaterNSW;	Section 7.2, 7.6 and Attachment M

Secretary's Environmental Assessment Requirements No. 1075	Addressed in EIS
Air – including: an assessment of the likely air quality impacts of the development in accordance with the <i>Approved Methods for the Modelling and Assessment of Air Pollutants in NSW</i>, having regard to EPA requirements. The assessment is to give particular attention to potential dust impacts on any nearby private receivers due to construction activities, the operation of the quarry and/or road haulage;	Section 7.7 & Attachment H
Noise and Blasting – including: - an assessment of the likely construction and operational noise and vibration impacts of the development in accordance with the <i>NSW Industrial Noise Policy</i> and the <i>Interim Construction Noise Guideline</i>, having regard to EPA requirements; - an assessment of the likely road noise impacts (traffic and haulage) of the development under the <i>NSW Road Noise Policy</i>; and - an assessment of the likely blasting and vibration impacts of the development, having regard to the relevant ANZEC guidelines and paying particular attention to impacts on people, livestock, heritage items and infrastructure.	Section 7.3 & Attachment G
Biodiversity – including: - accurate predictions of any vegetation clearing on site; and - consideration of the potential biodiversity impacts of the development, having regard to the requirements of OEH	Section 7.1 & Attachments I & J
Heritage – including: - an assessment of the potential impacts on Aboriginal heritage (cultural and archaeological), including evidence of appropriate consultation with relevant Aboriginal communities/parties and documentation of the views of these stakeholders regarding the likely impact of the development on their cultural heritage, and having regard to OEH requirements; and - identification of Historic heritage in the vicinity of the development and an assessment of the likelihood and significance of impacts on heritage items, having regard to the requirements of relevant policies and guidelines.	Section 7.4 & Attachment E
Transport – including: - an assessment of potential traffic impacts on the capacity, condition, safety and efficiency of the local and State road networks, detailing the nature of the traffic generated, transport routes, traffic volumes and potential impacts on local and regional roads, having regard to the requirements of Council and RMS; - a description of the measures that would be implemented to maintain and/or improve the capacity, efficiency and safety of the road network (particularly the proposed transport routes) over the life of the development; - evidence of any consultation with relevant roads authorities, regarding the establishment of agreed contributions towards road upgrades or maintenance; and - a description of access roads, specifically in relation to nearby Crown roads & fire trails;	Section 7.9 & Attachment F
Land – including: - an assessment of potential impacts on the quality and quantity of the soils and land capability of the site, including any likely disturbance of contaminated soils, and the proposed mitigation, management and remedial measures (as appropriate), having regard to EPA requirements (Attachment 2); - an assessment of the likely impacts on landforms and topography, including the long-term geotechnical stability of any new landforms; and - an assessment of the compatibility of the development with other land uses in the vicinity of the development, in accordance with the requirements of Clause 12 of <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>;	Section 7.6 & Attachment M
Waste – including estimates of the quantity and nature of the waste streams that would be generated or received by the development and any measures that would be implemented to minimise, manage or dispose of these waste streams, having regard to EPA and Council requirements	Section 7.8

Secretary's Environmental Assessment Requirements No. 1075		Addressed in EIS
Public Safety – including an assessment of the likely risks to public safety, paying particular attention to the transport, storage, handling and use of any hazardous or dangerous goods, and having regard to RFS requirements		Section 7.13
Visual – including an assessment of the likely visual impacts of the development on any surrounding private landowners and key vantage points in the public domain, paying particular attention to impacts on any nearby private residences and road users;		Section 7.11
Social & Economic – an assessment of the likely social and economic impacts of the development, including consideration of both the significance of the resource and the costs and benefits of the project;		Section 7.10
Rehabilitation – including: - a detailed description of the proposed rehabilitation measures that would be undertaken throughout the development and during quarry closure; - a detailed rehabilitation strategy, including justification for the proposed final landform and consideration of the objectives of any relevant strategic land use plans or policies; and - the measures that would be undertaken to ensure sufficient financial resources are available to implement the proposed rehabilitation strategy.		Section 7.15 & Attachment L
Environmental Planning Instruments		
The EIS must take into account all relevant State Government environmental planning instruments, guidelines, policies, and plans During the preparation of the EIS reference should also be made to the Department's EIS Guideline – <i>Extractive Industries – Quarries</i> .		Sections 4 & 5
Consultation		
In preparing the EIS for the development, you should consult with relevant local, State or Commonwealth Government authorities, infrastructure and service providers and any surrounding landowners that may be impacted by the development.		Section 6
The EIS must describe the consultation that was carried out, identify the issues raised during this consultation, and explain how these issues have been addressed in the EIS.		

1.4 Project Team

Habitat Planning have prepared this EIS on behalf of AP Delaney & Co Pty Ltd. Component studies that have informed the preparation of the EIS were undertaken by a number of technical specialists, including:

- Traffic Impact Assessment (TIA) – Peter Meredith Consulting;
- Aboriginal Cultural Heritage Assessment Reports (ACHAR) – Biosis;
- Biodiversity Assessment (General) and Vegetation Management Plan – Biosis;
- Environment Protection and Biodiversity Conservation (EPBC) Act Referral – Biosis;
- Biodiversity Assessment (Survey of Pink Tailed Lizard) – Ecotone Wildlife and Habitat Assessments;
- Air Quality Impact Assessment (AQIA) – GHD; and
- Noise Impact Assessment (NIA) – Ray Walsh Acoustics, Noise & Sound.

A full copy of these sub-consultant reports is available in **Attachments E, F, G, H, I, J and K**.

1.5 Structure of EIS

The EIS contains the following sections:

Table 4: EIS Structure

Section 1	Introduction
Section 2	Site & Context Description
Section 3	Description of Proposal
Section 4	Statutory Planning Instruments
Section 5	Strategic Plans & Policies
Section 6	Consultation
Section 7	Environmental Issues
Section 8	Summary of Mitigation Measures
Section 9	Conclusion

1.6 Project Objectives

The objectives of the proposal are:

- to continue extracting material from the subject land for use in road construction projects around the Albury-Wodonga region and to meet client requirements;
- to seek approval for an extractive industry with a lifespan of 30 years as the current approval is due to expire on 17 September 2019;
- to continue processing waste concrete into recycled and re-usable crushed road pavement material;
- to seek a maximum annual quarry production of 100,000m³ to allow for the future growth of the business and construction industry in the Albury-Wodonga areas;
- to increase the development footprint and extraction area of the existing Pit 3 operating on-site consistent with a previous approval issued for the site;
- to continue extracting raw material from the existing Pit 1 operating on-site within the existing development footprint;
- to ensure that there are no detrimental impacts to the environment or adjoining neighbours as a result of the activities of the quarry;
- to responsibly manage the extractive industry and crushing of concrete in accordance with all regulatory authority requirements and industry guidelines; and
- to continue to undertake ongoing and staged rehabilitation and revegetation works to limit the area of disturbance at any given time and ensure a self-sustaining natural environment upon closure of the quarry.

1.7 Analysis of Alternatives

Careful consideration has been given to the feasibility of alternative options to the carrying out of the development. It is acknowledged that in the absence of carrying out the development on the subject land, this land could be used for a number of alternative land use purposes.

Notwithstanding, following analysis of these alternative options, there are limited opportunities to redevelop the land for alternative uses given the undulating and rocky terrain of the land, which make it difficult to be used for rural, commercial or industrial purposes. Similarly, given the sites' proximity to existing heavy industries and other extractive industries, the site is also not appropriate for residential or rural residential purposes.

Accordingly, the main alternative to the proposal is to cease all quarrying operations on site and use it for broadacre farming purposes.

The implications of this are:

- hill gravel and rock will need to be sourced from elsewhere, which could encourage the opening of a new pit on a greenfields site somewhere else within the Riverina-Murray Region on a less appropriate site;
- materials for construction projects in Albury-Wodonga will need to be sourced from further afield, which will place additional demands on road infrastructure;
- competition for the provision of gravel will be reduced, which could lead to increased construction costs;
- a loss of jobs;
- the investment in the site by the current operator will not be realised, which will have an adverse economic impact on the landowner; and
- the infrastructure installed at the site will be under-utilised or will need to be removed.

1.8 Justification of Development

The proposal is justified because:

- an approved extractive industry already exists on the subject land and the development seeks approval to allow works ongoing generally in accordance with previous approvals issued for the site;
- it seeks approval for a maximum annual production output of 100,000m³ of crushed rock to cater for the future long-term demands and growth of the business;
- there is a demonstrated demand for hill gravel and rock for road construction purposes in the Albury-Wodonga area;
- the consequences of continuing with the current activity outweigh the alternatives (see Section 1.7 above);
- it will maintain local employment and support a local road construction business;
- it will allow for the ongoing recycling of concrete waste, which can be re-used in road construction projects;

- the owner has already undertaken a number of rehabilitation works with regards to areas of the site no longer required for extractive industry purposes, which will continue ongoing as areas of the site become exhausted;
- it will not create any adverse environmental impacts and will continue to operate in accordance with previous approvals, licenses and monitoring measures that apply to the site;
- any initial impacts on the area have already been established through the existing activity and as demonstrated within this report, even at ultimate operating capacity the development will not create any adverse environmental or social impacts; and
- the activity has operated with limited complaint or objection from the public and generally to the satisfaction of the regulatory authorities since initially being established over 45 years ago.

Furthermore, the proposed development is generally consistent with relevant state and local strategic planning policies as detailed within Sections 5 and 6 of this report.

More specifically, the development supports local employment, protects areas of mineral resources, does not create additional land use conflicts and seeks to minimise environmental harm and degradation.

2. Site & Context Description

2.1 Subject Land

The subject land is described as Lot 2 in Deposited Plan (DP) 1018401 and Lot 3 in DP 233061 within the Albury Local Government Area, Parish of Jindera and County of Goulburn.

The property is addressed as 208 Winchester Lane, Table Top, but is more commonly known as 'Rockwood Quarry'. The subject land is located on Nine Mile Hill on the western side of Gerogery Road approximately 10km north of Albury (see **Figures 1-2**).

2.1.1 Existing Conditions

The subject land is 189.33 hectares in size and is generally irregularly shaped. The topography of the land is undulating and in parts quite steep (10-20% slope) as it forms part of Nine Mile Hill. Consequently, there are a number of changes of terrain over the site ranging from 250 metres Australian Height Datum (AHD) in the south-eastern corner of the site, up to 360 metres AHD at the crest of the hill generally located within the centre of the site.

Primary vehicular access to the site is derived from the unsealed Winchester Lane, which intersects with the adjoining sealed Gerogery Road located to the east of the subject land situated at the crest of the hill. A secondary unsealed access point also exists approximately 1.2 kilometres further south towards the Nexus industrial estate via an existing Crown Lands Travelling Stock Reserve (TSR).

The subject land has principally been used for the purposes of an extractive industry, with quarrying activities occurring on-site since the pre-1970s, including use by the former Hume Shire Council. These activities continue today with the current operator and also include the ancillary crushing and recycling of concrete and disposal of liquid wastes from the adjoining Norske Skog Paper mill. Other activities to occur on-site include the intermittent grazing of cattle and other livestock on those portions of the site not used for quarrying activities.

The land is generally rural in nature and contains a number of extant patches of native vegetation and isolated/scattered paddock trees and unimproved pastures, as well as a number of dams, which are used for the purposes of filtering/treating stormwater run-off generated by the current quarrying activities on-site. Towards the crest of Nine Mile Hill, the landform has a rocky outcrop, which has made the subject land an excellent source of extractive materials and roadbase for construction activities.

A number of easements traverse the property including:

- Right of Carriageway – 20m wide;
- Electricity – 20m wide; and
- Water supply – variable and 4m wide.

It is also noted that within the confines of the overall site boundaries is an existing residential dwelling located at 96 Winchester Lane. This property was previously excised off from the subject land and utilises the existing internal driveway (Winchester Lane). It is noted that the occupants of this dwelling are relatives of the current site operator.

2.1.2 Soil Type

Soil conditions on-site comprise harder diorite granites overlain by 6 – 8 metres of moderately to highly weathered granites, which in turn are overlain by very highly weathered granite gravels and clay. The source rock material has been found to be very hard and durable and ideally suited to making high quality road base and fine crushed rock.

Also present on-site is a topsoil layer nominally 100mm thick that contains a layer of naturally occurring grasses and vegetation.

2.1.3 Climate

The general climatic conditions influencing the subject land have been identified using data collected by the Commonwealth Bureau of Meteorology at the Albury Airport, located approximately 10km to the south. This information is provided in **Tables 5-7**.

Temperature

Table 5 show a fairly typical southern inland climate with hot summers and cold winters. The semi-arid location of the subject land means that average summer and winter temperatures are generally higher than other areas located on the coast.

Temperatures experienced at Albury are variable throughout the year. The maximum mean temperatures range between 32.2°C in January to 13.1°C in July. The minimum mean temperatures range between 16.5°C in January to 3.2°C in July.

Overall the warmest months of the year are January and February, which receive mean daily maximum temperatures of 32.2°C and 31.2°C respectively.

July is the coolest month, experiencing a mean daily maximum temperature of 13.1°C and a mean daily minimum of 3.2°C.

Table 5: Annual Temperature, Albury

Temperature	Jan	Feb	March	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Max. Temperature (°C)	32.2	31.2	27.8	22.5	17.6	14.0	13.1	15.0	18.0	21.8	26.1	29.4	22.4
Mean Min. Temperature (°C)	16.5	16.3	12.9	8.4	5.5	3.8	3.2	3.6	5.7	8.0	11.7	13.9	9.1

Source: Australian Bureau of Meteorology (BoM)

Rainfall

Mean annual rainfall recorded at Albury is 623.7mm, with the highest falls generally occurring in the winter and spring months (see **Table 6**). July and August are generally the wettest months of the year, receiving rainfall of 67.3mm and 65.8mm respectively, on approximately 19 rain days. The lowest rainfall generally occurs during January, receiving 38.5mm on approximately 4 days.

Methods to inhibit soil erosion and the deterioration of water quality (see **Sections 7.5** and **7.6**) should be more progressively undertaken in the winter months when rainfall is at its highest.

Table 6: Annual Rainfall, Albury

Rainfall	Jan	Feb	March	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Rainfall (mm)	38.5	47.1	40.0	41.8	50.7	63.9	67.3	65.8	59.4	48.0	62.1	40.1	623.7
Mean no. of days of rain >1mm	4.0	3.7	3.2	4.5	6.0	8.5	10.0	9.0	6.9	5.9	5.6	4.7	72.0

Source: Australian Bureau of Meteorology (BoM)

Wind

Winds are strongest during spring and summer and also later in the day for all months (see **Table 7**). Handling and weathering of quarry material can cause disintegration of some material, providing a ready source of dust under dry or windy conditions. Other sources of dust under high wind conditions include embankments, stockpiles, dried-out tailing dams, construction areas, crushing of materials and dusty sealed or dry unsealed roads. Methods used to inhibit dust from the site, such as water carts, should be more progressively used within these periods.

Winds within the Albury area are typically light, with a high frequency of low wind speeds occurring throughout the year. The 9am mean wind range is between 4.8km/h in May and 11.1km/h in December. The 3pm mean wind range is between 10.8km/h in May and 17.4km/h in December. The mean wind range for 9am is 8.0km/h and 14.3km/h for 3pm. Consequently, the winds are generally stronger in the afternoon.

Table 7: Annual Wind Speeds, Albury

Wind Speed	Jan	Feb	March	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean 9am wind sweep (km/h)	10.7	8.6	6.3	6.1	4.8	5.4	5.6	7.0	9.9	10.2	10.5	11.1	8.0
Mean 3pm wind speed (km/h)	16.1	14.0	14.3	13.1	10.8	11.0	11.4	14.2	16.4	16.8	16.4	17.4	14.3

Source: Australian Bureau of Meteorology (BoM)

2.1.4 Flora and Fauna

The subject land contains native vegetation, some of which is contiguous with native vegetation on adjacent properties and road reserves. The entirety of the site has had some modification to the canopy with historical tree removal occurring for timber harvesting or pasture improvement. Higher quality woodland remnants occur on hilltops and rocky rises where the canopy remains relatively intact and the understorey is predominantly native.

Derived grasslands occur on the slopes and valley floors where the canopy has been predominantly removed but the understorey remains native. The eastern portion of the site has been grazed extensively by cattle while the western and northern sections have been excluded from grazing, with the exception of minor native grazing by Eastern Grey Kangaroo. A section of the subject land to the northeast of Pit 3 (being former Pit 2) has been impacted by past quarrying activities and now contains predominantly introduced vegetation.

Native vegetation within the study area consists of Plant Community Type (PCT) 266: *White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion* where the canopy remains and PCT 1000: *Speargrass – Redleg Grass derived grassland on hills in the Jindera to Holbrook region*, southern NSW South Western Slopes bioregion where the canopy has been historically removed

Woodland areas contain a relatively sparse canopy dominated by White Box *Eucalyptus albens* with some Blakely's Red-gum *Eucalyptus blakelyi* and Apple Box *Eucalyptus bridgesiana* present. The mid-storey is sparse to absent but where present includes Kurrajong *Brachychiton populneus* subsp. *populneus* and Hickory Wattle *Acacia implexa*. The groundcover consists predominantly of grazing tolerant native grasses including Red-leg Grass *Bothriochloa macra*, Lobed Wallaby-grass *Rytidosperma auriculata*, Common Wheatgrass *Elymus scaber* var. *scaber* and Umbrella Grass *Digitaria divaricatissima*. A sparse herb layer is present and includes Cranesbill Geranium *Geranium retrorsum*, Rock Isotome *Isotoma axillaris* and Rock Fern *Cheilanthes sieberi* subsp. *sieberi*.

Plant Community Type 266 was found to meet the listing criteria as the Box Gum Woodlands Threatened Ecological Community, listed as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The subject land was also found to contain suitable habitat for the Pink-tailed Worm lizard *Aprasia parapulchella*, listed as Vulnerable under the EPBC Act, and Swift Parrot *Lathamus discolor*, listed as Critically Endangered under the EPBC Act. Sixteen bird species listed under the *Biodiversity Conservation Act 2016* (BC Act) were recorded or predicted to occur within the study area.

2.2 Existing Quarry & Associated Activities

2.2.1 Existing Development Consents

Development Consent No. 73/95, was issued by the former Hume Shire Council on 17 September 1995 for the current quarrying operations. One of the principal conditions of this Development Consent was the inclusion of a condition that limited the life of the approval to 20 years.

Since this time, the original approval has been subsequently modified including; in March 1999 to allow for blasting, crushing and the recycling of concrete, as well as in June 2006, which allowed for an increase in the maximum annual production of crushed rock from 50,000m³ to 75,000m³.

In November 2016, a further modification was approved to allow for a one (1) year extension of time to allow the landowner to explore different approval options for the site. As an outcome of these investigations, a second one year extension was granted in September 2017 to allow quarrying activities to continue on-site, whilst the landowner prepared a new development application (this submission) compliant with current day legislative and planning requirements. In recognition of the amount of work required to complete some of these investigations, a third one year extension was granted to allow for the completion of the technical investigations.

It is noted that the most recent approval that applies to the subject land is Development Consent No. 10.2008.28631.4 issued on 12 September 2018 by Albury City Council and the revised date that this approval will expire is 17 September 2019.

Development Consent No. 147/92 also applies to the subject land and was issued by the Minister for Planning in relation to the adjoining Norske Skog Paper Mill. As part of this approval, approval was also granted for the disposal of liquid wastes from the de-inking and wastewater treatments plants from the Norske Skog Paper Mill (classified as 'general solid waste (putrescible)') onto the subject land, which is used as a part of site rehabilitation works. More specifically, this waste disposal occurs in the south west corner of Pit 3 in a retired quarry pit.

The transport and disposal of this waste material is covered by a separate Development Consent (see DA 147/92) and a separate EPA licence and Resource Recovery Order (RRO) and Exemption obtained by Norske Skog from the EPA.

This approval is open-ended and remains valid ongoing.

2.2.2 Existing Licenses

Given the scale and nature of the existing activities conducted on-site, the existing quarry is classified under Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act) and is subject to Environment Protection License No. 10069.

In accordance with the requirements of this licence, the scale at which the activity is carried out must not exceed the maximum scale outlined in **Table 8** below:

Table 8: Summary of EPA Licence Requirements

Scheduled Activity	Fee Based Activity	Scale
Crushing, Grinding or Separating	Crushing, grinding or separating	> 30,000 – 1,000,000 tonnes processed
Extractive Activities	Land-based extractive activity	> 50,000 – 1,000,000 tonnes extracted, processed or stored
Waste Disposal (application to land)	Waste disposal by application to land	Annual capacity

Source: EPA License 10069

Condition No. L2.2 of the existing licence allows for the following types of waste and volumes to be stored and/or processed at the premises:

- (a) Biosolids wastes from the de-inking and wastewater treatment plants at Norske Skog Paper Mill (must not exceed 10,000 tonnes in any reporting period); and
- (b) Solid concrete waste from residential, industrial and commercial sites (must not exceed 20,000 tonnes in any reporting period). The quantity of solid concrete wastes includes all waste received, stored and/or processed at the premises for recycling.

A copy of the current EPA Licence and a summary of compliance are contained as **Appendix D** to this report.

2.2.3 Existing Quarrying Activities

As outlined above, the existing quarry is currently operated in accordance with the conditions of Development Consent No's 10.2008.28631.4 (formerly 73/95) and 147/92, as well as EPA Licence No. 10069. It is reiterated that the quarry has historically been operated and used as a source of roadbase material and other construction products as part of the landowner's road construction business.

More specifically, the following activities are currently approved and undertaken on-site:

- Excavation of extractive materials from Pits 1 and 3, inclusive of the following works:
 - Site preparation works (including identification of in-situ materials and removal and stockpiling of topsoil, ground litter and vegetation);
 - Periodic blasting of in-situ material ready for excavation (Pit 3 only);
 - Excavation of materials utilising a variety of machinery and equipment such as front end loaders, excavators, graders and the like;
 - Crushing, processing and screening of materials using conveyor belts and crushing plant (Pit 3 only);
 - Stockpiling of materials on-site ready for transport;
 - Transport and haulage of materials off-site via the unsealed Winchester Lane and an unsealed internal road; and
 - Ongoing restoration/rehabilitation works to ensure a self-sustaining environment when the operation of the quarry is fully completed.
- Crushing and recycling of an annual maximum of 20,000 tonnes of solid concrete waste from residential, industrial and commercial sites (Pit 3 only);
- Disposal of an annual maximum of 10,000 tonnes of bio-solid waste ('general solid waste (putrescible)') from the Norske Skog Paper Mill Waste Water Treatment Plant and Recycled Fibre Plant, which is used as part of ongoing site rehabilitation works (Pit 3 only).

As a consequence of current quarrying and associated activities, the subject land is highly disturbed and contains a number of machinery, vehicles, ancillary site offices and stockpiles surrounding both Pits 1 and 3.

A site plan showing the location of the various quarrying activities currently occurring on site is contained in **Attachment B** and reproduced in **Figure 4** below.

It is also noted that the current development consent that applies to the land allows for an expansion of Pit 3 in a north easterly direction within an area measuring 450 metres x 300 metres with a total extraction area of 135,000m² or 13.5 hectares. It is noted however, that given current extraction rates, development has only occurred in the south west corner of this approved expansion area. Further details regarding this expansion area are discussed in Section 2.2.4 below.

2.2.4 Areas of Extraction

Rockwood Quarry is comprised of three separate extraction pits, being Pits 1, 2 and 3. A description of each of these is provided as follows:

- **Pit 1** – accessed from Gerogery Road via a Travelling Stock Reserve on the eastern portion of the subject land. This pit is used as a source of naturally occurring decomposed hill granite gravel known as ‘buckshot’, which is used in site works and road building activities or alternatively is used as an additive in the production of crushed rock at the site operator’s ‘Koowong’ Quarry. No blasting, crushing or processing of materials is undertaken in this pit.
- **Pit 2** – accessed from Winchester Lane and located within the central portions of the subject land. This pit was in the past used as a source of granite gravel during the construction of the Norske Skog Paper Mill. It has since been closed, rehabilitated and returned to grazing land; and
- **Pit 3** – accessed from Winchester Lane and located within the western portions of the subject land. This is the major source of material extracted from the site and comprises hard granite rock to produce fine crushed rock pavement material for road building purposes. Blasting, crushing and processing of materials are undertaken in this pit. Crushing of recycled concrete is also undertaken in this pit, as well as the disposal of bio-solid waste from the Norske Skog Paper Mill.

A site plan showing the location of each of these pits is contained in **Appendix B** to this report and reproduced in **Figure 4** below.

Current quarrying operations are undertaken in Pits 1 and 3. Specific details regarding each of these pits are provided below:

Pit 1

Pit 1 is accessed from Gerogery Road via a Travelling Stock Reserve and is located on the eastern portions of the subject land. This pit is used to excavate naturally decomposed granite using a 35 tonne excavator and a front end loader. The material is excavated periodically and placed into stockpiles within the southern portions of this pit, where it is loaded into truck and trailer combinations using a front-end loader.

Material excavated from this pit is used in site works and road building activities or used as an additive in crushed rock production at the operator’s ‘Koowong’ Quarry located on the Riverina Highway. This process takes place intermittently and is transported out of the pit from time to time on an as-needs basis. Some of the naturally occurring granitic gravels are screened to remove larger rocks from the source material to make granitic sand for landscaping purposes. It is noted that the materials excavated from this pit only comprise approximately 5% of the total materials excavated on-site.

No crushing or processing machinery or equipment are contained within this pit, with the only machinery contained within this area comprising several excavators, front end loader, bulldozer, as well as a mulcher used as part of the rehabilitation process. Where materials need to be processed or screened, this is undertaken within Pit 3.

The area has been highly disturbed and 'benched' into the crest of the hill with an extraction face of approximately 6-10 metres in height comprising exposed decomposed hill granite. The area has also been disturbed via the construction of internal access tracks, parking areas for machinery and vehicles, as well as the stockpiling of materials during the quarry's 45 year lifespan.

Rehabilitation works have already commenced within the north eastern portion of this pit in an area that is no longer required for extractive purposes. This area has been backfilled with previously ripped and stockpiled topsoil, as well as clean virgin fill. The land has been stabilised and shaped to provide a final landform, which will be top-dressed and planted with local native species and groundcovers consistent with the rural nature of the land.

A plan showing the existing site conditions is contained in **Appendix B** to this report and reproduced in **Figure 5**. An aerial photograph of Pit 1 showing current day arrangements is also provided in **Figure 6**.

Pit 2

Pit 2 is accessed from Winchester Lane and is located on the southern side of this accessway within the central portions of the subject land. As outlined above, Pit 2 was operated as a gravel pit and receival area for bio-solids from circa January 1981 to December 1983 as part of the initial construction of the Norske Skog Paper Mill. Since this time, this pit has been closed, covered, rehabilitated and returned to its natural state, comprising grazing land.

Pit 3

Pit 3 is located in the western portions of the site and is accessed via Winchester Lane. It is the largest of the quarry pits and the main source of extractive materials on-site. It contains the main site office and staff amenities (lunchroom, toilet and septic disposal area), as well as the majority of machinery and plant on-site (front end loaders, bulldozers, various trucks, crusher, screener etc)(see **Figures 7-9**).

Activities conducted in this pit include drilling and blasting of the source granite rock and the crushing and screening of material to produce crushed rock pavement materials. The finished material is then placed into stockpiles for later transport to construction sites where it is used for the construction of road pavements, carparks and building pads.

Periodic blasting is undertaken from time to time in this pit to break down in-situ materials, which allow it to be processed by excavators and front end loaders. Historically, blasting events have occurred approximately every two years by a sub-contractor experienced in drilling and blasting at the direction of the site operator.

Pit 3 is also the location where broken concrete is received from various demolition sites comprising demolished kerb and gutter, footpath slabs, reinforced concrete slabs and concrete footings and foundations. Under the current conditions of the EPA Licence conditions of the site, a maximum of up to 20,000 tonnes of recycled concrete can be received and processed annually.

The concrete is broken down for processing using a 35-tonne excavator and hydraulic jaws and hammers and is then processed through the crushing plant where the material is crushed and screened to produce a fine crushed rock material. Reinforcing steel is separated out from this material during the process using an electromagnet. The steel is then salvaged and put into bins where it is transported off-site for recycling by a third party.

Similar to Pit 1, a number of rehabilitation works have already commenced in the south western portions of the site as part of the staged rehabilitation of the site back to rural grazing land. Such works have included the backfilling of soil and the reshaping and top dressing of land. It is noted that as part of this rehabilitation process, liquid wastes received from the adjoining Norske Skog Paper Mill resulting from de-inking and wastewater treatment plants are also used to help achieve the final landforms on-site as part of the rehabilitation process. Under the conditions of the current EPA Licence, a maximum of 10,000 tonnes of liquid waste can be disposed of on-site annually. This liquid waste acts as a 'super phosphate' or fertiliser, which helps improve soil quality, encourages seeding root development, plant growth and regeneration on-site.

Lastly, it is also noted that Albury City Council previously approved a modification to the original quarry approval, which allowed for an expansion of Pit 3 in a general north easterly direction as shown in **Figure 10** (see Development Consent No. 10.2008.28631.1 for further details). This expansion area had dimensions of 450m x 300m and a total area of 13.5 hectares. To date, development activity has only occurred within the south west corner of this area and therefore separate approval is required to allow for development in this area.

2.2.5 Extractive material

Rockwood Quarry is generally comprised of Jindera granite and the quarry extracts two main materials, being hard granite rock and decomposed hill gravel known as 'buckshot'.

Jindera granite typically occurs at the base of the highly weathered granite at a depth of approximately 8 metres. In both the quarried and unquarried areas, the moderately to highly weathered granites are overlain by approximately 2 metres of extremely weathered granite and clayey gravel.

The harder diorite granites are blasted on a 12 metre face and benched into the hillside, whereas the decomposed gravel or granitic sands ('buckshot') are excavated on a 3-4 metre face into the hillside using 30 and 40 tonne excavators.

Hard granite rock is currently excavated from Pit 3 and is then crushed and screened to produce fine crushed rock pavement material for road building purposes.

Buckshot materials are currently extracted from Pit 1 and are used in site works and road building activities or alternatively is used as an additive in the production of crushed rock at the site operator's 'Koowong' Quarry located on the Riverina Highway.

Historically, of the total materials excavated on-site, approximately 95% of all materials excavated are hard granite rock from Pit 3, as compared to only 5% of buckshot material sourced from Pit 1. Consequently, the majority of total material excavated on-site is sourced from Pit 3.

2.2.6 Quantities of material

At present, the existing quarry operating on-site has approval to extract up to a maximum of 75,000m³ of material per annum.

The extraction of material on-site currently occurs only on an 'as needs' basis to satisfy the current operator's local road construction and earthmoving operations. In the last 10 years, the existing quarry has had an average annual certified extraction rate of 51,000 tonnes (or 23,000m³) as shown

in **Table 9**, which is well below the current (75,000m³) maximum annual extraction rate that the quarry has approval for.

Table 9: Rockwood Quarry – Annual Extraction Rates

Year	Fine Crushed Rock	Recycled Fine Crushed Rock	Beaching	Buckshot	Total (tonnes)	Total (m ³)
2008	22,612	23,643	740	8,330	55,325	24,896
2009	54,770	9,960	954	5,705	71,738	32,282
2010	40,114	13,874	1,477	5,307	60,772	27,347
2011	30,878	9,672	868	4,091	45,509	20,479
2012	23,468	5,152	2,123	6,008	36,751	16,538
2013	37,203	5,240	732	5,746	48,921	22,014
2014	25,052	6,095	907	4,386	36,440	16,398
2015	23,593	14,404	1,168	4,386	43,122	19,405
2016	31,338	8,636	1,130	3,957	46,401	20,880
2017	51,363	12,612	1,447	3,961	69,383	31,222

Source: AP Delaney & Co records, 2008-2017

2.2.7 Hours of operation and workforce

Condition No. 9 of Development Consent No. 10.2008.28631.4 and condition No. L5 of EPA Licence 10069 stipulates the following days and hours of operation:

- *Extraction – 7am to 6pm Monday to Saturday; and*
- *Loading – 7am to 6pm Monday to Saturday; and*

No haulage of product away from the quarry site is permitted on Sundays or Public Holidays.

Notwithstanding the above, given the quarry is not a commercially operating quarry, but rather used to support the current site operator's road construction business, the existing quarry does not operate on a continuous full-time basis. Based on historical maximum extraction rates (750m³ extracted per day), the quarry only operates on average approximately 3 days per month or approximately 30 days per year.

When in operation, the quarry has a minimum of three (3) staff present on-site for safety reasons.

2.2.8 Stockpiles

Rockwood Quarry utilises a number of stockpiles for the storage of materials, which are later transported off-site. Pit 1 currently contains two stockpiles of material, whilst Pit 3 contains four stockpiles of materials and a concrete storage area (stockpile).

These stockpiles generally range in size from 100m³ to 5,000m³ and are approximately 15 metres in height depending on the amount of material that is stockpiled at any given period. These stockpiles

will gradually (or rapidly) depending on demand be reduced and once almost exhausted, will trigger a need for further extraction and stockpiling for use.

The two stockpiles contained within Pit 1 are generally comprised of naturally occurring (unscreened) granite gravel and screened granite gravel whilst the stockpiles contained within Pit 3 are generally comprised of Class 2 Fine Crushed Rock (FCR) and processed recycled crushed concrete. An additional concrete storage area (stockpile) is also contained within Pit 3, which is used to store concrete waste materials that are waiting to be separated and processed.

The periodic stockpiling of material is considered necessary to allow for the most efficient operation of the site and avoids the need to continually extract small quantities of materials on a regular basis, which is considered inefficient and uneconomic.

These stockpiles have been located and positioned so as to not be seen from surrounding or adjoining lands. In particular, the stockpiles contained within Pit 1 are screened and located within a bowl and are not visible from surrounding lands. Similarly, the stockpiles contained within Pit 3 are well setback from the boundaries of the site, are screened from adjoining residents by existing ridgelines and have been located and positioned behind existing remnant vegetation and landscape screenings, which allow these stockpiles to blend into the natural landscape and terrain of the land.

These stockpiles have also been stabilised and located so as to not cause issues of sedimentation loss, erosion or run-off and are watered down during high wind periods and production to avoid the issue of dust generation, as well as any other environmental harm as detailed within this report.

2.2.9 Equipment

The following machinery and equipment is used in the current quarrying operations on-site and is typical of other extractive industries and includes:

- front end loaders;
- excavators;
- graders;
- tractors;
- bulldozer;
- various trucks;
- employee vehicles;
- crushing plant;
- screening plant;
- water cart; and
- mulcher.

It is noted that when Rockwood Quarry is not in operation, some of this equipment is relocated to other working quarries in the same ownership as the site operator.

In addition to the equipment outlined above, the subject land also contains a small separate site office with associated staff amenities (lunchroom and toilet). A septic disposal area is located to the south of the site office between the existing crushing plant contained in Pit 3.

2.2.10 Blasting and Crushing of Recycled Concrete

As outlined above, in March 1999 the former Hume Shire Council granted a modification to the original development consent which allowed for the blasting of in-situ extractive materials and the crushing of recycled concrete on-site.

Accordingly, the existing quarry crushes and stockpiles recycled concrete on-site within Pit 3 as outlined in the enclosed site plan. In accordance with Condition L2 of EPA Licence 10069, the quarry can only receive, store and process a maximum of 20,000 tonnes of solid concrete waste from residential, industrial and commercial sites during any reporting period.

A summary of the annual extraction and crushing rates of the quarry is outlined in **Table 9** above.

Similarly, Condition No's L4 and L5 of the EPA Licence contain specific conditions in relation to blasting. More specifically, condition L5.1 limits blasting activities to 10am-3pm Mondays to Fridays.

Given that the existing quarry is only used to supply materials for the existing operators' road construction business, blasting has occurred infrequently approximately every two years as outlined in **Table 10** below. On average, approximately 21,000m³ of extractive material is blasted during each blast period, which typically satisfies the demand for extractive materials for a two year period when combined with existing available in-situ materials.

Blasting is only undertaken in Pit 3, which comprises the hard rock granite and all blasting undertaken on-site is done by a sub-contractor experienced in drilling and blasting at the direction of the site operator.

Table 10: Rockwood Quarry – Blasting Records

Date of Blast	Volume Bank Cubic Metre (BCM)
28 May 1999	10,427
26 May 2000	20,000
5 October 2001	20,000
23 March 2004	27,500
21 April 2006	12,325
4 April 2008	32,883
10 December 2009	21,850
28 January 2010	12,680
7 February 2013	36,200
1 September 2015	16,450
11 May 2017	20,619
	230,944

Source: AP Delaney & Co records, 1999-2017

2.2.11 Road Haulage and Transport

As part of the ongoing operation of the site as a quarry, extractive materials which have been processed are transported off-site for use in local road construction projects. In addition, recycled concrete from local construction and demolition projects are also transported to the site for crushing and re-purposing.

Primary vehicular access to the site is derived from the unsealed Winchester Lane, which intersects with the adjoining sealed Gerogery Road located to the east and is used to access Pit 3. A secondary unsealed access road also exists approximately 1.2 kilometres further south towards the Nexus industrial estate via an existing Travelling Stock Reserve (TSR) that is used to access Pit 1.

Although the existing quarry has approval to extract up to a maximum of 75,000m³ of materials per annum, based on historical extraction rates, the quarry has operated well below this maximum capacity. As a consequence, the average number of truck movements per day between 2008 and 2016 (based on a truck and trailer combination carrying 33 tonnes of material operating 312 days per annum and 8 hours per day) was only 4.81 truck movements per day.

As both roads are unsealed and are shared by a number of different road users, a 40km/hr speed limits exists along this roadway for safety reasons, as well as to minimise opportunities for the generation of dust. A radio system is used by transport drivers for safety reasons and during periods of hot, dry weather, the access road is watered down via an existing water cart on-site. In addition, the site operator has planted a number of dense landscape screening trees along this roadway to further limit issues of dust, as well as to respond to a number of previous concerns raised by adjoining residents.

It is noted that the quarry has operated for the past 45 years without any road/traffic safety incidents.

2.2.12 Waste Disposal

In addition to current quarrying activities conducted on-site, the subject land also has approval for the disposal of wastes from the de-inking and wastewater treatments plants from the adjoining Norske Skog Paper Mill (classified as 'general solid waste (putrescible)'). In accordance with the EPA licence conditions that currently apply to the subject land, a maximum of 10,000 tonnes of waste material is permitted to be disposed of on-site in any reporting period.

At present, the wastes are transported to the subject land and disposed of in a waste disposal area located in the south west corner of Pit 3 in a retired quarry pit (see **Figure 11**). Materials are transported via truck and trailer and placed at the edge of the tipping face on the eastern side of the waste disposal area, where they are then pushed into the pit via a front end loader.

The disposal of this waste only occurs intermittently when weather precludes the transportation and disposal of this material to other farmlands and paddocks located within a 20 kilometre radius of Norske Skog. The composition of this waste material contains a number of nutrients including phosphorous, carbon and lime, which are used in land application processes that help improve the quality of soils. The transport and disposal of this waste material is covered by a separate Development Consent (see DA 147/92) and a separate EPA licence and Resource Recovery Order (RRO) and Exemption obtained by Norske Skog from the EPA.

Under the conditions of this approval, a number of cut-off drains and a leachate dam were required to be constructed to protect natural drainage lines on-site, as well as the preparation of a hydrogeological study and groundwater monitoring program to ensure that the groundwater does not become contaminated. The applicant was also required to install 12 piezometers (6 deep and 6 shallow) around the site to monitor the groundwater, as well as undertake annual reporting and independent environmental audits.

It is noted that of the total 57,900 tonnes of waste that was generated and disposed of in 2017 by Norske Skog, only 3,903 tonnes of it was disposed of to Rockwood Quarry. It is reiterated that the disposal of this waste on-site is used as part of the rehabilitation of an exhausted quarry pit via both the filling and reshaping of land and its application on soils. Any run-off that is generated from this waste disposal area is collected in a leachate dam located on the western side of the disposal area and is then applied to vacant farmland located to the north west of the disposal area during summer. The application of this leachate on the soil acts as a 'super-phosphate' or fertiliser, which helps improve soil quality, encourage seeding root development, plant growth and regeneration on-site.

Since the initial disposal of this waste in 1983, there have been no recorded environmental incidents, namely through environmental contamination, health or amenity impacts such as odour. It is noted that the waste material does not create any adverse impacts with regards to odour with only low levels of odour limited to when this material is disturbed during disposal on-site.

Due to the low levels of waste disposed of on-site, the quality and type of waste, its large separation distance to surrounding neighbours and the continued ongoing monitoring and reporting regimes, there have been no complaints received with regards to odour from surrounding neighbours since waste disposal operations commenced on-site.

To date, the proponent has dutifully complied with the conditions of the existing Development Consent and EPA Licence and exemptions that apply to the disposal of this waste with both annual reporting and independent audits confirming that the development has operated within its approved limits and has not caused any environmental harm (see **Attachment D**).

Unlike the approval for the quarry, the approval for the disposal of bio-solid waste on-site is open ended and remains valid ongoing. Therefore, no further approvals are required for these activities.

2.2.13 Rehabilitation

Rehabilitation works are periodically undertaken and are staged commensurate with when an area becomes exhausted or is no longer required. More specifically, rehabilitation works have occurred in the northern portion of Pit 1 and the south western portion of Pit 3 in areas that are no longer required for extractive industry purposes.

These rehabilitation works have generally comprised the removal of all surface and ground infrastructure, the backfilling of previously excavated and stockpiled topsoil, importation of clean virgin fill and the stabilisation and levelling of batters to inform the final landform. Furthermore, these areas have been revegetated with local indigenous plant species, including ground covers, understorey and overstorey species.

As outlined in Section 2.2.4 above, former Pit 2 has already been closed and rehabilitated back to its natural state, being rural farmland. Accordingly, this closed pit provides an example of the final landform that will be achieved on-site within the remaining operating pits.

2.3 Surrounding Context

The surrounding area is mixed in nature and adjoins a variety of different land uses.

To the north, north-east and north-west of the subject land are a number of residential lifestyle properties contained within the Himalaya and Claremont rural residential estates. These properties are zoned R5 Large Lot residential under ALEP 2010 and generally range in size from 2 hectares to 4 hectares, respectively and were approved by the former Hume Shire Council in the early 2000s, well after the establishment of the existing quarry. A plan showing the location of the existing operating quarry and its proximity to these surrounding residential dwellings is shown on the 'Sensitive Receptors Map' (see **Appendix B** to this report).

The subject land adjoins a Crown Lands Travelling Stock Reserve to the east, which is located on the western side of Gerogery Road to the east. The remainder of the Nine Mile Hill ridgeline exists on the opposite side of Gerogery Road and is also owned by Crown Lands. This area is heavily vegetated and is also a bushfire hazard source.

To the south and south-east is industrial zoned land, which forms part of the NEXUS Industrial Hub. Contained within this industrial precinct are a number of large-scale industrial operators including the Norske Skog Newsprint Mill, Overall Forge, as well as, the Ettamogah Intermodal Hub given the areas' location alongside the Hume Highway and Great Southern Railway Line. Land located immediately to the south is currently under construction for a council-owned industrial subdivision (NEXUS).

Land to the south-west is currently used by the Twin Cities Model Aero Club for recreational activities, whilst land further to the south-west is also being used for the purposes of another extractive industry (Burgess' Quarry).

It is noted that this extractive industry, is operating at a much more intensive scale as compared to the current operations being undertaken on the subject land. This quarry has an annual average extraction rate of approximately 400,000 tonnes (180,000m³) output per annum. Products produced from this site include aggregate suitable for concrete sealing applications, as well as road base material for road and bridge constructions. At present, this quarry supplies quarry products to Wagga Wagga City Council, Albury City Council, Lockhart Shire Council, Greater Hume Shire Council, Indigo Shire Council and Corowa Shire Council.

Land to the west of the subject land is rural-zoned and generally limited to the broadacre grazing of cattle. Notwithstanding, a small parcel of land located only approximately 500 metres to the west of current quarrying operations (Pit 3) is used by the Albury Wodonga Clay Target Club for recreational activities. It is noted that this facility is accessed via a Right of Way over the subject land and shares the same internal driveway accessway (Winchester Lane), which is used by the existing quarry. This facility has been operating from this location for over 10 years with little to no incidents or conflicts with the existing quarrying operations on-site, as they generally operate at different times of the day and week.

Accordingly, the ongoing operation of the subject land as a quarry and associated activities will not adversely affect the surrounding land uses and proposes to continue operating as it has done so for the past 45 years. In doing so, the site will continue to act as a buffer between industrial areas to the south and rural residential activities located to the north.

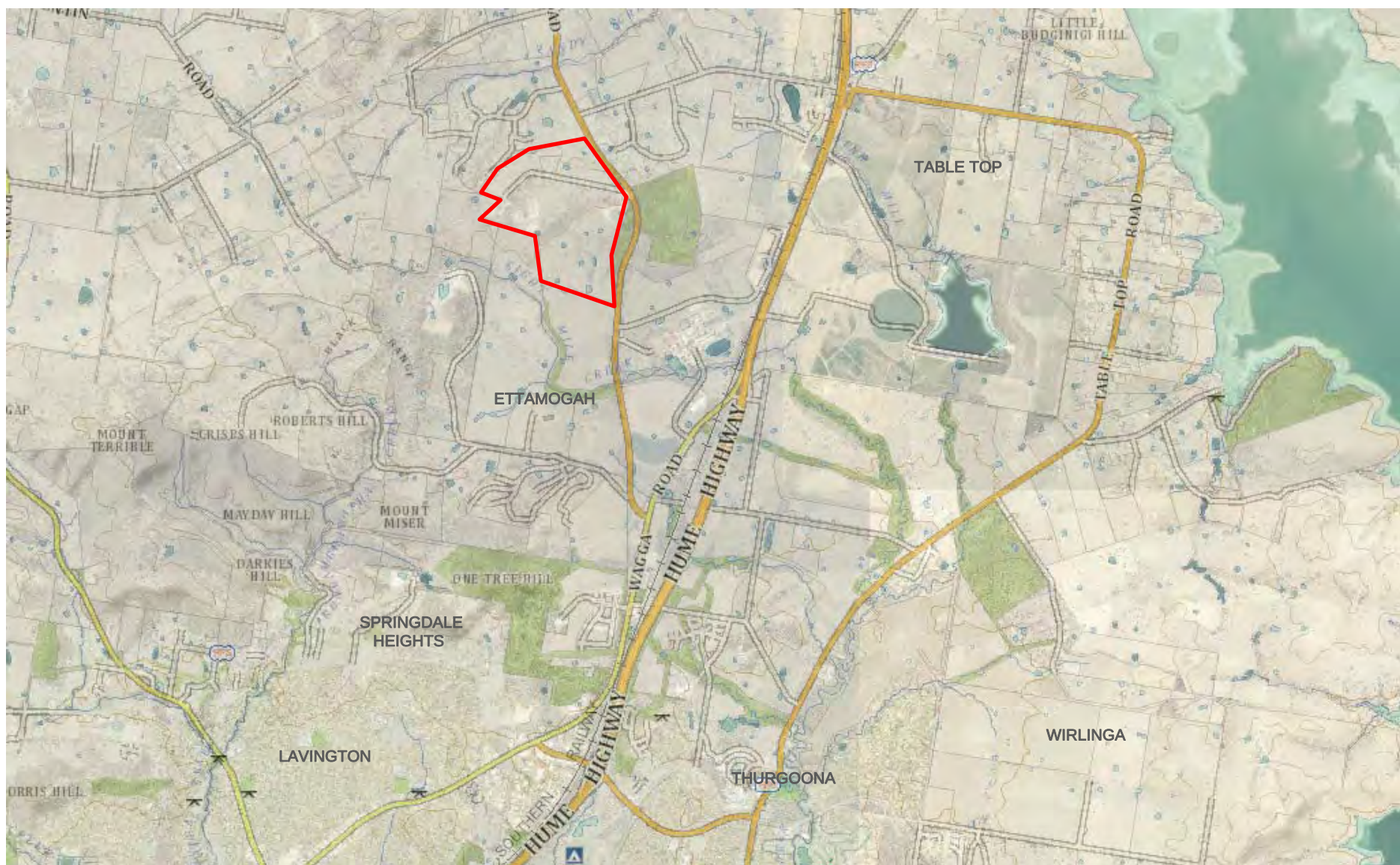


Figure 1 Location of the subject land (red outline) within the context of the broader surrounding area

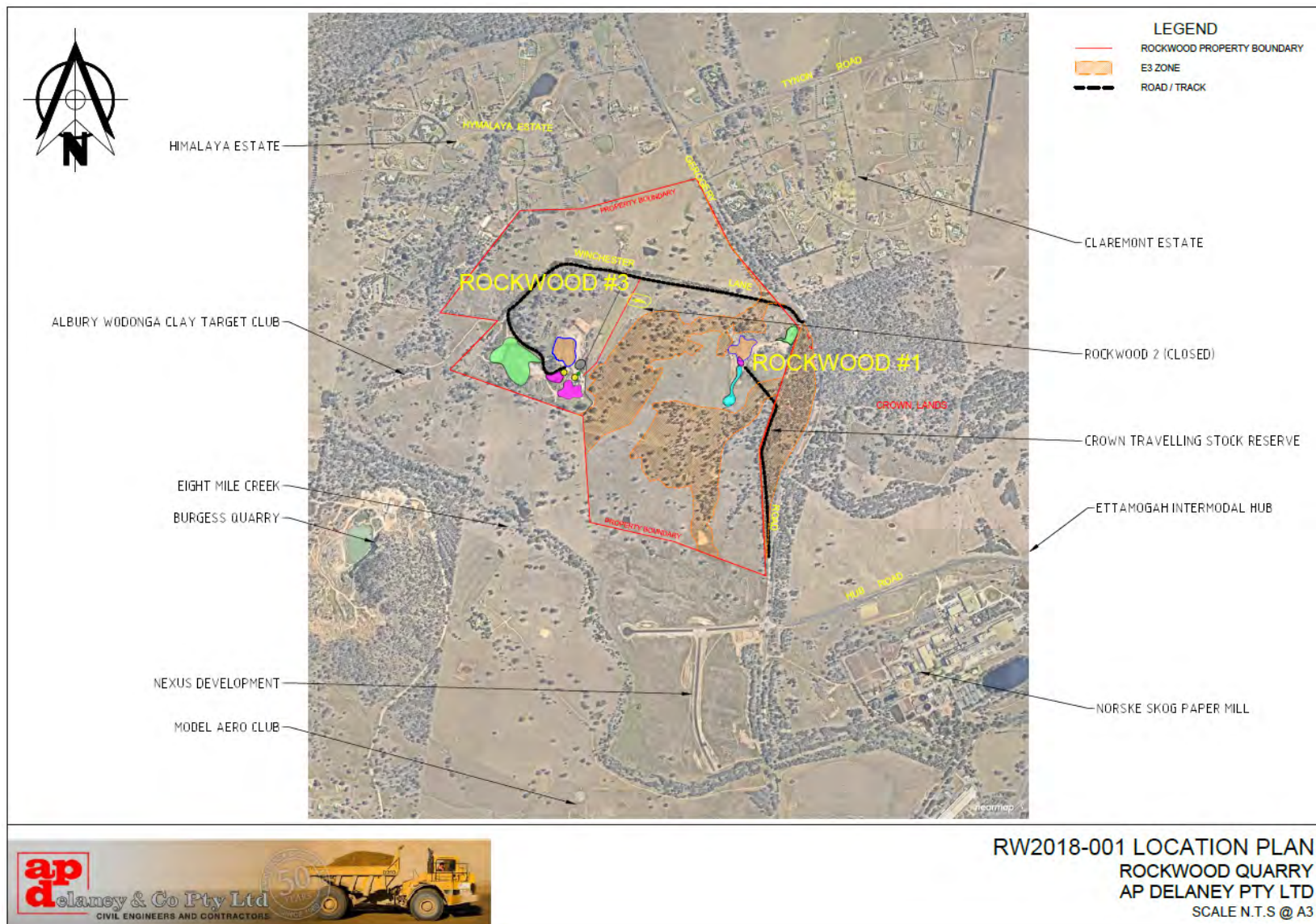


Figure 2 Location of the subject land (red outline) within the context of the surrounding properties



Figure 3 Aerial photograph of the subject land (red outline) and surrounding properties*

*Note: the subject land does not include No. 96 Winchester Lane, Table Top

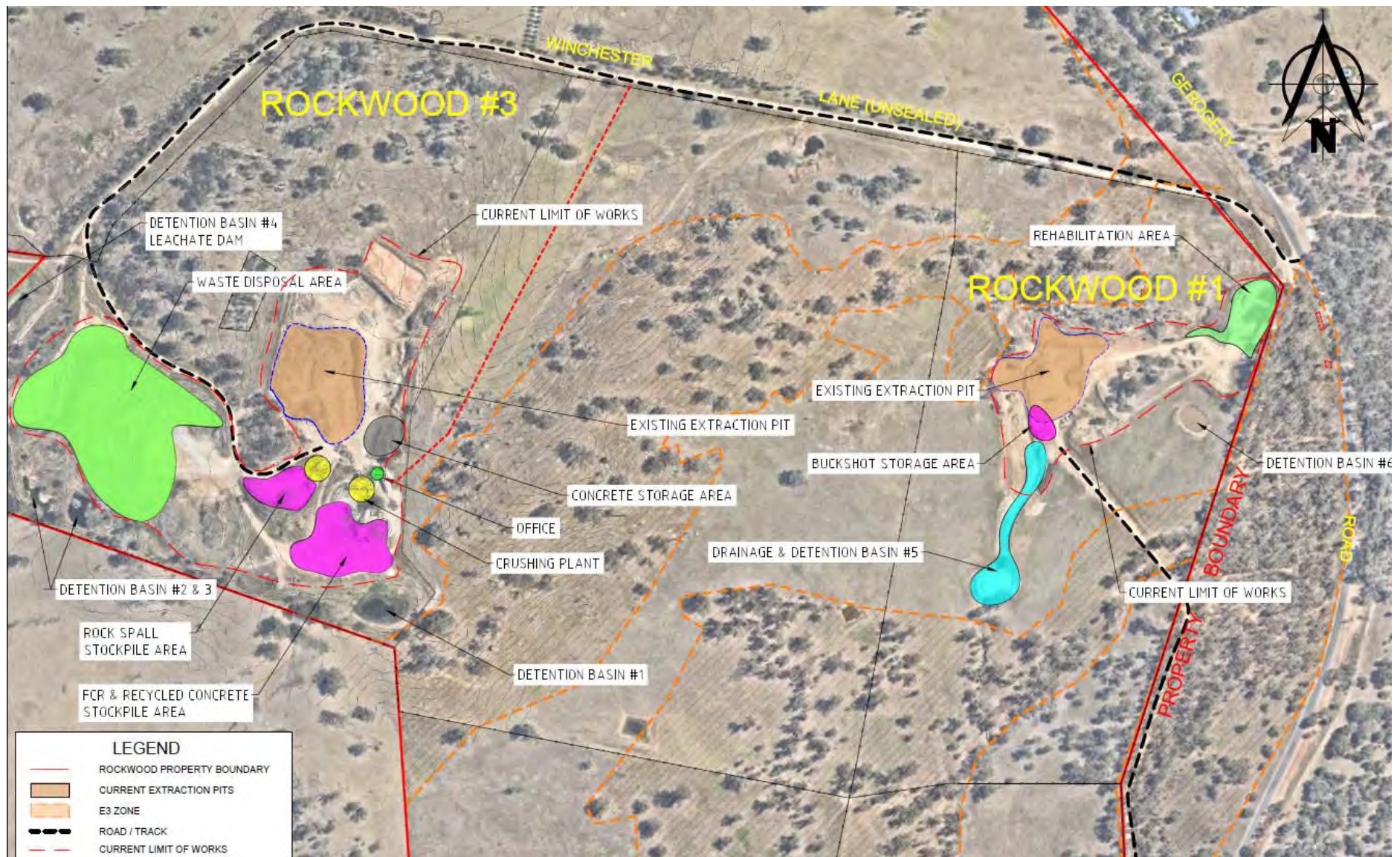


Figure 4 Site Plan (Existing) showing the location of existing Quarry Pits and site activities



Figure 5 Aerial photograph of Pit 1 (December 2018)(Source: Nearmap, 2019)

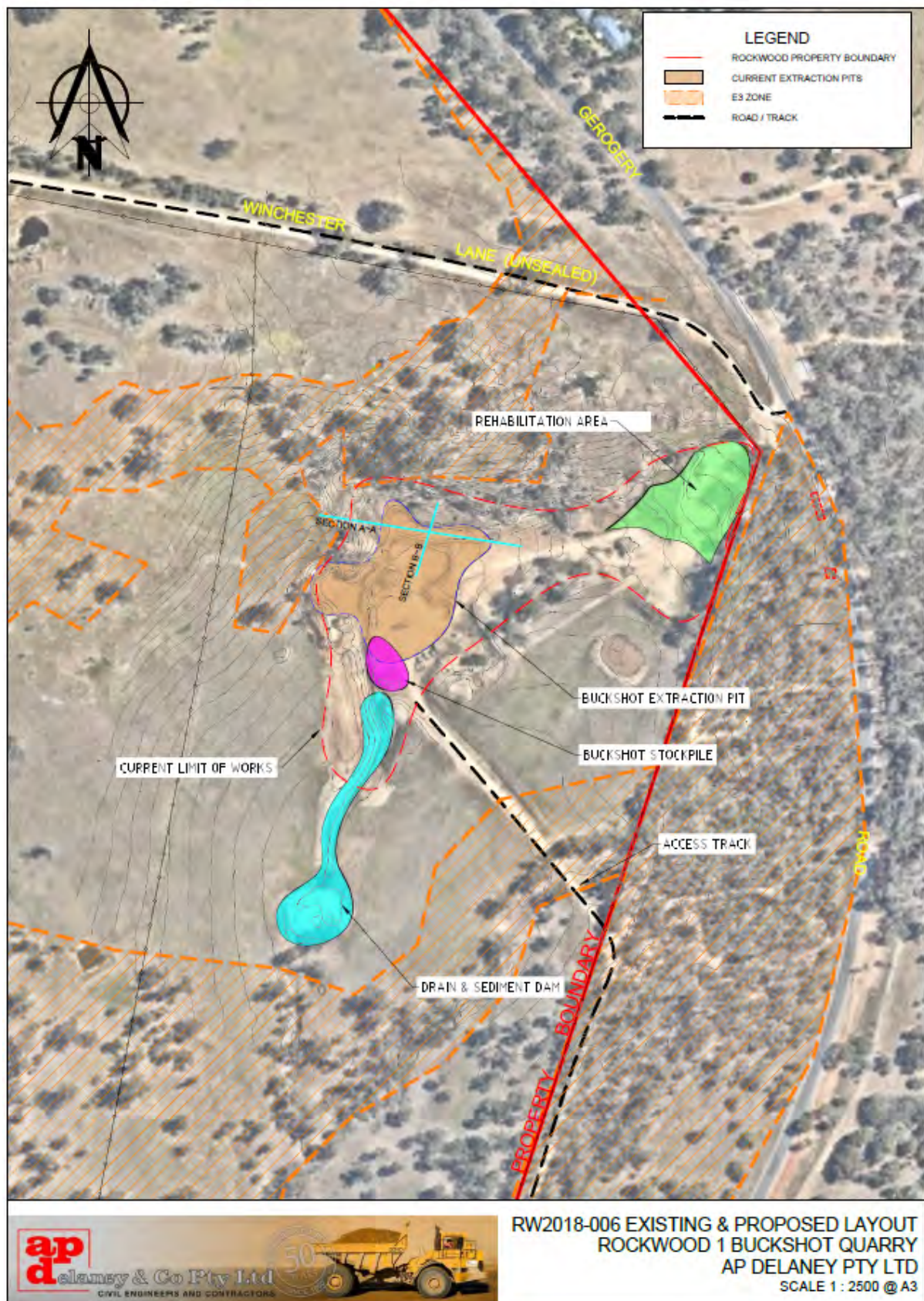


Figure 6 Site Plan (existing) of Pit 1 showing existing activities



Figure 7 Aerial photograph of Pit 3 and associated works including waste disposal area (December 2018)(Source: Nearmap, 2019)

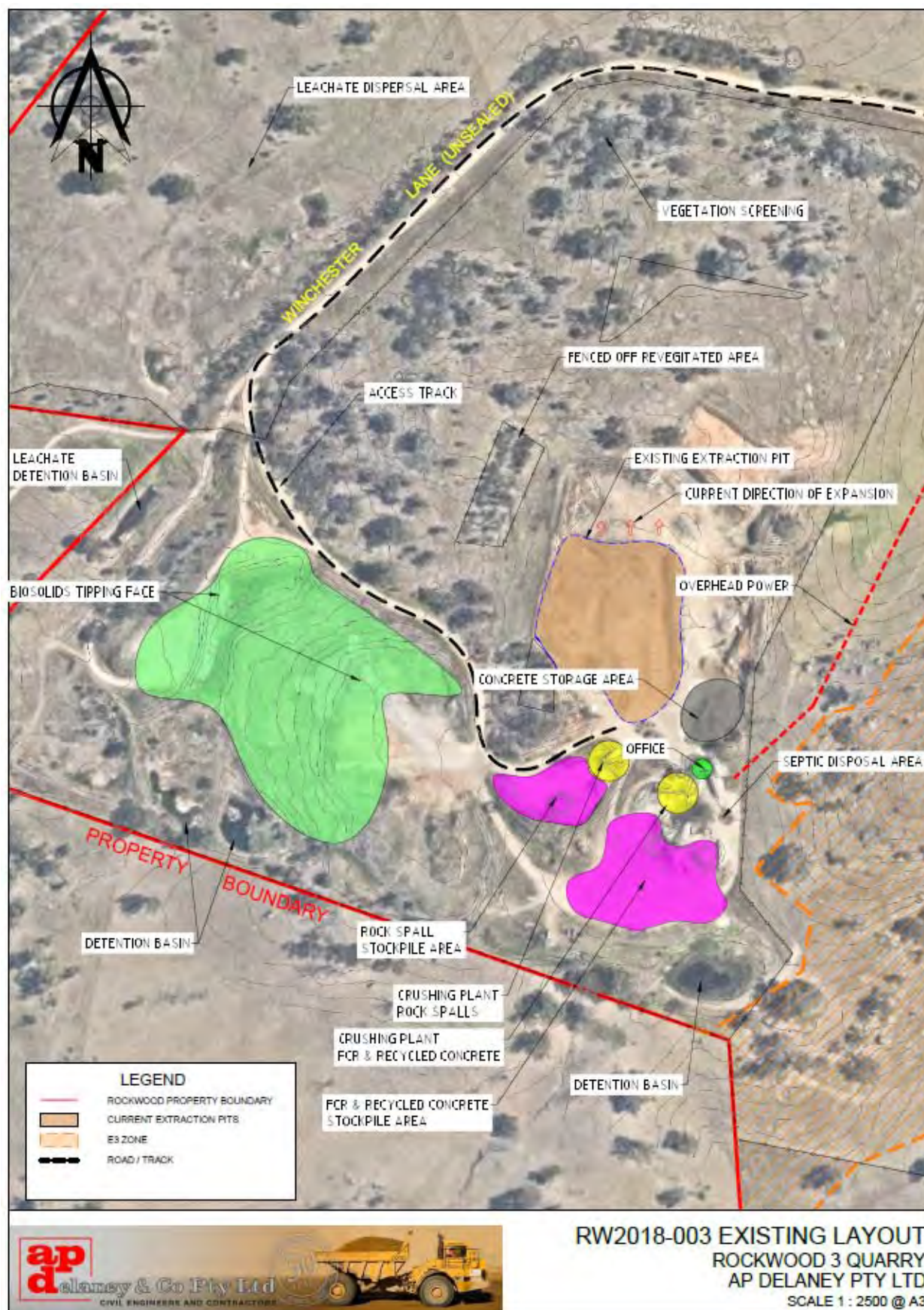


Figure 8 Site Plan (existing) of Pit 3 showing existing activities



Figure 9 Aerial Photograph of Pit 3 showing existing activities

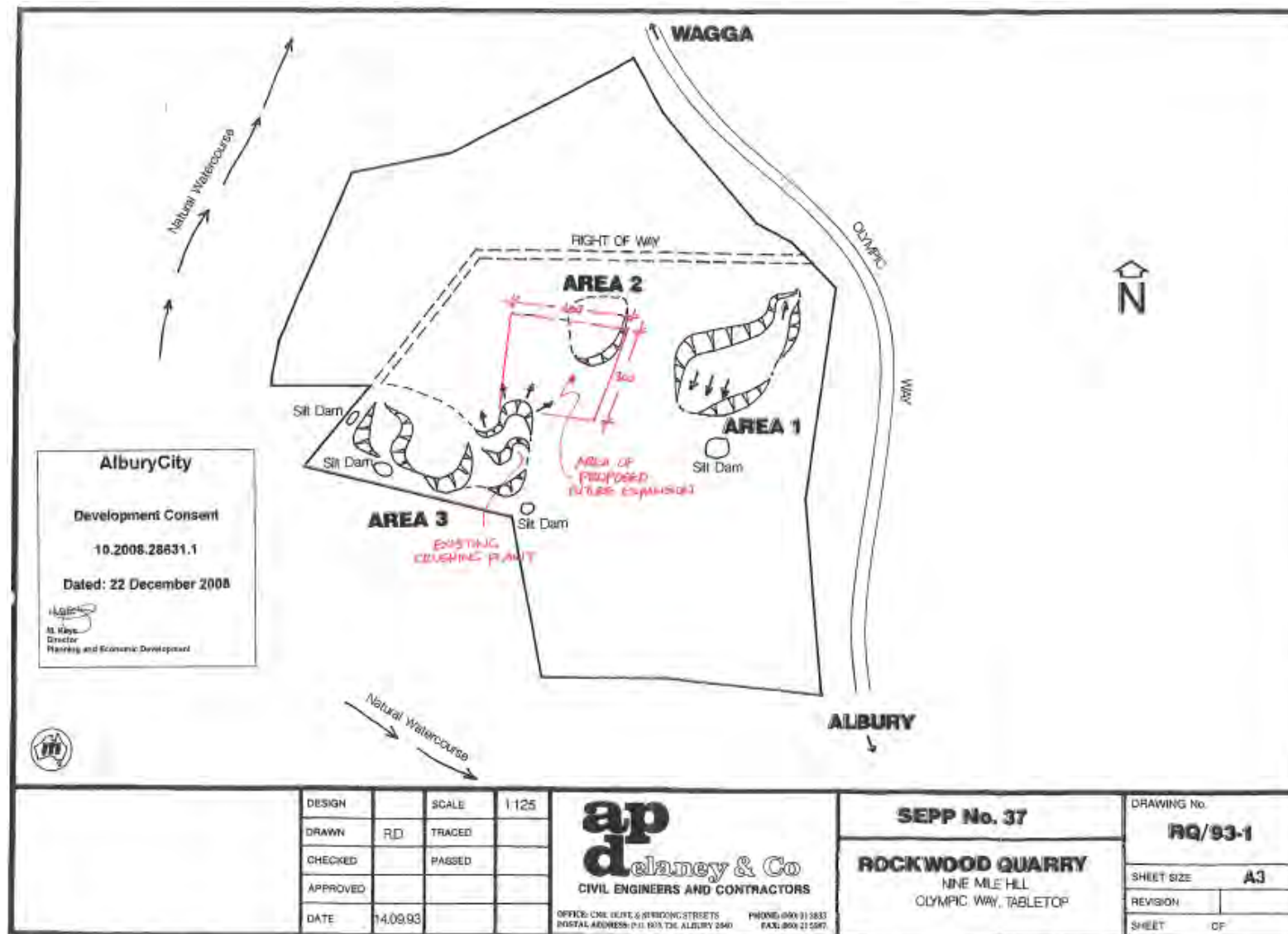


Figure 10 Approved Quarry Expansion of Pit 3 as contained in Development Consent 10.2008.28631.1 dated 22 December 2008

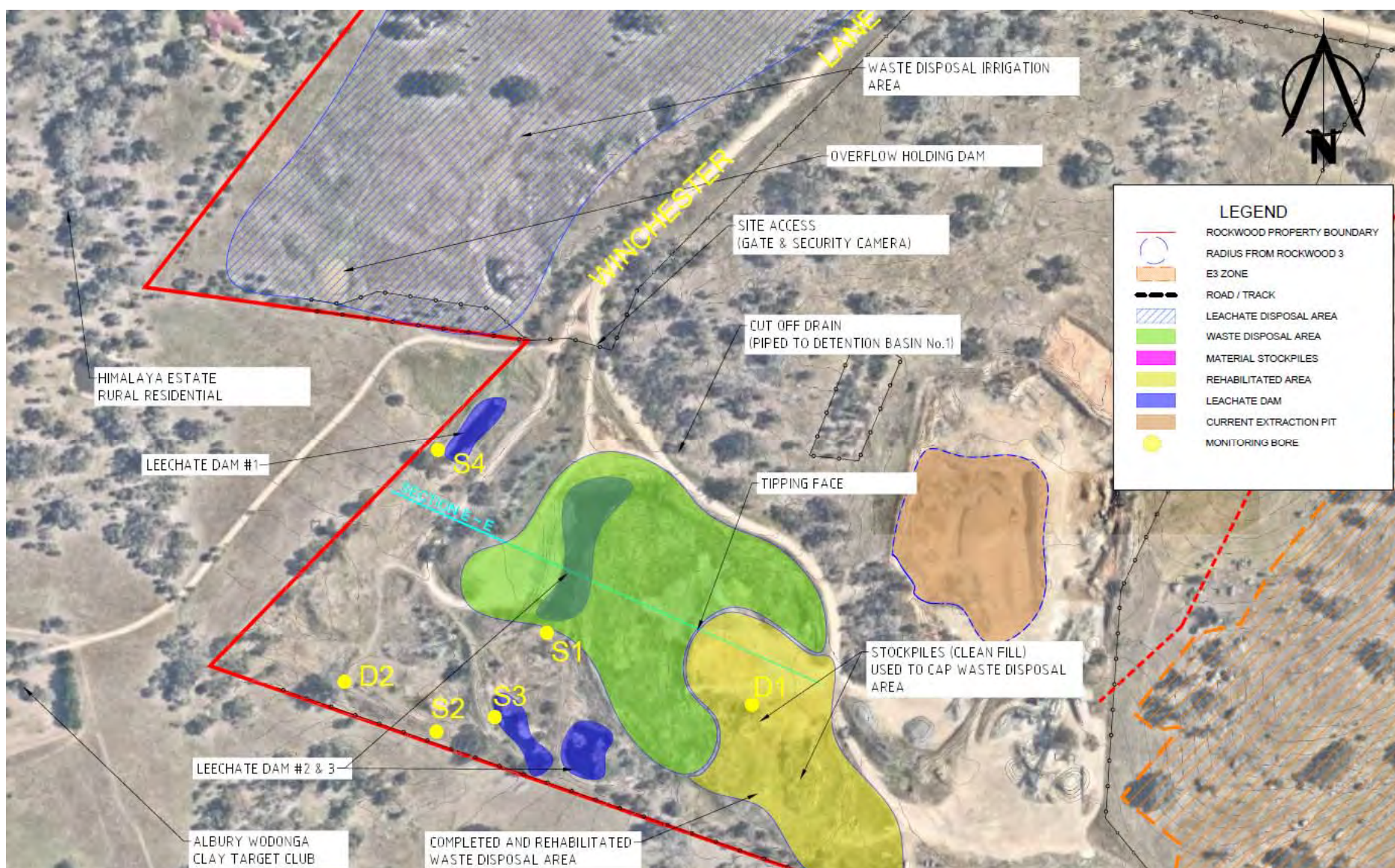


Figure 11 Approved waste disposal area

2.4 Site & Surrounding Context Photographs



Figure 12 View of existing site entrance to Winchester Lane from Gerogery Road.



Figure 13 Vehicle entrance to Pit 1 as viewed from adjoining Travelling Stock Reserve.



Figure 14 Example of site rehabilitation works occurring within Pit 1



Figure 15 Detention dam located to the south of Pit 1.



Figure 16 View of waste disposal area and detention dam located to the south west of Pit 3 (approved under separate approval that remains valid ongoing).

Note: the soil has a blue colouring due to the de-inking process from Norske Skog.



Figure 17 Pit 3 extraction area looking west.



Figure 18 Pit 3 extraction area looking south.



Figure 19 Existing stockpiles contained within Pit 3



Figure 20 Crushing and screening plant contained within Pit 3.



Figure 21 Existing detention dam located to the south of Pit 3.



Figure 22 View looking south west from the subject land towards Burgess' Quarry.



Figure 23 View of example Norske Skog biosolid material used in the rehabilitation and filling of the subject land (approved under separate approval that remains valid ongoing).

Note: this photograph shows the use of the waste on nearby paddocks where it is used as a land application, which is covered by a separate Resource Recovery Exemption from the NSW EPA.



Figure 24 View of existing roadside regrowth vegetation (indicated) located immediately adjacent to Gerogery Road to be pruned and/or removed (by the road authority) so as to achieve minimum sight line requirements.



Figure 25 View of existing Gerogery Road road embankment to be cut back and battered so as to achieve minimum sight line requirements.

Note: this road embankment was previously disturbed, battered and reshaped as part of the construction of Gerogery Road.

3. Description of Proposal

3.1 Project Summary

The proposed development seeks approval for an extractive industry, the crushing of recycled concrete and associated works on land currently used for the purposes of an extractive industry ('Rockwood Quarry'). The current application has been prepared as the current approval is due to expire on 17 September 2019. Accordingly, a subsequent Development Application (and associated EIS) has been prepared to allow for the ongoing use of this land as a quarry.

More specifically, this application seeks approval to undertake the following:

- Approval for an extractive industry within existing approved Pits 1 and 3 for a 30-year period, inclusive of the following works:
 - Site preparation works (including identification of in-situ materials and removal and stockpiling of topsoil, ground litter and vegetation);
 - Periodic blasting of in-situ material ready for excavation;
 - Excavation of materials utilising a variety of machinery and equipment such as front-end loaders, excavators, graders and the like;
 - Processing and screening of materials;
 - Stockpiling of materials on-site ready for transport;
 - Transport and haulage of materials off-site via Winchester Lane; and
 - Rehabilitation and revegetation work to ensure a self-sustaining environment when the operation of the quarry is fully completed.
- Approval for a maximum annual extraction of crushed rock of 100,000m³ per annum to cater for the long-term needs of the quarry (Note: the existing quarry has approval for 75,000m³);
- Expansion of existing Pit 3 in a north easterly direction (12.67 hectares) consistent with a previous approval issued for the site;
- Crushing and recycling of an annual maximum of 20,000 tonnes of solid concrete waste from residential, industrial and commercial sites (Pit 3 only);
- Earth embankment/reshaping works along Gerogery Road to improve current sight lines for vehicles exiting Winchester Lane;
- Removal of 19 trees with the proposed Pit 3 area;
- Removal of 1.25 hectares of vegetation that meets the listing criteria as the Box Gum Woodlands threatened ecological community and 2.4 hectares of native vegetation (grasslands) zoned E3 Environmental Management within the proposed Pit 3 area;
- Removal and/or pruning of several trees within the adjoining Gerogery Road, road reserve (by the relevant road authority), which are currently obscuring views from this intersection; and
- Rehabilitation, revegetation and maintenance of RU2 Rural Landscape zoned land in accordance with the requirements of a Vegetation Management Plan to ensure that the proposed activities will not have an overall adverse environmental impact.

It is noted that separate approval for the transport and disposal of liquid wastes from the adjoining Norske Skog Paper Mill is not required in this instance, as it is already operating under a separate approval (see development consent 147/92).

3.2 Description of Works

The proposed development involves the use of the land as an extractive industry consistent with the current use of this land ('Rockwood Quarry'). The current application has been prepared as the current approval is due to expire on 17 September 2019.

More specifically, this application seeks approval for the ongoing extraction of materials from the existing approved Pits 1 and 3 for a period of 30 years with a maximum annual production of crushed rock of 100,000m³ per annum. The application also seeks approve to expand Pit 3 in a north easterly direction consistent with a previous approval issued for the site.

It is noted that the subject application does not seek to alter the boundaries of the currently approved extraction area nor change any existing operating procedures or methods currently used on-site, but rather seeks to reapply to undertake these activities as the current approval is due to expire. The purpose of the application is to continue quarrying activities on-site for the supply of crushed rock material for the current site operator's local road construction and earthmoving business consistent with what has been occurring on the subject land for the past 45 years.

Whilst it is acknowledged that the maximum annual production of crushed rock is proposed to increase from 75,000m³ to 100,000m³ per annum, based on historic extraction rates, it is unlikely that the current level of extraction will substantially increase in the interim as a result of this application. The reason for the proposed increase is to ensure that the existing quarrying operations can satisfy any increased or peak demands for excavated materials in the Albury Wodonga region into the future without the need to formally modify any approvals for the site.

It is reiterated that the proposed use of the land is not for a commercial quarry as it does not supply materials to the general public or other users in the construction industry, but rather is limited to the current site operators' road construction business requirements.

Notwithstanding the above, the subject EIS has been prepared based on an assumed maximum annual extraction rate of 100,000m³ being achieved, which demonstrates the 'worst case scenario'. The maximum extraction rate also provides greater flexibility should the site operator decide to begin supplying materials to the general public or increase current output.

Based on previous investigations (bore holes) of in-situ resource materials available on-site, there is enough material within the quarry to satisfy local demand for over 50 years with in-situ granite material available to a depth of 130 metres. Over time, the site will be gradually rehabilitated as areas become exhausted of materials. At the completion of quarrying activities, the site will be fully rehabilitated in the form of grassed paddocks, giving the site a similar appearance to its surrounding lands and the previously rehabilitated Pit 2.

The development is also seeking approval to process and crush up to an annual maximum of 20,000 tonnes of solid concrete waste from residential, industrial and commercial sites within Pit 3. This activity is currently undertaken on-site and the intention is that this activity will continue into the future in accordance with current day requirements. Accordingly, an amended EPA Licence will also need to be obtained for the continuation of this activity, as well as the ongoing operation of the site as a quarry.

As a consequence of the proposed works and following the completion of a traffic impact assessment, it has also been identified that a number of earth embankment works will need to be undertaken to the Gerogery Road road reserve on the northern side of Winchester Lane, so as to achieve relevant sight distance requirements.

Furthermore, a number of trees and native grasses will need to be removed as part of the proposed expansion area of Pit 3. In addition, several trees (re-growth), have also been identified as requiring removal and/or pruning by the relevant road authority within the adjoining Travelling Stock Reserve located to the south of the Winchester Lane intersection, so as to also achieve the relevant sight distances to the south.

In recognition of the native vegetation removal works associated with the proposed extractive industry, an area of approximately 15 hectares of RU2 Rural Landscape zoned land will be revegetated and protected ongoing to ensure that the development does not have a long term adverse environmental impact. These works will be undertaken in accordance with a Vegetation Management Plan (VMP) that has been prepared for the site (see **Attachment I**).

Further details regarding individual components of the works are discussed in the following sections.

A site plan showing the proposed areas of extraction is contained in **Appendix B** and reproduced in **Figure 26** below.

3.3 Area of Extraction

The application seeks approval to continue extracting materials from within Pits 1 & 3 of Rockwood Quarry, which already currently exist on-site.

In addition, the development also seeks approval to expand the existing Pit 3 in a generally north east direction, consistent with a previous development consent issued for the site (see condition No. 5 of Development Consent No. 10.2008.28631.1). This expansion area will have dimensions of approximately 450 metres x 300 metres with a total area of 126,700m² or 12.67 hectares.

Quarrying activities conducted within this pit are proposed to be undertaken to a depth of RL 323-329, and will be benched/stepped down to the proposed quarry pit floor with an overall depth of excavation of 30 metres below current ground level. Accordingly, the total available volume of raw materials will be approximately 4,050,000m³, which is well in excess of the total amount of resources required as part of this application (3,000,000m³ at maximum extraction).

Notwithstanding the above, it is noted that the boundaries of this previously approved expansion area have been revised following the completion of a Biodiversity Assessment and Aboriginal Cultural Heritage Assessment for the site, so as to avoid areas containing Threatened Ecological Communities, comprising Grassy Box Gum Woodlands and native grasses, as well as an area of intangible heritage significance.

It is clarified that the subject application does not seek approval to expand the current boundaries or development footprint of Pit 1. This is due to the amount of resources that are currently still available within this existing quarry pit, as well as the comparatively lower levels of extraction undertaken from this pit. The intention is that this quarry pit will maintain its current development footprint, but will be excavated directly downwards an additional 6 metres in depth.

A plan showing the area of proposed works and cross sections of the proposed excavation works are contained in **Attachment B**. A copy of the proposed site plan is reproduced in **Figure 26** below.

3.4 Quantities of Materials

At present, the existing quarry on-site has approval to extract up to a maximum of 75,000m³ of material per annum. The subject proposal seeks approval to extract up to a total maximum of 100,000m³ per annum.

As outlined in **Section 3.3** above, the area of extraction will not increase from that previously approved as there is still approximately more than 50 years worth of material in-situ that can be extracted on-site.

The extraction of material occurs on an 'as needs' basis to satisfy the current operator's local road construction and earthmoving operations. In the last 10 years, the existing quarry has had an average annual certified extraction rate of 51,000 tonnes (or 23,000m³) as shown in **Table 9**, which is well below the current (75,000m³) and proposed (100,000m³) maximum annual extract rate.

Whilst it is acknowledged that current extraction rates are well below the proposed 100,000m³ per annum sought by this application, an increase in the annual production rate has been sought to ensure that existing quarrying operations can satisfy any annual increases or peak future demands for excavated materials in the Albury Wodonga region without the need to formally modify the approval.

Accordingly, in order to identify the full extent of all potential impacts, this EIS has been prepared on the basis of an annual maximum extraction rate of 100,000m³ being achieved each year, which is considered to be the 'worst case scenario'.

Based on a proposed lifespan of 30 years, this would equate to the total extraction of 3,000,000m³ worth of materials that could be excavated over the life of the quarry.

3.5 Hours of Operation & Workforce

The proposed hours and days of operation for the development will remain the same as the current development consent and EPA License 10069 that applies to the site as outlined as follows:

- Extraction – 7am to 6pm Monday to Saturday;
- Loading – 7am to 6pm Monday to Saturday; and

No works including the extraction, crushing, loading or transporting of materials off site or the disposal of waste materials on-site are proposed on Sundays or Public holidays.

As outlined in Section 2.2.7, the current quarry does not operate on a continuous full-time basis and has historically only operated on average approximately 3 days per month or approximately 30 days per year based on a maximum daily extraction rate of 750m³ and an annual extraction rate of approximately 22,500m³ per annum.

Based on an increased maximum annual extraction rate of 100,000m³ and assuming maximum extraction is achieved each year, the quarry will operate approximately 133 days per year or 11 days per month. This figure is based on retaining the maximum daily extraction rate that is currently achieved given that the site operator does not intend on utilising more equipment, machinery or workers on-site. Notwithstanding, should the daily maximum extraction rate increase beyond current rates, the number of days that the quarry will operate will be reduced.

When in operation, the quarry typically has a minimum of three (3) workers present for safety reasons and it is expected that this will continue into the future based on current extraction procedures.

3.6 Equipment

The number and type of machinery will not increase above current day operations as the proposed development will maintain the same daily extraction rate/output, but will operate more days of the year (i.e. same production output undertaken across more days). As outlined in Section 2.2.9 of this report, the development will utilise the following machinery and equipment:

- front end loader;
- excavator;
- graders
- tractors;
- bulldozer;
- various trucks;
- employee vehicles;
- crushing plant;
- screening plant;
- Water cart; and
- mulcher.

Similar to current day operations, when Rockwood Quarry is not in operation, some of this equipment will be relocated to other working quarries in the same ownership of the site operator.

It is also noted that there will be no change to the existing site office or septic disposal area as the level of workforce on-site will not increase, but rather will be undertaken across a greater number of days.

3.7 Stockpiles

The proposed development will maintain the existing stockpile areas on-site, comprising two stockpiles in Pit 1 (naturally occurring unscreened granite) and four stockpiles in Pit 3 (Class 2 Fine Crushed Rock (FCR) and processed recycled crushed concrete), as well as an additional concrete storage area (stockpile) also contained in Pit 3.

The size of these stockpiles will remain the same as current day operations and will generally range in size from 100m³ to 5,000m³ and are approximately 15 metres in height depending on the amount of material that is stockpiled at any given period. These stockpiles will gradually or rapidly (depending on demand) be reduced and once almost exhausted, will trigger a need for further extraction and stockpiling for use.

As outlined above, the development does not propose to increase the number of stockpiles on-site, but rather will exhaust and replenish these stockpiles more often assuming maximum extraction and days of operation.

The stockpiles will retain their current footprint and have been previously located and positioned so as not to be seen from surrounding or adjoining lands. These stockpiles will continue to be stabilised and located so as to not cause issues of sedimentation, erosion or run-off, as well as any other environmental harm as detailed within this report.

3.8 Development Schedule

The process by which materials are won and processed may be separated into three development stages – site preparation, extraction and processing and road haulage and transport.

3.8.1 Site Preparation

The site preparation stage begins with the identification of in-situ materials via the drilling of test bores within the proposed area of expansion. Upon confirmation of the presence of extractive materials, water and soil control structures will be implemented via the installation of sediment basins, spoon drains and silt traps. A diversion bank will be constructed up slope of the intended excavation area and will be maintained to prevent erosion and the deterioration of water quality. This will be used to direct water away from the area of disturbance towards clean water gullies or natural depressions that will be stored down slope for re-use in the re-vegetation process.

Areas of vegetation to be retained will be identified via markers and fenced off from the area of works with the remaining vegetation to be cleared from within the surveyed area using a dozer for grasses, undergrowth and tree stumps and a chainsaw for trees and larger branches. Prior to works commencing, these trees will be inspected for native wildlife and if necessary, removed and relocated. The vegetation debris will then be stockpiled down slope along the length of the proposed extraction area, which will then be later used as part of the rehabilitation stage. Larger trees or hollow bearing logs will also be retained and placed within adjoining environmental lands to provide ongoing habitat for local fauna species.

Ripping and stockpiling of topsoil will be undertaken using excavators and will be staged in accordance with demand. This material will then be either used in current day rehabilitation works or stockpiled as part of future rehabilitation works. Water management control mechanisms will be put in place to ensure all surface water runoff is controlled and directed away from these temporary stockpile areas to sedimentation traps, with all discharges from these traps occurring in accordance with Councils' requirements.

The above site preparation works will be undertaken in stages so as to ensure that the area of disturbance is minimised, but the required amount of materials can still be excavated.

3.8.2 Extraction and Processing

The extraction process will follow existing quarrying operations. Periodic blasting (within Pit 3) will be undertaken as a means of separating and breaking up the materials on-site ready for excavation. Blasting will occur infrequently and is expected to occur annually or every two years based on current and predicted extraction rates. All blasting events will be undertaken in accordance with relevant EPA Noise guidelines and WorkCover requirements. Further details regarding blasting are contained within **Sections 3.9** and **7.3** of this report.

Separated and blasted in-situ materials will then be excavated using a 35 tonne excavator and a front end loader where it will then be placed into dump trucks. Oversized materials will be stockpiled

within the quarry pit, where they will be further broken down using a hydraulic jack hammer, which will allow the materials to be processed in the crusher. In situ materials will then be directly transported via dump truck where they will then be tipped into the crusher.

Extraction will continue until the final contour is achieved. A 'retreat method' of material extraction will be implemented to allow effective, progressive rehabilitation of an area and minimise further disturbance to rehabilitated sites. Extraction will continue to the north, east and north-east as identified in the proposed staging plan for the site (see **Attachment B**).

Following loading into the crusher, in-situ materials will then be crushed and screened via three separate conveyor belts that will screen and separate the material into different sizes and further crush oversized materials until a consistent product size is achieved ('sieve method'). These conveyor belts and crushing machines will be fitted with irrigation sprays to reduce potential impacts of dust and all crushing and processing operations will be monitored by a site operator located within the control room attached to the plant.

Several rotating magnets will also be attached to the conveyor belts, which will be used to remove any residue or scrap metal contained within the crushed material (particularly reinforcing from recycled crushed concrete). These metal wastes will then be stockpiled and loaded into containers where they will be later transferred to a metal recycler once they are full.

Following crushing and screening, finished processed materials will then be transferred via conveyor belt and placed into stockpiles measuring 10-15 metres tall. A ring sprayer will be attached to the end of the conveyor belt to wet down final processed and stockpiled materials, which will be stored on-site awaiting transport off site.

3.8.3 Road Haulage and Transport

Following crushing and processing of extracted materials, processed materials will be transported off-site for use in local road construction projects via truck and trailer combinations. Primary vehicular access to the site and quarry pits (namely Pit 3) will be derived from the existing unsealed Winchester Lane, which intersects with the adjoining sealed Gerogery Road located to the east.

A secondary unsealed access road also exists approximately 1.2 kilometres further south towards the Nexus industrial estate via a Travelling Stock Reserve (TSR) that will be used to access Pit 1.

In addition, to the transporting of quarrying materials off-site, a number of truck and trailer combinations will also access the site to dispose of biosolid waste from the adjoining Norske Skog Paper Mill, as well as the disposal of concrete waste from local construction sites.

A Traffic Impact Assessment has been prepared in support of the proposed development to determine the likely traffic volumes and level of service that will be achieved, as well as an assessment of existing sight distances based on a 'worst case scenario'.

As a result of this study, it was identified that a number of improvement and upgrade works are required to achieve relevant sight distances at the intersection of Winchester Lane and Gerogery Road. More specifically, a number of earth embankment works will need to be undertaken to the Gerogery Road road reserve on the northern side of Winchester Lane, so as to achieve relevant sight distance requirements.

Furthermore, a number of trees (re-growth) have also been identified as requiring removal and/or pruning by the relevant road authority within an adjoining Crown Travelling Stock Reserve located to

the south of the Winchester Lane intersection, so as to also achieve the relevant sight distances to the south. This is a pre-existing situation and a separate request has been made to the road authority to address this issue, as it affects not only the subject land, but several other landowners and user groups who utilise Winchester Lane.

3.9 Blasting and Crushing of Recycled Concrete

The development seeks approval to undertake periodic blasting within Pit 3 to break down in-situ materials, which will allow it to be more easily processed by excavators and front end loaders. Blasting will occur within the existing and proposed quarry expansion area of Pit 3 and will be undertaken by a sub-contractor experienced in drilling and blasting at the direction of the site operator.

Historically, blasting events have occurred approximately every two years, although this is expected to increase as a result of the proposed development and is likely to occur annually. The amount of material that is blasted during each blast event is also expected to increase so as to limit the frequency of blasting events that will be required.

Work health and safety requirements, including exclusion zones, will be established prior to blasting occurring and any blasting event will be conducted in accordance with relevant EPA License conditions, which currently limit the days and hours of work to 10am-3pm Mondays to Fridays.

No blasting works are proposed within Pit 1.

Approval is also sought to crush and recycle an annual maximum of 20,000 tonnes of solid concrete waste from residential, industrial and commercial sites within Pit 3, consistent with current day operations and a current EPA license that applies to the site. As a consequence of the proposed works, a revised EPA license will need to be obtained.

More specifically, the development will involve the receipt and stockpiling of broken concrete from various demolition sites comprising demolished kerb and gutter, footpath slabs, reinforced concrete slabs and concrete footings and foundations.

Concrete waste will be transported to the site via truck and trailer and stockpiled within the central portions of Pit 3 located to the north of the existing site office. Following stockpiling, the concrete will then be broken down for processing using a 35-tonne excavator and hydraulic jaws and hammers and will then be processed through the crushing plant where the material is crushed and screened to produce a fine crushed rock material.

Reinforcing steel will be separated out from this material during crushing and screening using a rotating electromagnet affixed to the conveyor belts. The steel will then be salvaged and placed into bins where it will be transported off-site for recycling by a third party.

No crushing or processing of recycled concrete is proposed within Pit 1.

3.10 Rehabilitation and Revegetation

As part of the quarrying activities conducted on-site, ongoing and staged rehabilitation works will occur on-site to produce an area which is stable, self-sustaining, conforms to the character of the local and regional environment, and is safe. The final land use proposed for the site is grassed rural paddocks similar to that which currently exists on site.

Development works will be staged to limit the extent of site disturbance achieved at any given period of time, as well as to allow for the ongoing and staged rehabilitation of the site. More specifically, rehabilitation works will involve the gradual decommissioning of all surface infrastructure, remediation of any land contamination and the backfilling and filling of the land with stockpiled topsoil or clean virgin fill that will then be compacted and reshaped to the final landform.

Upon final landform the area will be re-vegetated and top-dressed with a variety of local native trees, shrubs and grasses and fencing and exclusion areas will be established to limit disturbance by cattle.

In addition, and in recognition of the native vegetation removal works associated with the proposed extractive industry, an area of approximately 15 hectares of RU2 Rural Landscape zoned land will be revegetated and maintained ongoing to ensure that the development does not have a long term adverse environmental impact. These works will be undertaken in the interim and will be undertaken in accordance with a Vegetation Management Plan (VMP) that has been prepared for the site (see **Attachment I**).

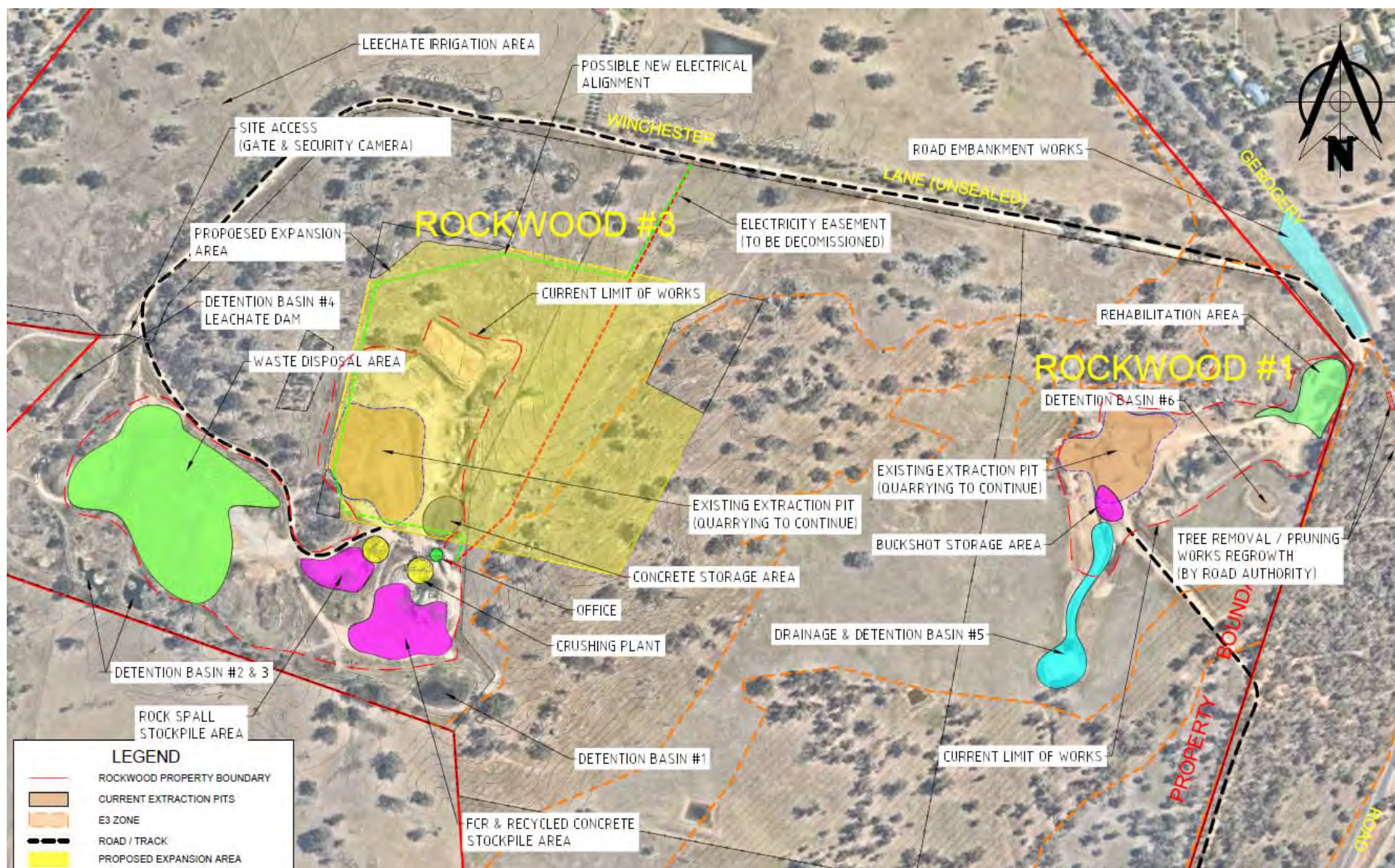


Figure 26 Site Plan (Proposed) showing the location of Quarry Pits and site activities

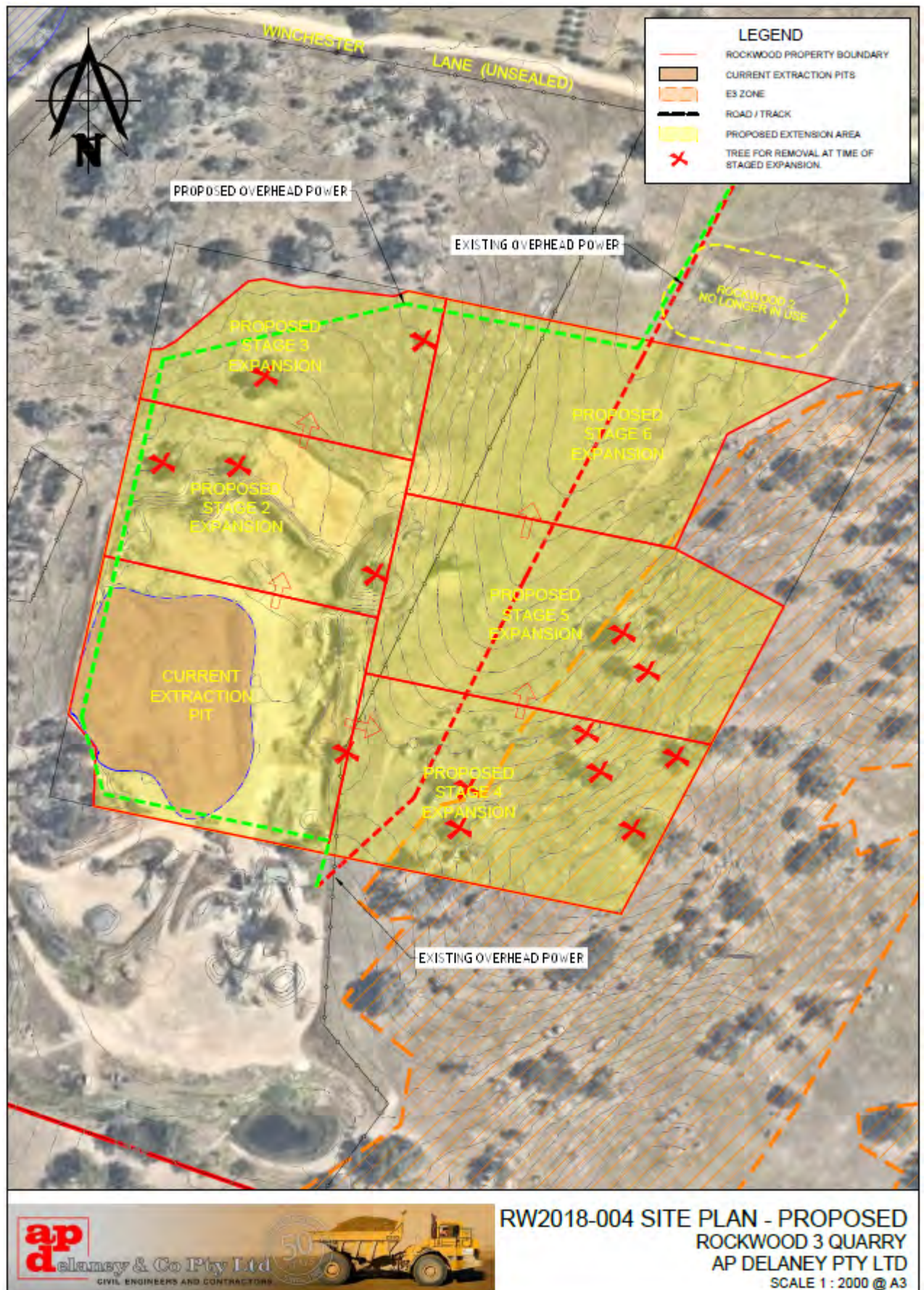
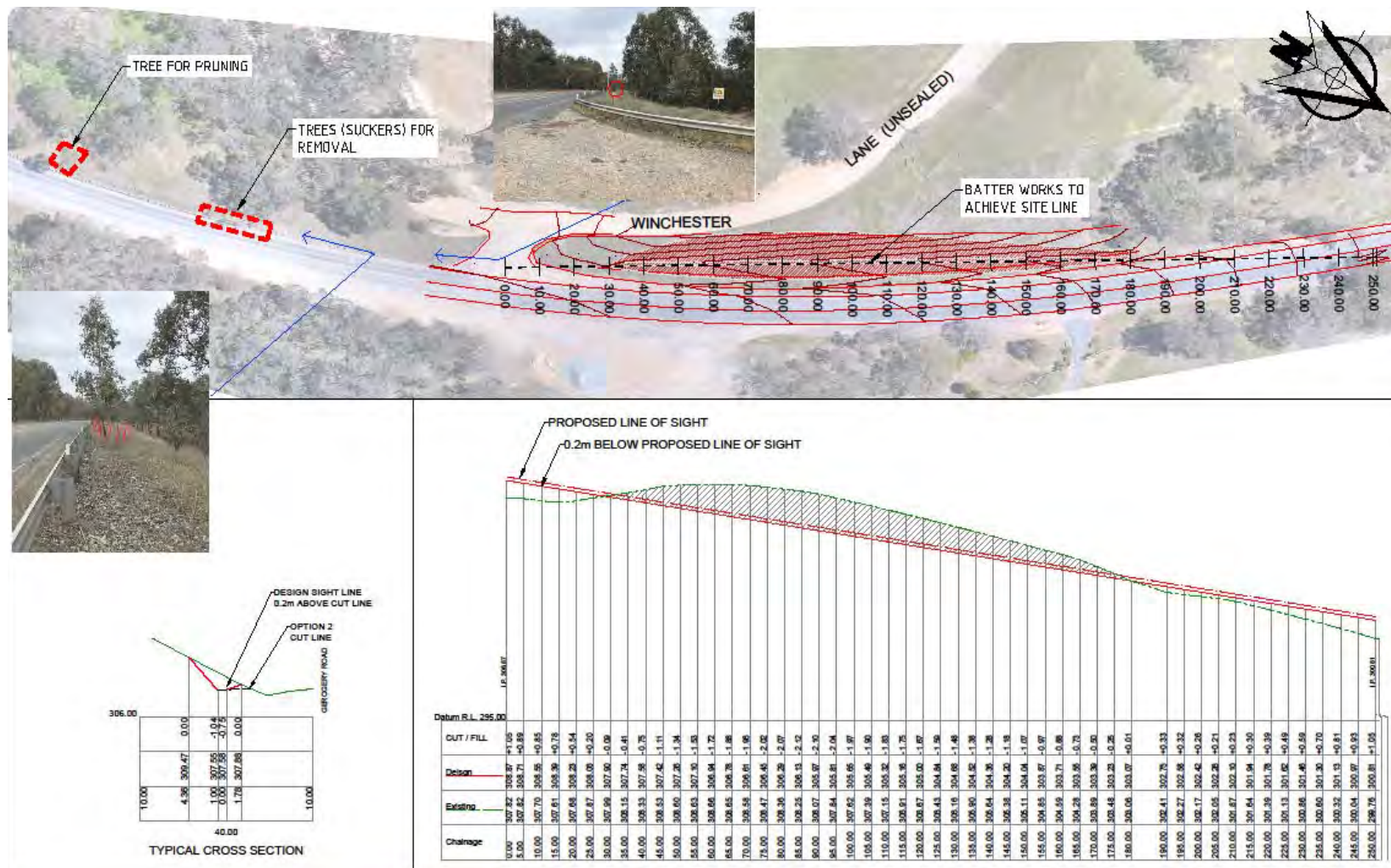


Figure 27 Proposed Staging Plan – Pit 3



RW2018-009 PROPOSED INTERSECTION UPGRADE
ROCKWOOD QUARRY
AP DELANEY PTY LTD
SCALE 1 : 1000 @ A3

Figure 28 Proposed road embankment and tree removal works

4. Statutory Planning Instruments

4.1 Commonwealth Legislation

4.1.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides the framework to assess proposed actions that will have, or are likely to have, a significant impact on matters of National Environmental Significance (NES), Commonwealth land, or are proposed to be undertaken by the Commonwealth or a Commonwealth Agency.

These matters of National Environmental Significance include:

- World Heritage properties;
- National Heritages Places;
- RAMSAR wetlands;
- Cetaceans, migratory species, threatened species, critical habitats or ecological communities listed in the EPBC Act;
- Commonwealth land, marine areas or reserves; and
- Nuclear actions.

A Biodiversity Assessment has been prepared as part of this proposal, which included amongst other things consideration of the matters listed under the EPBC Act. Following completion of this assessment, several threatened species and ecological communities were identified as being either present or likely to be present on the subject land.

It is confirmed that the development does not affect any other matter of National Environmental Significance.

Further details regarding each of these threatened species and ecological communities are provided below:

Swift Parrot

The Swift Parrot *Lathamus discolor* is listed as Critically Endangered under the EPBC Act. This species has been recorded sporadically around the study area and the area contains native woodlands dominated by White Box that would provide a foraging resource for this nectar and lerp dependent species. Accordingly, the Swift Parrot has the potential to be an occasional visitor to the study area during autumn and winter.

The Biodiversity Assessment concluded that the Swift Parrot's migratory nature means that it cannot be discounted from occurring anywhere there are suitable flowering resources in southern NSW. However, the availability of resources in the broader landscape means that the limited tree removal associated with the proposed quarry expansion will not lead to any decline in the species' overall abundance or area of occupancy. Furthermore, the vegetation within the study area is unlikely to constitute critical habitat for this species.

Pink Tailed Worm-lizard

Following the completion of a Biodiversity Assessment for the subject land, it was concluded that the study area contained potential suitable habitat for the Pink-tailed Worm-lizard *Aprasia parapulchella*, which is listed as Vulnerable under the EPBC Act. This species is a fossorial legless lizard that feeds principally on the eggs and larval stages of various ant species. It inhabits small rocky clearings in open woodland, especially in sparsely treed areas with good cover of native grasses.

In response, a targeted search was undertaken for the Pink-tailed Worm-lizard by Dr Damien Michael on 1 June 2018 (see **Attachment J**). Potential habitat along the north-western facing slope of the proposed quarry expansion, an area covering approximately 2.25 hectares, was searched by turning over and inspecting 293 surface rocks for individuals or slough skins. As no evidence of this species was detected and the site supported only a low density of suitably sized rocks and low numbers of host ant species, it was concluded that there was only a low likelihood of the species being present in the study area.

Furthermore, of the rocks that were lifted, 15 individuals of the Eastern Striped Skink *Ctenotus spaldingi* were detected. The Pink-tailed Worm-lizard is not known to occupy rocks that are used by this large lizard species.

Notwithstanding the above, the report did recommend the installation of a transect line of 40 roofing tiles in clusters of four extending every 40 metres along the north-west facing rocky slope of the proposed expansion site. Tiles should be checked for host ant species and sheltering Pink-tailed Worm-lizards on a monthly basis between August and November for a minimum of three years, in conjunction with searches of suitable rocks.

Grassy Box Gum Woodlands

Box Gum Woodlands are listed as a Critically Endangered Ecological Community (CEEC) under the EPBC Act. The potential impact of removing 1.74 hectares of this community as a result of the proposed quarry extension was assessed as part of the Biodiversity Assessment prepared by Biosis (see **Attachment I** and **Figure 29**). The assessment concluded that the impact was not likely to be significant but that the expansion area should be reconfigured to further minimise the loss of the CEEC and that the project be referred to the Department of Environment and Energy in order to obtain legal certainty for the proponent.

In response to OEH comments, the Box Gum Woodland was remapped to include buffer areas, resulting in an overall area of 2.0 hectares. Subsequently the proponent has revised the boundaries of the expansion area, resulting in a loss of 1.25 hectares of CEEC (see **Figure 30**). Although biodiversity certification of the Albury LGA removes the requirement for a Test of Significance under the BC Act, Council is still required to consider the biodiversity impacts of a development in accordance with Section 79C of the EP&A Act.

Furthermore, approximately 2.4 hectares of the native vegetation to be removed as a result of the proposal is zoned E3 Environmental Management under the ALEP 2010. Accordingly, it is proposed to offset the loss of 19 trees at a ratio of 10:1 as per DECCW (2009). This would comprise 2 parcels totalling approximately 15 hectares of infill revegetation (see **Figure 31**) on-site that would aim to connect existing areas of E3 vegetation and adjacent Crown land, forming a broad corridor extending eastwards. Species selection, planting methods and management protocols would follow guidelines set out in the Vegetation Management Plan (VMP) prepared by Biosis (see **Attachment I**).

Every attempt has been made to avoid ecological impacts by reducing the development footprint. Furthermore, mitigation measures have been recommended to minimise ecological impacts during construction and operation. Finally, an offset area has been proposed to compensate for the loss of 19 trees that would be planted and managed in accordance with guidelines provided in a VMP.

Conclusion

Notwithstanding the mitigation measures outlined above, the biodiversity report concluded that:

As the project definitions currently stand and due to multiple MNES being potentially effected, we consider there to be a sufficient level of risk to warrant referral of the project to the Minister of the Environment and Energy for determination. This would provide the proponent with legal clarity moving forward. We also recognise that there is an opportunity to mitigate impacts within the study area through further re-defining the scope of the expansion to avoid as much Box Gum Woodlands as possible and by conducting targeted surveys to determine Pink-tailed Worm Lizard presence / absence.

In accordance with these recommendations, a targeted survey was conducted in relation to the Pink-tailed Worm Lizard and the project area was further refined and reduced so as to minimise the environmental impacts of the works.

To ensure legal certainty, the project was also referred to the Federal Minister for the Environment and Energy to determine whether the activity was a 'Controlled Action' that warranted further investigation. A copy of this EPBC referral is included as **Attachment K**.

Following consideration of the project, the Federal Minister for the Environment and Energy determined that the proposed works are not a Controlled Action and that no further assessment and approval under the EPBC Act is required. A copy of this approval is included as **Attachment K**.

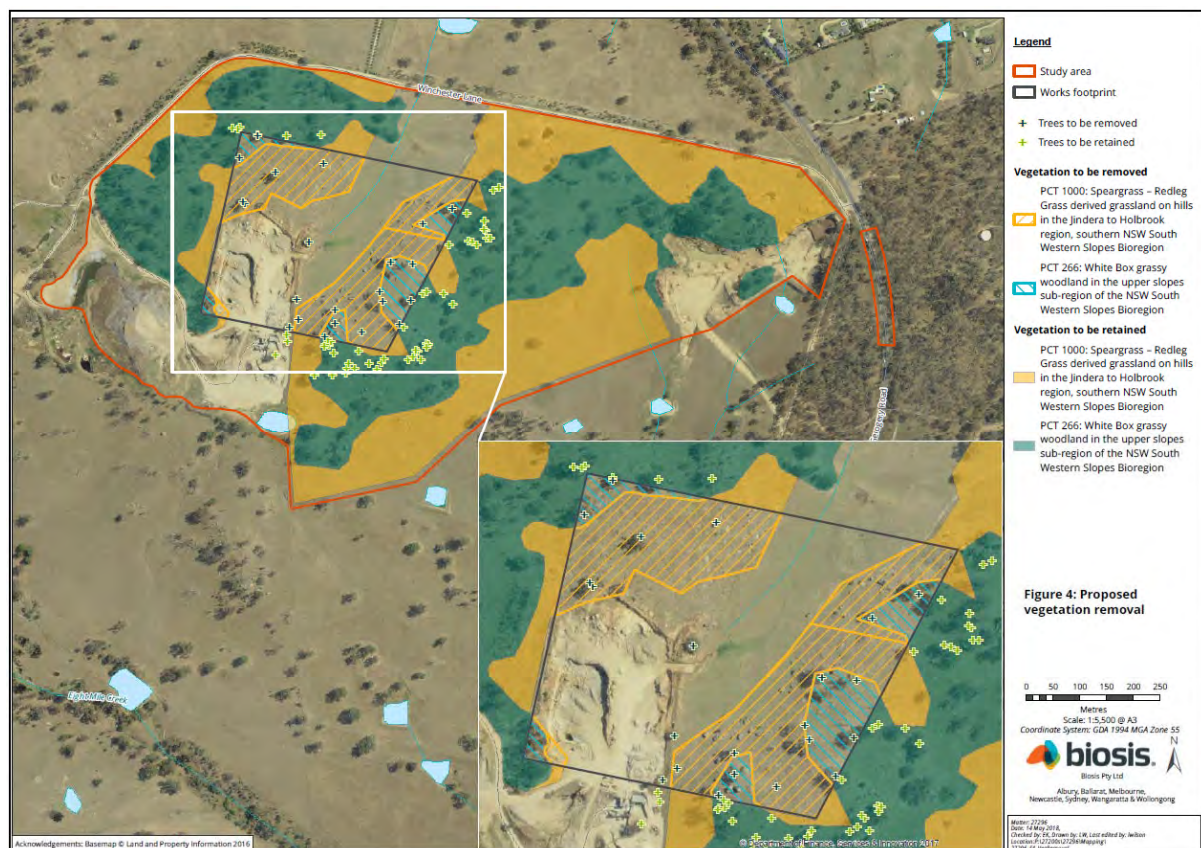


Figure 29 Proposed expansion area and vegetation classification (original) (Source: Biossis, 2018)

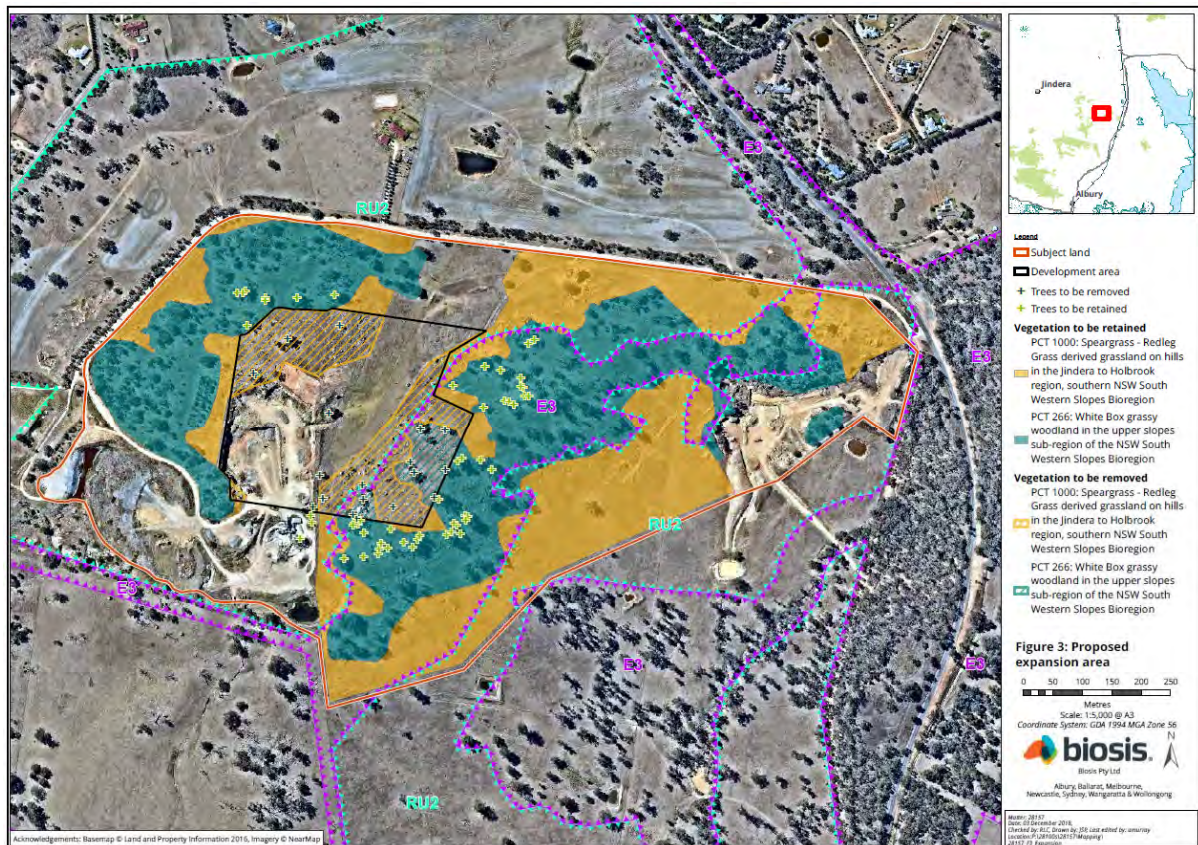


Figure 30 Proposed expansion area and vegetation classification (revised) (Source: Biosis, 2018)

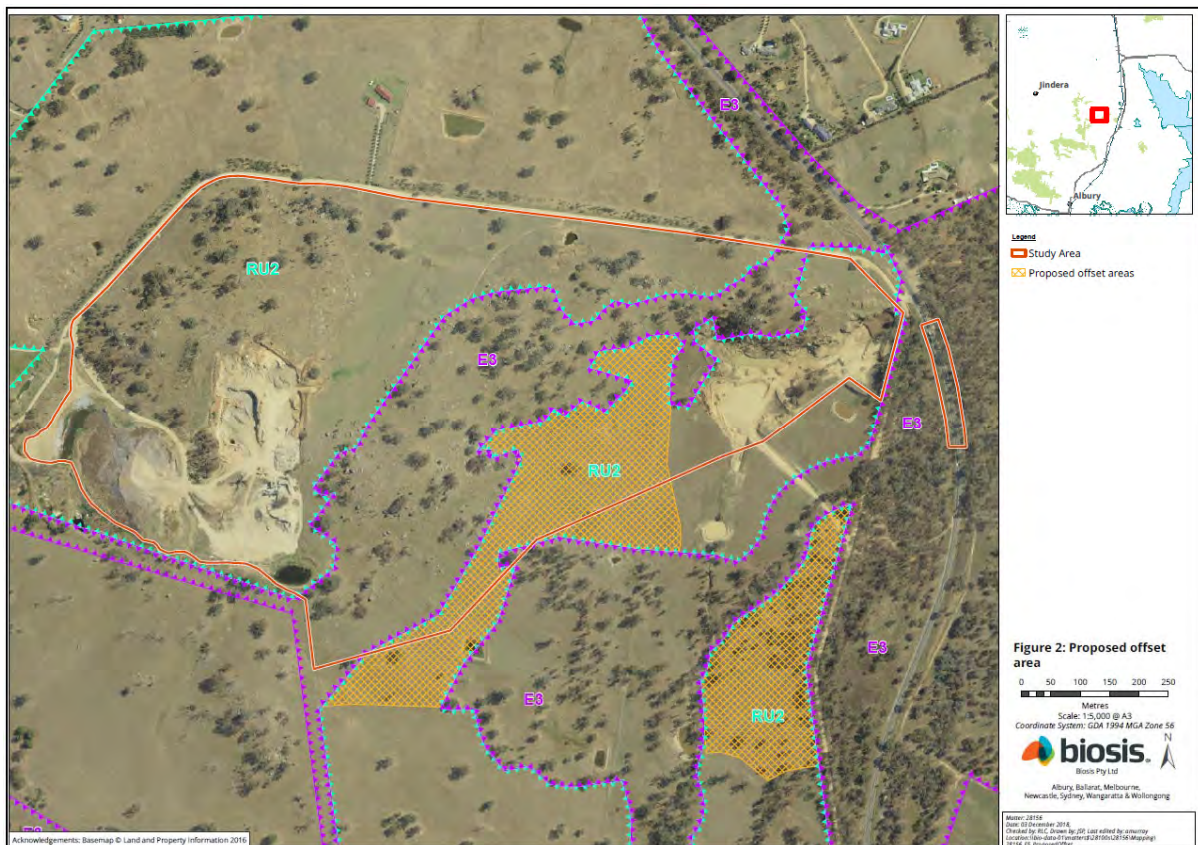


Figure 31 Proposed vegetation offset area (Source: Biosis, 2018)

4.1.2 Native Title Act 1993

The *Native Title Act 1993* (NT Act) is administered by the National Native Title Tribunal. This Tribunal is responsible for maintaining a register of native title claimants and bodies to whom native title rights have been granted. The NT Act prescribes that native title can be extinguished under certain circumstances, including the granting of freehold land.

Given the historical ownership and use of the land, there are no areas of land within the subject land where native title may not have been extinguished.

4.2 State Legislation

4.2.1 Environmental Planning & Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is administered by both NSW DPE and by local government. It is the primary legislation governing environmental planning and assessment for NSW.

The objects of the EP&A Act relevant to the current proposal include:

- *the proper management, development and conservation of natural and artificial resources;*
- *the promotion and co-ordination of the orderly and economic use and development of land;*
- *the protection of the environment; and*
- *ecologically sustainable development.*

It is considered that the Project meets these objectives as it relates to planning for the safe and economic recovery of the State's natural resources whilst effectively managing impacts on the environment and community. Community consultation and engagement has also been undertaken as part of the preparation of this EIS, providing the community with an opportunity to be involved in the planning and assessment process of the project.

More specifically, Section 77A of the EP&A Act states that "*designated development is development that is declared to be designated development by an environmental planning instrument or the regulations.*" In the case of the proposed extractive industry, it is the *Environmental Planning & Assessment Regulation 2000* that provides this definition (see below).

In accordance with this Act, Part 4 specifies statutory requirements for the preparation of an EIS. These requirements have been reviewed and addressed within the report.

Section 79C(1) of the EP&A Act identifies matters for consideration that the consent authority must take into account when determining a development application. A summary of these matters and where they have been addressed in the EIS is outlined in **Table 11**.

Table 11: Section 79C(1) – Matters for Consideration

Matters for Consideration	Addressed in EIS
(a) <i>The provisions of:</i>	
(i) <i>any environmental planning instrument, and</i>	Section 4.3 & 4.4
(ii) <i>any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and</i>	Not applicable
(iii) <i>any development control plan, and</i>	Section 4.5
(iiia) <i>any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and</i>	Not applicable
(iv) <i>the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and</i>	Section 4.2.2
(v) <i>any coastal zone management plan (within the meaning of the Coastal Protection Act 1979), that apply to the land to which the development application relates,</i>	Not applicable
(b) <i>the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,</i>	Section 7
(c) <i>the suitability of the site for the development,</i>	Sections 1, 2, 7 & 8
(d) <i>any submissions made in accordance with this Act or the regulations,</i>	Comments to be received on the EIS during the exhibition process.
(e) <i>the public interest.</i>	Sections 7 & 8

4.2.2 Environmental Planning & Assessment Regulation 2000

The proposed development is classified as ‘designated development’ under Schedule 3 of the *Environmental Planning & Assessment Regulation 2000* (EP&A Regulation) because it:

- *will obtain or process for sale more than 30,000m³ of extractive material per year; and*
- *will disturb a total surface area of more than 2 hectares of land by:*
 - (i) *clearing or excavating;*
 - (ii) *constructing dams, ponds, drains, roads or conveyors, or*
 - (iii) *storing or depositing overburden, extractive material or tailings.*

In reference to designated development, a development application must be accompanied by an EIS to assess the likely impacts of the development. The structure and content of the EIS is detailed in Schedule 2 and clauses 72 and 73 of the EP&A Regulation. This EIS is also required to address the Environmental Assessments Requirements outlined by the Secretary of NSW DPE (SEARs).

A copy of the SEARs for this EIS is provided at **Attachment A** to this report and the subject EIS has been prepared to satisfy the requirements of the EP&A Regulation.

4.2.3 Protection of Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) provides the statutory framework for managing pollution and waste in NSW, including the procedures for issuing licences for environmental protection on aspects such as waste, air, water and noise pollution control. Companies and property owners are legally bound to control emissions (including particulates and deposited dust) from construction sites under the POEO Act. Activities undertaken onsite must not contribute to environmental degradation, and pollution and air emissions must not exceed the standards. Where an environment protection licence applies, waste management requirements and air quality requirements (including criteria) may be specified by the licence.

As outlined in Section 2.2.2, given the scale and nature of the existing activities conducted on-site, the existing quarry is currently classified under Schedule 1 of the POEO Act and is subject to Environment Protection License No. 10069.

More specifically, an EPA license is required in relation to the following activities:

- Crushing, grinding or separating of more than 30,000 tonnes of material processed;
- Extractive industry that extracts, processes or stores more than 50,000 tonnes of material; and
- Waste disposal (by application to land)(subject to a separate approval and valid ongoing).

As a consequence of the proposal, an amended license will need to be obtained from the EPA to continue quarrying and the crushing of recycled concrete.

4.2.4 Protection of the Environment Operations (General) Regulation 2009

The *Protection of the Environment Operations (General) Regulation 2009* outlines the relevant fees that are payable for any EPA license. Accordingly, the provisions of this Regulation will be applicable to any subsequent EPA license issued for the site.

4.2.5 Protection of the Environment Operations (Noise Control) Regulation 2017

The *Protection of the Environment Operations (Noise Control) Regulation 2017* regulates the requirements for persons making noise level measurements.

Accordingly, the Noise Impact Assessment that has been prepared for the site has been undertaken in accordance with the requirements of this Regulation.

Further details regarding noise are discussed in **Section 7.3** of this Report and a copy of the Noise Impact Assessment is provided as **Attachment G**.

4.2.6 Protection of the Environment Operations (Waste) Regulation 2014

The *Protection of the Environment Operations (Waste) Regulation 2014* applies to the subject land as biosolid wastes are currently disposed of on-site from the adjoining Norske Skog Paper Mill.

For the purposes of this Regulation, the disposal of this waste is classified as a 'landfill' in that it is not used to store waste that is later transported elsewhere, but rather used for the purposes of 'land application' as part of the ongoing rehabilitation of the site (backfilling of land). In accordance with the NSW EPA Waste Classification Guidelines, the waste is more accurately defined as 'general solid waste (putrescible)'.

Notwithstanding, as outlined above, this activity is already approved and remains valid ongoing subject to the requirements of the originally issued development consent and EPA licence that applies to the land. Therefore, further consideration of the requirements of this regulation is not required in this instance and the site has continued to operate in accordance with the requirements of this regulation and has operated without environmental harm or incident since initial disposal in 1983.

More specifically, a leachate barrier system and leachate storage and disposal system have been established, as well as stormwater management and water quality monitoring procedures. In accordance with current EPA license requirements, the waste disposal area is subject to routine environmental monitoring and environmental auditing.

A record of all wastes accepted on-site has also been established in accordance with the requirements of the Regulation. To date, the existing waste disposal area has operated within environmental limits and it is expected that the continued disposal of waste on-site will also comply with these requirements.

4.2.7 Protection of the Environment Operations (Clean Air) Regulation 2010

The *Protection of the Environment Operations (Clean Air) Regulation 2010* (the Clean Air Regulation) provides regulatory measures to control emissions from motor vehicles, fuels, and industry.

Given the nature of the proposed development, being an extractive industry with associated ancillary crushing of concrete and waste disposal, it is important to consider the requirements of the Clean Air Regulation.

In response, an Air Quality Impact Assessment has been prepared for the site, which confirms that even when the development is at maximum capacity, it will still operate within prescribed environmental limits.

Further details regarding air quality are discussed in **Section 7.7** and a full copy of the Air Quality Impact Assessment prepared for the site is contained in **Attachment H**.

4.2.8 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) is the principle piece of environmental legislation in NSW and repealed the former *Threatened Species Conservation Act 1995* and *Native Vegetation Act 2003*. The provisions of this Act require an assessment of the environmental impacts of development. More specifically, Schedules 1 & 2 of the Act contains a list of threatened species and threatened ecological communities.

In response, a Biodiversity Assessment was prepared for the site, which identified the presence of a number of threatened species within the study area (see **Attachments I & J**).

The majority of the proposed expansion area is zoned RU2 Rural Landscape (approximately 10ha) with the remaining area zoned E3 Environmental Management (approximately 3.5ha) under the *Albury Local Environmental Plan 2010*. It is noted that the LEP was conferred biodiversity certification by NSW OEH and the subject land is located wholly within 'Biodiversity Certified' land under the LEP.

Development on biodiversity certified land is taken to be development that is not likely to significantly affect any threatened species, populations or ecological communities or its habitat. Therefore,

although no further assessment of impacts to threatened species, populations or ecological communities is required under the BC Act, a consent authority can still require consideration of the likely impact of the development on biodiversity values in accordance with Section 79C of the EP&A Act.

In accordance with the Biodiversity Certification of Environmental Planning Instruments Order 2017 (NSW Government Gazette 126) that was gazetted after the introduction of the Biodiversity Conservation Act 2016, the Albury Biodiversity Certification does not apply to any land that is both:

- a) within the area identified as the Biodiversity Certified Area in Schedule 1 of the Albury Biodiversity Certification, and
- b) excluded land.

In this case 'excluded land' refers to all land subject to the ALEP, other than land that was, immediately prior to the commencement of the Biodiversity Conservation Act 2016, zoned:

- a) Business (B1-B8), or
- b) Industrial (IN1-IN4), or
- c) Residential (R1-R5)

Because the revised proposal would result in the removal of 19 trees from the proposed expansion area, which is shown in Schedule 1 of Albury's Biocertification scheme and is not excluded land, an appropriate offset is required on-site at a ratio of 10:1 as per DECCW (2009).

Accordingly, two parcels of land totalling approximately 15 hectares would be revegetated (see **Figure 31**) on-site in order to connect existing areas of E3 vegetation and adjacent Crown land, forming a broad corridor extending eastwards. Offset planting would comprise 250 trees and 1400 shrubs/groundcover species and would aim to increase habitat complexity for woodland species of birds. Plant species selection, planting methods and management protocols would follow guidelines set out in the Vegetation Management Plan prepared by Biosis (see **Attachment I**).

It is noted however that consideration is still required under the EPBC Act as outlined in **Section 4.1.1** above.

4.2.9 Mining Act 1992

The *Mining Act 1992* (Mining Act) applies to those commodities prescribed by the Regulations of the Mining Act. It is noted however that most construction materials such as sand (other than marine aggregate), loam, river gravel, and coarse aggregate materials such as basalt, sandstone, and granite (including those quarried from the subject land) are not prescribed minerals under the Mining Act. In general terms, a Mining Title is not required for their extraction.

4.2.10 Mining Regulation 2016

The *Mining Regulation 2016* (Mining Regulation) accompanies the Mining Act and prescribes for the purposes of the Mining Act, the definition of 'minerals' and 'groups of minerals' as defined within Schedule 1 and 2 of the Mining Regulation. It is noted that following a review of these schedules, granite is not a prescribed material.

4.3 State Environmental Planning Policies

4.3.1 State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Extractive Industries SEPP) was gazetted in February 2007. The SEPP outlines where various extractive industry activities are permissible both with and without development consent. The SEPP also defines mining, petroleum production and extractive industries developments that are prohibited, exempt or complying developments.

As outlined in **Section 4.4.1** the subject land is zoned RU2 Rural Landscape and E3 Environmental Management under the provisions of the LEP. An extractive industry is permitted with consent in the RU2 zone, but is prohibited within the E3 zone. Notwithstanding, the subject land is listed as Item No. 15 within Schedule 1 of the LEP as an 'Additional Permitted Use', which allows development for the purposes of 'extractive industries' as permitted with consent.

Part 3 of the Extractive Industries SEPP identifies matters for consideration that the consent authority must take into account when determining a development application. A checklist of those relevant matters contained within the Extractive Industries SEPP that have been addressed in the EIS is outlined in **Table 12**:

Table 12: Extractive Industries SEPP, Part 3: Development Applications – Matters for Consideration

Matters for Consideration	Addressed in EIS
12 Compatibility of proposed mine, petroleum or extractive industry with other land uses	
Before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must:	
(a) Consider:	
(i) the existing uses and approved uses of land in the vicinity of the development, and	Sections 2.1 & 2.2
(ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and	Sections 2.2 & 7
(iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and	Sections 2.2 & 7
(b) Evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a) (i) and (ii), and	Sections 1.7, 2.2 & 7.10
(c) Evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a) (iii).	Section 8
13 Compatibility of proposed development with mining, petroleum production or extractive industry	
(1) This clause applies to an application for consent for development on land that is, immediately before the application is determined:	
(a) in the vicinity of an existing mine, petroleum production facility or extractive industry, or	Section 2.2

Matters for Consideration	Addressed in EIS
(b) identified on a map (being a map that is approved and signed by the Minister and copies of which are deposited in the head office of the Department and publicly available on the Department's website) as being the location of State or regionally significant resources of minerals, petroleum or extractive materials, or Note. At the commencement of this Policy, no land was identified as referred to in paragraph (b).	Not applicable
(c) identified by an environmental planning instrument as being the location of significant resources of minerals, petroleum or extractive materials.	Section 4
(2) Before determining an application to which this clause applies, the consent authority must:	
(a) Consider	
(i) the existing uses and approved uses of land in the vicinity of the development, and	Sections 2.1 & 2.2
(ii) whether or not the development is likely to have a significant impact on current or future extraction or recovery of minerals, petroleum or extractive materials (including by limiting access to, or impeding assessment of, those resources), and	Section 2.0
(iii) any ways in which the development may be incompatible with any of those existing or approved uses or that current or future extraction or recovery, and	Section 2.0
(b) evaluate and compare the respective public benefits of the development and the uses, extraction and recovery referred to in paragraph (a) (i) and (ii), and	Sections 1.7, 2.1, 3.0 & 6.10
(c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a) (iii).	Section 8.0
14 Natural resource management and environmental management	
(1) Before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner, including conditions to ensure the following:	
(a) that impacts on significant water resources, including surface and groundwater resources, are avoided, or are minimised to the greatest extent practicable,	Sections 7.2 & 7.6
(b) that impacts on threatened species and biodiversity, are avoided, or are minimised to the greatest extent practicable,	Sections 4.0 & 7.1
(c) that greenhouse gas emissions are minimised to the greatest extent practicable.	A greenhouse gas emissions assessment was not required as part of the SEARs.
(2) Without limiting subclause (1), in determining a development application for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider an assessment of the greenhouse gas emissions (including downstream emissions) of the development, and must do so having regard to any applicable State or national policies, programs or guidelines concerning greenhouse gas emissions.	Section 7.7
(3) Without limiting subclause (1), in determining a development application for development for the purposes of mining, the consent authority must consider any certification by the Chief Executive of the Office of Environment and Heritage or the Director-General of the Department of Primary Industries that measures to mitigate or offset the biodiversity impact of the proposed development will be adequate.	Not applicable as the proposal does not relate to mining.

Matters for Consideration	Addressed in EIS
15 Resource Recovery	
(1) Before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider the efficiency or otherwise of the development in terms of resource recovery.	Sections 2.0 & 3.0
(2) Before granting consent for the development, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at optimising the efficiency of resource recovery and the reuse or recycling of material.	Sections 2.0 & 3.0
(3) The consent authority may refuse to grant consent to development if it is not satisfied that the development will be carried out in such a way as to optimise the efficiency of recovery of minerals, petroleum or extractive materials and to minimise the creation of waste in association with the extraction, recovery or processing of minerals, petroleum or extractive materials.	Sections 2.0 & 3.0
16 Transport	
(1) Before granting consent for development for the purposes of mining or extractive industry that involves the transport of materials, the consent authority must consider whether or not the consent should be issued subject to conditions that do any one or more of the following:	
(a) require that some or all of the transport of materials in connection with the development is not to be by public road,	Section 7.9
(b) limit or preclude truck movements, in connection with the development, that occur on roads in residential areas or on roads near to schools,	Section 7.9
(c) require the preparation and implementation, in relation to the development, of a code of conduct relating to the transport of materials on public roads.	Section 7.9
(2) If the consent authority considers that the development involves the transport of materials on a public road, the consent authority must, within 7 days after receiving the development application, provide a copy of the application to:	
(a) each roads authority for the road, and	Noted
(b) the Roads and Traffic Authority (if it is not a roads authority for the road).	Noted
(3) The consent authority:	
(a) must not determine the application until it has taken into consideration any submissions that it receives in response from any roads authority or the Roads and Traffic Authority within 21 days after they were provided with a copy of the application, and	Noted – it is expected that the NSW RMS will be notified
(b) must provide them with a copy of the determination.	Noted
(4) In circumstances where the consent authority is a roads authority for a public road to which subclause (2) applies, the references in subclauses (2) and (3) to a roads authority for that road do not include the consent authority.	Noted
17 Rehabilitation	
(1) Before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at ensuring the rehabilitation of land that will be affected by the development.	Sections 3.0 & 7.15
(2) In particular, the consent authority must consider whether conditions of the consent should:	
(a) require the preparation of a plan that identifies the proposed end use and landform of the land once rehabilitated, or	Sections 3.0 & 7.15
(b) require waste generated by the development or the rehabilitation to be dealt with appropriately, or	Sections 3.0 & 7.15

Matters for Consideration	Addressed in EIS
(c) require any soil contaminated as a result of the development to be remediated in accordance with relevant guidelines (including guidelines under section 145C of the Act and the <i>Contaminated Land Management Act 1997</i>), or	Sections 3.0 & 7.15
(d) require steps to be taken to ensure that the state of the land, while being rehabilitated and at the completion of the rehabilitation, does not jeopardize public safety.	Sections 3.0 & 7.15

4.3.2 State Environmental Planning Policy (Rural Lands) 2008

State Environmental Planning Policy (Rural Lands) 2008 (Rural Lands SEPP) applies to the subject land as it is zoned RU2 Rural Landscape under the provisions of the LEP. This SEPP requires amongst other things to; facilitate the orderly and economic use and development of rural lands for rural and related purposes, identify Rural Planning Principles and Rural Subdivision Principles, as well as to implement measures designed to reduce land use conflicts.

As outlined within **Section 1**, the subject land has been operating as an extractive industry (quarry) for over 45 years on land previously owned by the former Hume Shire Council. It is noted that the subject proposal does not seek to further subdivide this land or construct any rural dwellings on-site and also does not relate to land classified as 'state significant agricultural land'.

Nonetheless, an assessment of the subject proposal against the Rural Planning Principles of the Rural Lands SEPP has been undertaken. The following Principles are of relevance to the proposal:

- *The promotion and protection of opportunities for current and potential productive and sustainable activities in rural areas;*
- *In planning for rural lands, to balance the social, economic and environmental interests of the community; and*
- *The identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land.*

The subject proposal is generally consistent with these principles as it seeks to allow the continued operation of an existing operating quarry, which has operated for over 45 years with little to no community objections or land use conflicts.

4.3.3 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) aims to facilitate the effective delivery of infrastructure across the State by improving regulatory certainty and efficiency through a consistent planning regime for infrastructure and the provision of services by providing greater flexibility in the location of infrastructure and service facilities.

The subject development is not defined as an infrastructure project or works for the purposes of this SEPP; however consideration is required against the requirements of Division 17 of this SEPP with regards to Roads and Traffic. Following a review of Clause 104 of this Division, it is noted that the subject development is not classified as a 'traffic generating development' for the purposes of Schedule 1 of this SEPP.

Notwithstanding, given the sites' proximity and road access point with Gerogery Road, the proposal will need to be referred to the NSW RMS demonstrating how the development will minimise impacts on the existing road network and maintain the level of safety, efficiency and maintenance of the existing road network.

In support of the application, a Traffic Impact Assessment (TIA) has been prepared in accordance with *A Guide to Traffic Generating Development* and other RMS and Austroads Standards. A copy of this TIA is provided at **Attachment F** and discussed in **Section 7.9** of this EIS.

It is noted however that following the completion of the TIA, it was identified that the existing intersection of Winchester Lane and Gerogery Road did not meet current day sight line requirements to both the north and south of this intersection. These sight lines are currently obstructed as a result of an existing earth embankment, as well as the presence of native regrowth (Blakely's Red-gum regrowth) occurring alongside Gerogery Road in an adjoining Crown Lands Travelling Stock Reserve.

Accordingly, the TIA recommended that earth embankment works be undertaken on the northern side of this intersection by the quarry operator, as well as the pruning and/or removal of native regrowth by the local road authority in association with Crown Lands given it is a pre-existing road safety issue.

It is noted that Division 17 of this SEPP permits the pruning and/or removal of this vegetation without development consent where it is in association with a road infrastructure facility.

Further details regarding these works are discussed within the TIA contained in **Attachment F**.

4.3.4 State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (State and Regional Development) 2011 (State and Regional Development SEPP) commenced on 1 October 2011, on the date Part 3A of the EP&A Act was repealed. The aim of the SEPP is to identify development that is State significant development, as well as identify development that is State significant infrastructure and critical State significant infrastructure. Schedule 1 of the State and Regional Development SEPP identifies types of development that are considered to be State significant developments.

Whilst it is acknowledged that 'extractive industries' are a state significant development type for the purposes of Schedule 1, the subject quarry does not exceed the annual extraction threshold of 500,000 tonnes of extractive material.

Accordingly, the subject proposal is not classified as State significant development and the provisions of this SEPP do not apply.

4.3.5 State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33) requires the consent authority to consider whether an industrial proposal is a potentially hazardous industry or a potentially offensive industry. The aim of this policy is to ensure that whether a development is a hazardous or offensive industry and whether any measures proposed to be employed to reduce the impact of the development are taken into account. The assessment process also establishes whether the proposal is potentially hazardous or offensive and if this is not the case, SEPP 33 is not applicable.

The proposed extractive industry is not classified as a 'hazardous' or 'potentially hazardous industry' as the development only involves the extraction of in-situ materials and does not involve the use or processing of any hazardous materials or chemicals. Likewise, the proposed crushing of concrete is also not considered a hazardous or potentially hazardous industry as it only seeks to crush and recycle concrete waste.

It is noted however that up to 10,000 tonnes of biosolid waste generated from the Recycle Fibre Plant and Waste Water Treatment Plant of the nearby Norske Skog Paper Mill are currently disposed on-site. It is reiterated that biosolid wastes are already currently disposed of on-site subject to a number of existing approvals and licenses and separate approval is therefore not required as part of this application.

Therefore, further consideration of the requirements of this SEPP are not required in relation to the disposal of these wastes and the site has been operating in accordance with the existing approvals and licences that apply to the land, which have been confirmed via independent environmental audits.

4.3.6 State Environmental Planning Policy No. 44 – Koala Habitat Protection

Consideration against the requirements of *State Environmental Planning Policy No. 44 – Koala Habitat Protection* (SEPP 44) applies as it relates to land previously contained within the former Hume Shire LGA, which is listed within Schedule 1 of this SEPP.

The aim of this policy is to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline:

- (a) *by requiring the preparation of plans of management before development consent can be granted in relation to areas of core koala habitat; and*
- (b) *by encouraging the identification of areas of core koala habitat; and*
- (c) *by encouraging the inclusion of areas of core koala habitat in environment protection zones.*

In determining the requirements of this SEPP, an applicant must determine whether the land is a potential or core koala habitat. Whilst it is acknowledged that no formal assessment or investigation of this land has been undertaken by a person who is qualified in tree identification, given the historical and current use of the land as an extractive industry, as well as the fact that the development is only seeking approval for the staged removal of up to 19 trees over a 30 year life cycle, the potential impacts on koalas is considered low.

Furthermore, given the relatively scattered and isolated nature of existing vegetation on-site, as well as the rocky outcrop and terrain of the land, the likelihood of koalas being present on the subject land is considered low. The current landowner has also confirmed that during the 45 years of operating the existing quarry, no koalas have been observed on-site during this period.

Accordingly, given the subject proposal only seeks to continue the current quarrying activities on-site, the proposed development is considered to be generally consistent with the requirements of this SEPP and will not change the current arrangements.

4.3.7 State Environmental Planning Policy No. 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) sets out considerations relating to land contamination across the state. The SEPP seeks to establish 'best practice' guidelines for managing land contamination and to reduce the risk of harm to human health and the environment, by consideration of contaminated land as part of the planning and development control process. Under the provisions of SEPP 55, a consent authority must not consent to the carrying out of development on land unless it has considered potential contamination issues.

Table 1 of the NSW EPA document titled *Managing Land Contamination: Planning Guidelines: SEPP55 - Remediation of Land* includes a list of activities that may cause contamination. Of relevance to the subject proposal includes: mining and extractive industries, landfills and waste storage and treatment facilities, which are all currently conducted from the subject land.

Potentially contaminating activities associated with the existing extractive industry on-site includes the operation of a workshop and the storage of diesel and oils in above ground storage tanks. These facilities are currently operated in a manner so as to prevent contamination through the implementation of appropriate management controls, monitoring and regular maintenance. Given these controls, it is considered that the potential for contamination within the existing quarrying pits would be limited to minor hydrocarbon surface staining which can be addressed as part of the decommissioning and remediation process once the quarry has closed.

In the context of this application, clause 7 of SEPP 55 generally requires that consideration be given to whether or not land proposed for development is contaminated and fit for use for its intended purpose.

Given that the subject land has historically been used as an extractive industry (quarry), with associated crushing of concrete and disposal of biosolid waste, and the fact that the current proposal seeks to continue these activities ongoing, the land is considered fit for use for its intended purpose and therefore the relevant considerations of SEPP 55 are satisfied by the current proposal.

Notwithstanding the above, whilst the current conditions of the site are appropriate for the proposed development, consideration also needs to be given to the likely long term uses of the land once the quarry has ceased operations. Depending on the contamination (if any) that is present on-site, as well as the proposed future land use, it may be necessary to remediate the site in accordance with the requirements of this SEPP.

Further consideration of the requirements of this SEPP will be undertaken at the time of any future application for the site.

4.4 Albury Local Environmental Plan 2010

The *Albury Local Environmental Plan 2010* (the LEP) came into effect on 13 August 2010 and applies to the proposed development. The applicable provisions of the LEP are:

- Clause 2.3 – Zone objectives and Land Use Table
- Clause 2.5 – Additional permitted uses for particular land
- Clause 5.9 – Preservation of trees or vegetation

- Clause 5.10 – Heritage conservation
- Clause 7.1 – Earthworks
- Clause 7.6 – Essential services

The above matters are addressed in the following sections.

4.4.1 Clause 2.3 – Zone objectives and Land Use Table

The subject land is part zoned E3 Environmental Management and RU2 Rural Landscape under the provisions of the LEP (as shown in red outline in **Figure 32**).

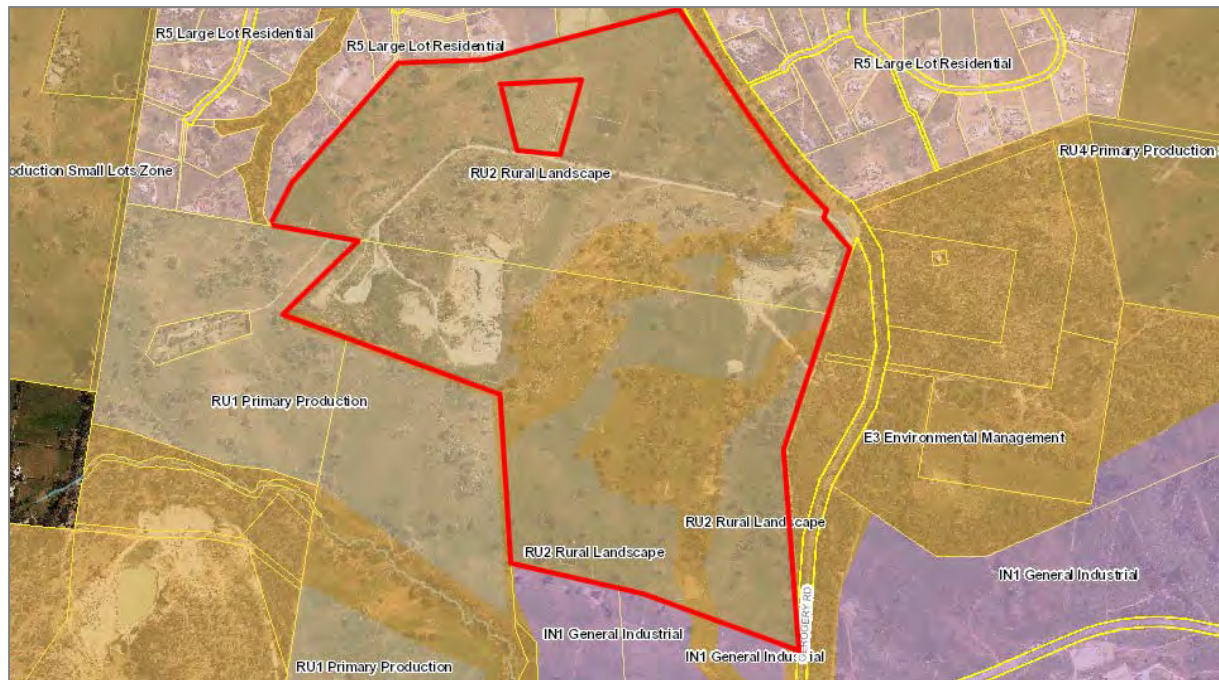


Figure 32: Zoning of subject land (shown in red outline) (Source: Albury LEP)

The proposed development, which involves an extractive industry, is permissible with consent in the RU2 zone.

The objectives of the RU2 zone are as follows:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To maintain the rural landscape character of the land.*
- *To provide for a range of compatible land uses, including extensive agriculture.*

The proposed development is considered to be generally consistent with the objectives of the RU2 zone as:

- It encourages the sustainable and efficient use of the site as a source of natural resources and construction materials;
- It will maintain the rural character of the area and will allow an existing quarry to continue operating. As outlined throughout this report, the location and operation of the existing quarry is largely screened from adjoining lands due to the topography of the land and existing dense vegetation and landscaping that exists, which will therefore ensure the

ongoing protection of the rural landscape of the area. At the conclusion of the quarry, the intention is to convert this land back to rural grazing land consistent with the character of the area; and

- The subject land has already been developed for the purposes of an extractive industry and the intention is to continue operating this site for this purpose as it has done so for over 45 years with minimal to no objections or complaints from nearby rural residential neighbours or adjoining industrial developments.

As previously outlined, a portion of the subject land is also zoned E3 Environmental Management. Whilst it is acknowledged that extractive industries are prohibited within this zone, as discussed earlier within this report, the subject land is listed within Schedule 1 of the LEP as an 'Additional Permitted Use' and is therefore permissible with development consent.

The objectives of the E3 zone are as follows:

- *To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values.*
- *To provide for a limited range of development that does not have an adverse effect on those values.*
- *To ensure the long term viability of populations of threatened species, populations and ecological communities by protecting and improving the condition of wildlife habitats and wildlife corridors.*
- *To allow appropriate land uses in close proximity to the Landfill Buffer Area.*

In accordance with the Biodiversity Certification of Environmental Planning Instruments Order 2017 (NSW Government Gazette 126) that was gazetted after the introduction of the Biodiversity Conservation Act 2016, the Albury Biodiversity Certification does not apply to any land that is both:

- a) within the area identified as the Biodiversity Certified Area in Schedule 1 of the Albury Biodiversity Certification, and
- b) excluded land.

In this case 'excluded land' refers to all land subject to the ALEP, other than land that was, immediately prior to the commencement of the Biodiversity Conservation Act 2016, zoned:

- a) Business (B1-B8), or
- b) Industrial (IN1-IN4), or
- c) Residential (R1-R5)

Because the revised proposal would result in the removal of 19 trees from the proposed expansion area, which is shown in Schedule 1 of Albury's Biocertification scheme and is not excluded land, an appropriate offset is required on-site at a ratio of 10:1 as per DECCW (2009). This would comprise infill revegetation on-site and would be undertaken in accordance with the Vegetation Management Plan (**Attachment I**) that has been prepared for the site.

As a consequence, the development is generally consistent with the objectives of the E3 zone as outlined below:

- It seeks to limit the footprint of the proposed quarrying activities and where works are proposed within the E3 zone, they have been appropriately offset via a vegetation offset area of 15 hectares of infill revegetation (see Figure 31) that will connect existing areas of E3 vegetation and adjacent Crown land, forming a broad corridor extending eastwards.
- The site will be developed and rehabilitated gradually over time to ensure that the impacts on the natural environment are minimised and where appropriate rehabilitated; and
- It does not adjoin the Landfill Buffer Area.

4.4.2 Clause 2.5 – Additional permitted uses for particular land

As outlined above, the proposed development, being an extractive industry, is prohibited within the E3 Environmental Management zone under the provisions of the LEP. Notwithstanding, the subject land is identified as Item No. 15 within Schedule 1 of the LEP as an 'Additional Permitted Use' as outlined below:

15 Use of certain land at 208 Winchester Lane, Table Top

- (1) This clause applies to land at 208 Winchester Lane, Table Top, being Lot 2, DP 101841 and Lot 3, DP 233061.*
- (2) Development for the purpose of extractive industries is permitted with consent.*

Accordingly, the provisions of Clause 2.5 apply to the subject land. Following a review of this Schedule, the proposed development is consistent with the requirements of this clause as the development involves an extractive industry and the proponent is seeking development consent.

4.4.3 Clause 5.9 – Preservation of trees or vegetation

Matters regarding the preservation of trees or other vegetation need to be assessed in accordance with Clause 5.9 of the LEP. The subject land is part zoned RU2 – Rural Landscape under the LEP and is 'biodiversity certified'. Under the provisions of this agreement, biodiversity certification removes the requirement for a Test of Significance, but still requires Council to consider the biodiversity impacts of a development in accordance with Section 79C of the EP&A Act.

Following a review of the subject land and the proposed area of extraction, it is noted that 19 trees, some of which are hollow-bearing, will need to be removed as part of the long-term expansion of this extractive industry.

Although trees to be removed comprise scattered paddock trees and do not provide linkages to surrounding vegetation or contribute to screening, they may provide important foraging and/or sheltering resources for birds and bats. Tree removal will be offset through the provision of approximately 15 hectares of infill revegetation on-site that will include 250 trees (i.e. to ensure the replacement of at least 190 trees). Shrub and ground storey vegetation would also be planted in order to increase habitat complexity. The entire site will gradually be rehabilitated over time and it is noted that already a large amount of tree planting and landscape screen plantings have previously been undertaken on-site.

It should be noted that the current proposal does not seek to expand the area of development beyond that already approved by previous development consents issued for the land.

4.4.4 Clause 5.10 – Heritage conservation

Clause 5.10 relates to heritage conservation and aims to conserve the heritage of Albury, including the heritage significance of heritage items and conservation areas, associated fabric, settings and views. Following a review of Schedule 5 and the Heritage Maps of the LEP, it is confirmed that the subject land is not identified as an individual heritage item nor is it located within a heritage conservation area.

Notwithstanding the above, given the sites' proximity to landscape features considered indicative for the presence of Aboriginal Cultural Heritage (ACH) including a number of natural watercourses,

matters regarding ACH need to be appropriately addressed as part of this application. More specifically, the SEARs required the preparation of an Aboriginal Cultural Heritage Assessment Report (ACHAR) to demonstrate that the proposed works would not adversely affect items or areas of Aboriginal Cultural significance.

Accordingly, two separate ACHAR's have been prepared for the subject land by Biosis having regard to the relevant requirements of OEH. Further details regarding the results of the ACHAR are discussed in **Section 7.4** of this EIS and a full copy of the report is included in **Attachment E**.

In summary, the attached ACHAR's demonstrate that the proposed quarry will not adversely affect matters regarding Aboriginal Cultural Heritage, which satisfies the requirements of clause 5.10 of the LEP.

4.4.5 Clause 7.1 – Earthworks

Clause 7.1 relates to earthworks and aims to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land.

As the development involves an extractive industry that requires earthworks and the extraction of in-situ materials, the development requires development consent in accordance with the provisions of this clause.

Before granting development consent for the proposed earthworks, Council must consider the following matters:

- (a) *the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality,*
- (b) *the effect of the proposed development on the likely future use or redevelopment of the land,*
- (c) *the quality of the fill or the soil to be excavated, or both,*
- (d) *the effect of the proposed development on the existing and likely amenity of adjoining properties,*
- (e) *the source of any fill material and the destination of any excavated material,*
- (f) *the likelihood of disturbing relics,*
- (g) *the proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area.*

The proposed development has regard to the above matters and is generally considered to be consistent with these heads of consideration as outlined below:

- The proposed development will not alter any existing drainage patterns as the site has already been highly modified and disturbed as part of previous quarrying activities undertaken on-site. Notwithstanding, stormwater run-off will continue to be collected via a number of existing detention basins on-site to maintain existing drainage patterns.

As outlined within this report, the area of proposed works is comprised of hard rock and subject land has operated as a quarry for the past 45 years and has not been subject to any soil instability.

- The proposal seeks to use the subject land as an extractive industry in the short-medium term. Following the completion of all quarrying activities on-site, it is proposed to rehabilitate this land back to rural paddocks and grasslands consistent with a number of

adjoining uses. In order to achieve this, the land will need to be rehabilitated, back-filled and reshaped to create a natural environment;

- The development will involve the ripping and stockpiling of topsoil, which will allow for the exposure of hard rock beneath the surface. This soil is clean virgin material and will be stockpiled on-site immediately adjacent to the area of works, which will be later used to backfill these exhausted areas.
- The proposed quarrying activities and associated earthworks will not have an adverse effect on the amenity of adjoining properties as they will be screened from view to these residents due to the topography of the land and their location below the ridgeline;
- No excavated soil will be transported off-site, but will rather be stockpiled and used on-site for later use as part of the rehabilitation stage of the project. Excavated and processed materials will be transported off-site and will be used in local road construction projects as part of the site operator's road construction business. Any other fill necessary to back-fill the site will be clean virgin fill that will be sourced from construction and residential subdivision sites within the Albury Wodonga area;
- Two Aboriginal Cultural Heritage Assessment Reports were prepared for the site, which confirmed that the area of proposed works does not contain, or is highly unlikely to contain any relics or artefacts; and
- The area of proposed works is located a minimum distance of over 600 metres away from the closest waterway, being Eight Mile Creek to the south. The extraction of materials on-site and the crushing of recycled concrete will both not have an adverse impact on this watercourse as they do not involve the use of any chemicals on-site.

4.4.6 Clause 7.6 – Essential services

Clause 7.6 of ALEP 2010 requires that services essential to the development are available or that adequate arrangements can be made to make them available. The proposal satisfies the requirements of this clause because it is already serviced with all relevant reticulated infrastructure required for the purposes of an extractive industry such as potable water, electricity, stormwater drainage and roads.

More specifically, the subject land contains a number of easements including:

- *Right of Carriageway (20m wide):*
Applies to the unsealed Winchester Lane and provides legal access over this roadway for the existing quarry on-site, as well as the residential dwelling located at 96 Winchester Lane and the Albury Wodonga Clay Target Club. This easement will remain unchanged as a result of the proposed development.
- *Water Supply (variable and 4m wide)*
A water supply easement currently runs parallel with the existing right of way along Winchester Lane and provides reticulated water to the existing dwelling at 96 Winchester Lane. This easement will remain unchanged as a result of the proposed development.

- Electricity (20m wide)

This easement provides electricity supply to Pit 3 of the existing quarry located within the central portions of the site and generally runs in a north-east/south-west direction and connects to Gerogery Road. It is noted that this electricity easement currently bisects the proposed Pit 3 expansion area. As a consequence, the existing electricity easement will be decommissioned and a new easement will be established around the western boundary of the proposed quarry expansion area (see proposed site plan in **Attachment B**).

Matters regarding sewerage are also adequate and are managed via an on-site septic system, which is currently connected to an existing staff amenities building containing a small breakroom and toilet facilities. The septic disposal area is located immediately south of the existing staff amenities building and to the east of the existing crushing plant. This septic disposal area will not change as a result of the proposed development and it is clarified that the size of the existing staff amenities building will not increase nor will the number of staff working on-site.

At present, stormwater drainage and run-off is collected and treated via a series of detention basins (dams) located on-site that detain and gradually filter the water maintaining pre-development flows. These basins are used to store stormwater run-off and are used as a source of water to water down stockpiles, unsealed roads and plant and machinery to limit opportunities for dust generation.

Primary vehicular access to the site is derived from the unsealed Winchester Lane, which intersects with the adjoining sealed Gerogery Road located to the east and is used to access Pit 3. A secondary unsealed access road also exists approximately 1.2 kilometres further south towards the Nexus industrial estate via a Travelling Stock Reserve (TSR) that is used to access Pit 1.

A TIA was prepared as part of the subject development to determine the likely traffic impacts of the proposal. In summary, the report concluded that a number of earth embankment works need to be undertaken to the Gerogery Road road reserve on the northern side of Winchester Lane, so as to achieve relevant sight distance requirements. Furthermore, it was also identified that a number of trees (re-growth) have also been identified as requiring removal and/or pruning by the relevant road authority within an adjoining Crown Travelling Stock Reserve located to the south of the Winchester Lane intersection, so as to also achieve the relevant sight distances to the south. Further details regarding traffic and access are discussed in **Section 7.9** of this report.

4.5 Albury Development Control Plan 2010

The *Albury Development Control Plan 2010* (the DCP) provides specific requirements for development within the Albury LGA. The following chapters of the DCP are applicable to the proposed development:

- Chapter 3 – Development Notification Policy
- Chapter 5 – Tree Preservation
- Chapter 6 – Planning for Hazards
- Chapter 8 – Development in the Environmental Zones
- Chapter 9 – Development in the Rural Zones

The above matters are addressed in the following sections.

4.5.1 Chapter 3 – Development Notification Policy

Chapter 3 and Appendix B of the DCP provides details for notification of applications. The proposal is not identified as a type of development exempt from notification (Chapter 1.4.1 of Appendix B) and therefore must be notified in accordance with the requirements of the DCP.

The proposal is classified as 'Designated Development' and 'Integrated Development' in accordance with Table 1.2 of Appendix B must be publicly exhibited for a period of 30 days

4.5.2 Chapter 5 – Tree Preservation

As outlined within **Section 4.4.3** of this report, the proposed development will involve the removal of 19 trees, some of which are hollow-bearing, as part of the long-term expansion of this extractive industry (see proposed site plan contained in **Attachment B**).

Nonetheless, in accordance with **Section 4.4.3** of this chapter, all remaining trees not recommended for removal will be protected via the installation of Tree Protection Zones. These areas will be fenced off from work areas and no machinery or materials will be permitted to be located within the drip zone of these trees to ensure that no damaged is caused.

It is clarified that no tree removal is proposed within Pit 1 as all existing site operations will remain the same.

4.5.3 Chapter 6 – Planning for Hazards

Chapter 6 of the DCP provides details regarding planning for hazards. The subject land is not identified as flood prone land, but is however partly classified as 'Vegetation Category 2' and 'Vegetation Buffer' on the *Albury Bushfire Prone Land Map, 2014* (see **Figure 33**). Accordingly, the provisions of this chapter apply.

The proposal does not require the preparation of a Bushfire Safety Authority and is not classified as 'integrated development' for the purposes of s.91 of EP&A Act as it does not involve the subdivision of land or a 'special fire protection purpose'.

Notwithstanding, the development does require approval under s.79BA of the EP&A Act and the consent authority must be a satisfied that the development conforms to the requirements of *Planning for Bushfire Protection Guideline* (PBP). It is noted that Chapter 6 of the DCP largely defers to the provisions of this guideline.

Furthermore, PBP was developed to provide a guide to the necessary planning considerations when developing areas for residential use which are likely to be affected by bushfire. While the requirements do not specifically apply to a project of this nature, the methods provided for calculating APZ's from PBP have been used as a general guide in this assessment.

Given the small area of affectation, the generally sparse vegetation cover on-site, as well as the fact that the proposed area of works is not bushfire prone and does not involve any habitable building or structure, it is expected that there will be no Bushfire Attack Level (BAL) rating applicable to the development in this instance.

In summary, the proposed development will not have an adverse impact with regards to bushfire protection measures, which is consistent with the requirements of this chapter of the DCP.

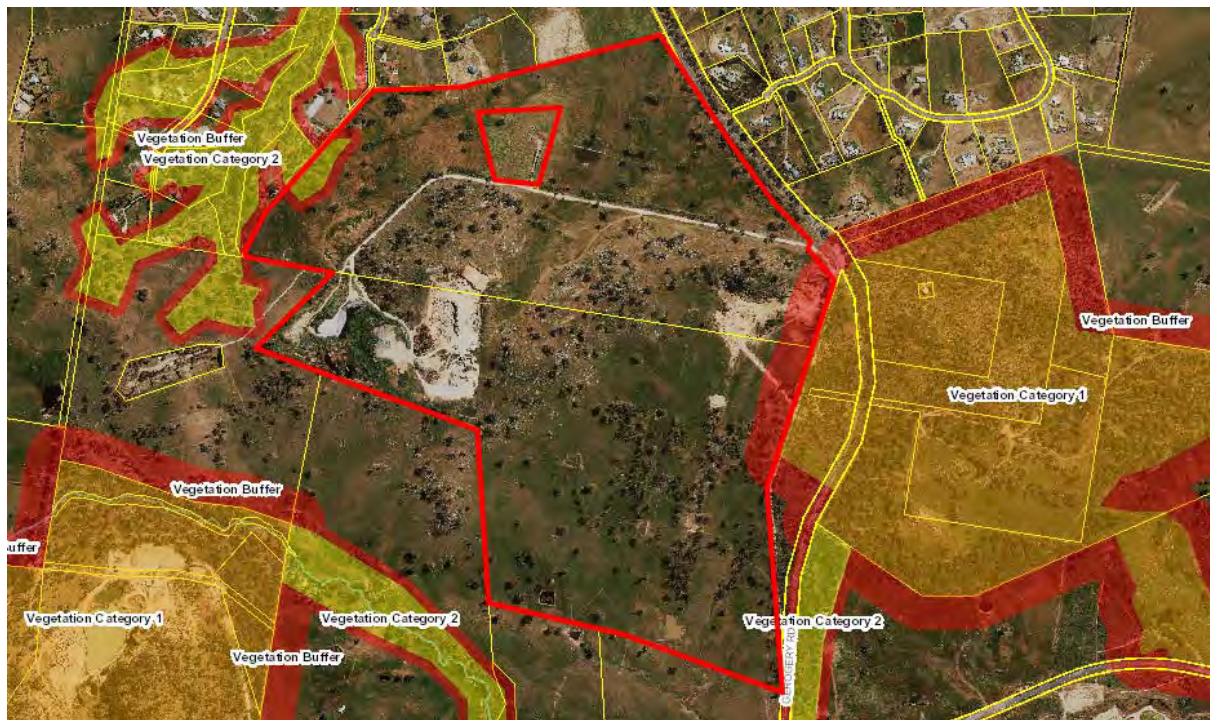


Figure 33: Extract of Albury Bushfire Prone Land Map showing the subject land (in red outline)
(Source: Albury Bushfire Prone Land Map, 3 October 2014)

4.5.4 Chapter 8 – Development in the Environmental Zones

The subject land is part zoned E3 Environmental Management under the LEP and the provisions of Chapter 8 of the DCP therefore apply.

Following a review of the controls contained within this Chapter, it is noted however that there are no specific controls pertaining to development in the environmental zones. Nonetheless, Section 8.3.12 of this Chapter although related to subdivision, does relate to the protection and management of resources and landscape character.

In particular, this control requires that a site analysis plan be prepared to identify the presence of minerals or basic raw materials that potential future extraction could result in community and economic benefits for the City or provide basic raw materials for local industry processes, roads and other construction needs.

The ongoing use and expansion of the subject land as an extractive industry is generally considered to be consistent with this requirement. Likewise, the proposed extractive industry will not have an adverse long term environmental impact as demonstrated in this report.

4.5.5 Chapter 9 – Development in the Rural Zones

The subject land is part zoned RU2 Rural Landscape under the LEP and the provisions of Chapter 9 of the DCP therefore apply.

Similar to the requirements outlined in Chapter 8 above, there are no specific rural planning controls applicable to an extractive industry and associated works outside of consideration of the protection and management of resources and landscape character required as part of a subdivision proposal (see control 9.2.12).

As outlined above, the ongoing use and expansion of the site as an extractive industry is generally considered to be consistent with this requirement. Likewise, the ongoing use of the site as an extractive industry is not expected to have an adverse impact on surrounding or nearby productive agricultural lands.

4.6 Guidelines

4.6.1 EIS Guidelines – Extractive Industries – Quarries

The former NSW Department of Urban Affairs and Planning (DUAP) prepared an EIS Guideline for Extractive Industries – Quarries. The purpose of this guideline is to identify issues that need to be addressed in the preparation of an EIS for extractive industries. The content of the Guideline has been taken into consideration in the preparation of the EIS including identification of the issues that need to be addressed.

4.6.2 Agricultural Issues for Extractive Industry Development (DPI)

The NSW Department of Primary Industries (DPI) has prepared a Fact Sheet for Agriculture Issues for Extractive Industry Development. The purpose of this guideline is to set out the relevant agricultural issues for consent authorities to consider when assessing a proposal to develop rural land for extractive industries.

The following principles have been identified as part of this Fact Sheet when planning for sustainable agriculture and extractive industries:

- *Extractive industry developments are consistent with strategic plans and zone objectives.*
- *Extractive industry developments are designed and managed to minimise environmental impacts.*
- *Land use conflicts are minimised, amenity values are protected and the expectations of local communities are managed.*
- *Rehabilitation is undertaken progressively and any permanent changes to productive capacity are clearly justified.*
- *Proposals are clearly justified in a regional context and identify the merits and community benefit of the proposal.*
- *Development Applications duly consider the following potential impacts and identify suitable mitigation responses for:*
 - o *Impacts on agricultural resources;*
 - o *Transport and access changes;*
 - o *Rehabilitation plans;*
 - o *Consultation with rural stakeholders;*
 - o *Mitigation and monitoring*

The Fact Sheet also identifies a number of key heads of considerations to be assessed as part of the development application including:

- *Agricultural Resource Impacts;*
- *Water Resources;*
- *Transport and Access Changes;*
- *Rehabilitation Plans;*
- *Consultation;*
- *Mitigation and Monitoring; and*
- *Strategic Planning.*

Following a review of these principles and key heads of consideration, the proposed expansion of the existing extractive industry is considered to be consistent with these requirements as:

- it is consistent with identified strategic plans and policies for the area that seek to protect the existing quarrying operations on-site;
- it has been designed to minimise and manage environmental impacts and the site will be gradually rehabilitated over time to ensure the environmental impacts are minimised;
- it will not create issues regarding land use conflicts or amenity concerns as the quarry will continue to operate as it has done so for the past 45 years with little to no concerns;
- it will not adversely affect existing agricultural resources as the land has already been developed for the purposes of an extractive industry;
- it will implement mitigation and monitoring measures to ensure that no adverse impacts are created as a result of the proposal;
- it will not affect existing drainage lines or create issues of flooding;
- it will maintain existing site access arrangements;
- it has been designed and prepared in consultation with key relevant public authorities;

4.6.3 Waste Classification Guidelines 2014

The NSW EPA document titled *Waste Classification Guidelines 2014* outlines the common types and classifications of waste for the purposes of clause 49 of Schedule 1 of the POEO Act.

This guideline applies to the subject land as the site accepts and disposes of biosolid waste from the nearby Norske Skog Paper Mill. Following a review of this guideline, the subject waste is classified as 'General solid waste (putrescible)', which is defined as follows:

- *household waste that contains putrescible organics*
- *waste from litter bins collected by or on behalf of local councils*
- *manure and night soil*
- *disposable nappies, incontinence pads or sanitary napkins*
- *food waste*
- *animal waste*
- *grit or screenings from sewage treatment systems that have been dewatered so that the grit or screenings do not contain free liquids*
- *any mixture of the wastes referred to above.*

Following a review of these guidelines, it is also confirmed that the waste is not classified as 'hazardous waste' as the waste has previously been chemically assessed by Norske Skog, being the generator of this waste and therefore does not require treatment prior to disposal. It is noted that a resource recovery exemption has already been issued by the EPA in relation to the disposal of this waste to nearby farmland paddocks within a 20 kilometre radius of Norske Skog. The waste is also classified as putrescible as the waste readily decays.

Notwithstanding the above, no further consideration of this waste classification guideline is required, as the works are already approved and will continue to operate in accordance with the requirements of this approval.

4.6.4 Environmental Guidelines – Solid Waste Landfills (2nd Edition) (2006)

As outlined above, the subject land currently accepts and disposes bio-solid wastes from the adjoining Norske Skog Paper Mill, which is classified as a 'landfill' for the purposes of this guideline.

Notwithstanding, as these works are already approved and do not require any further approvals or amendments to the existing EPA Licence, further consideration of the requirements of this guideline is not required in this instance.

4.6.5 Environmental Guidelines – Use and Disposal of Biosolid Products

As outlined above, the subject land currently accepts and disposes bio-solid wastes from the adjoining Norske Skog Paper Mill, which is classified as a 'landfill' for the purposes of this guideline.

Notwithstanding, as these works are already approved and do not require any further approvals or amendments to the existing EPA Licence, further consideration of the requirements of this guideline is not required in this instance.

4.6.6 NSW Industrial Noise Policy 2000

The NSW EPA published the NSW *Industrial Noise Policy* (INP) in January 2000. The policy is specifically aimed at assessing noise from industrial noise sources scheduled under the POEO Act and therefore applies in this instance.

In accordance with the requirements of the SEARs, a Noise Impact Assessment has been prepared in support of the proposed development based on the recommendations and requirements of this policy. This assessment has confirmed that the proposed quarry and associated works will operate within acceptable limits.

Further details regarding noise are discussed in **Section 7.3** of this Report and a copy of the Noise Impact Assessment is provided as **Attachment G**.

4.6.7 NSW Road Noise Policy 2011

The NSW EPA published the NSW *Road Noise Policy* in March 2011, which replaced the previous *Environmental Criteria for Road Traffic Noise*. The Policy contains strategies to address the issue of road traffic noise from, among other things, traffic generating developments.

Accordingly, an assessment of the proposal against this Policy was undertaken as part of the Noise Impact Assessment prepared for the site. Similar to the INP, the proposed quarry and associated works will operate within acceptable limits.

Further details regarding noise are discussed in **Section 7.3** of this Report and a copy of the Noise Impact Assessment is provided as **Attachment G**.

4.6.8 Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration 1990

The Australian and New Zealand Environment Conservation Council (ANZECC) provide guidelines in the document *Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration 1990*.

The guidelines recommended maximum level for ground vibration is 5 mm/s (peak particle velocity - ppv). Notwithstanding, the ppv level of 5 mm/s may be exceeded on up to 5% of the total number of blasts over a period of 12 months, however the level should not exceed 10mm/s at any time.

Accordingly, a blast report was prepared as part of the Noise Impact Assessment following the completion of two blasts conducted on-site by Hamilton's Blasting Services on Thursday 11 May 2017. Following assessment, the level of peak particle velocity was below 5 mm/s during all measurements at all receptor locations.

Further details regarding blasting and ground vibrations are discussed in **Section 7.3** of this Report and a copy of the Noise Impact Assessment is provided as **Attachment G**.

4.6.9 Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010

Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act) requires that any Aboriginal Cultural Heritage investigations be undertaken in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) ('the code'). The code has been developed to support the process of investigating and assessing Aboriginal cultural heritage by specifying the minimum standards for archaeological investigation undertaken in NSW under the NPW Act. The archaeological investigation must be undertaken in accordance with the requirements of the code.

It is noted that the Aboriginal Cultural Heritage Assessment Report (ACHAR) that was prepared for the site by Biosis has been prepared in accordance with the requirements of this code.

4.6.10 Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010

The Aboriginal community was consulted regarding the heritage management of the project throughout its lifespan and was undertaken as per the process outlined in the DECCW document titled *Aboriginal cultural heritage consultation requirements for proponents 2010*.

4.6.11 Approved Methods for the Modelling and Assessment of Air Pollutants in NSW 2016

Air quality impact assessment criteria are prescribed by the NSW EPA document titled *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (known as 'the Approved Methods'). The document lists the methods that are legally approved for modelling and assessing air pollutants from industrial premises when conducting air quality impact assessments.

In accordance with the requirements of the SEARs, an Air Quality Impact Assessment has been prepared in support of the proposed development based on the recommendations and requirements of this policy. This assessment has confirmed that the proposed quarry and associated works will operate within acceptable limits.

Further details regarding air quality are discussed in **Section 7.7** of this Report and a copy of the Noise Impact Assessment is provided as **Attachment G**.

4.6.12 Guide to Traffic Generating Development 2002

The NSW Roads and Maritime Service document titled a *Guide to Traffic Generating Development 2002* ('the guide') outlines all aspects of traffic generation considerations relating to developments.

The guide provides information regarding traffic issues for those submitting Development Applications, and for those involved in the assessment of these applications.

In accordance with the requirements of the SEARs, a Traffic Impact Assessment has been prepared in support of the proposed development based on the recommendations and requirements of this guideline. This assessment concludes that the proposed development will not have any adverse impacts with regards to the generation of traffic and will operate within acceptable limits.

Further details regarding traffic and access are discussed in **Section 7.9** of this Report and a copy of the Traffic Impact Assessment is provided as **Attachment F**.

4.6.13 Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections.

In addition to the requirements of the guide above, the Traffic Impact Assessment was also prepared in accordance with the *Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections*, as well as a supplementary Austroads Guide in relation to these types of intersections.

Following the completion of this assessment, it was confirmed that the existing intersection of Winchester Lane and Gerogery Road does not meet the current sight line requirements of these Guidelines. In response, it is recommended that a number of amelioration works be undertaken in order to achieve the relevant sight line requirements of this guide including earth embankment works and the pruning and/or removal of a number of existing trees and vegetation on-site (re-growth).

Further details regarding traffic and access are discussed in **Section 7.9** of this Report and a copy of the Traffic Impact Assessment is provided as **Attachment F**.

4.6.14 Managing Land Contamination: Planning Guidelines: SEPP55 - Remediation of Land

The NSW EPA document titled *Managing Land Contamination: Planning Guidelines: SEPP55 - Remediation of Land* seeks to establish 'best practice' for managing land contamination through the planning and development control process.

In particular, Table 1 of this Guideline includes a list of activities that may cause contamination. Of relevance to the subject proposal includes: mining and extractive industries, landfills and waste storage and treatment facilities, which are all currently conducted from the subject land.

As outlined in **Section 4.3.7** of this report, SEPP 55 generally requires that consideration be given to whether or not land proposed for development is contaminated and fit for use for its intended purpose.

Given that the subject land has historically been used as an extractive industry (quarry), with associated crushing of concrete and disposal of biosolid waste, and the fact that the current proposal seeks to continue these activities, the land is considered fit for use for its intended purposes and therefore the relevant considerations of SEPP 55 are satisfied by the current proposal.

4.6.15 Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry 2006

The Commonwealth Department of Industry, Tourism and Resources prepared the handbook titled *Mine Closure and Completion: Leading Practice Sustainable Development Program for the Mining Industry 2006* and is used to address the practice of mine closure and completion.

The key objectives of this plan are to establish a mine closure plan and the preparation of a progressive rehabilitation plan which ensures:

- the post-mined landscape is safe and is stable from physical, geochemical and ecological perspectives;
- the quality of the surrounding water resources is protected;
- the agreed sustainable post-mining land use is established and clearly defined to the satisfaction of the community and government;
- success criteria are agreed with relevant stakeholders, monitored and reported to stakeholders.

The development of a mining operation, including associated processing facilities and infrastructure, usually involves the permanent alteration of existing landforms, disturbance to vegetation and flora, disruption of fauna habitats, hydrological impacts and potentially some level of contamination

Environmental management of these issues during operations can assist in minimising the impacts. However, there will inevitably be residual impacts at the completion of the mining and processing operations that will need to be managed with regard to the following priorities: public safety hazards and risk, potential sources of ongoing pollution, future land use and resource demands, ecological compatibility, community expectations, aesthetics and cost.

In response, a rehabilitation plan will be prepared for the site having regard for the principles of this handbook and that seeks to address ongoing rehabilitation works, as well as final rehabilitation works to ensure a final landform that is self-sustaining and safe. Further details regarding rehabilitation are discussed in **Section 7.15** of this report.

4.6.16 Mine Closure – Leading Practice Sustainable Development Program for the Mining Industry, 2016

The Leading Practice Sustainable Development Program is managed by a steering committee chaired by the Australian Government Department of Industry, Innovation and Science and has resulted in the preparation of a series of handbooks to share Australia's world-leading experience and expertise in mine management and planning. The handbooks provide practical guidance on environmental, economic and social aspects through all phases of mineral extraction, from exploration to mine construction, operation and closure.

Mining development has generated a range of positive cumulative impacts at the local and regional scales, such as local business development, employment and the provision of services and infrastructure. However, accompanying these benefits are potentially far-reaching impacts that are challenging traditional regulatory and management responses, including:

- increased airborne dust and pollutants
- effects on water quality from mine site discharge
- visual amenity impacts
- land-use conflict, particularly in relation to high-quality agricultural land and urban fringes
- loss of biodiversity and impacts on ecosystem services.

The purpose of the handbook is to outline that planning for mine closure is critical and should be done progressively throughout the various phases of the mining project's life cycle and integrated completely into the company's normal business planning and practice.

The handbook emphasises the need for mining to focus on developing closure objectives and completion criteria that are based on the post-mining land use as the goal of mine closure. It encourages systematised closure planning, as unplanned closures are not cost-effective and often result in substandard rehabilitation. Early recognition of rehabilitation and closure costs promotes improved strategies for operations to plan additional mitigation strategies and anticipate progressive closure and reclamation activities.

In response, a rehabilitation/mine closure plan will be prepared for the site having regard to the principles of this handbook that seeks to address ongoing rehabilitation works, as well as final rehabilitation works to ensure a final landform that is self-sustaining and safe. Further details regarding rehabilitation are discussed in **Section 7.15** of this report.

4.6.17 Survey Guidelines for Australia's Threatened Reptiles, 2011

Following the completion of a Biodiversity Assessment for the subject land, it was concluded that the study area contained potential suitable habitat for the Pink Tailed Worm Lizard *Aprasia parapulchella*, which is listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*.

This report recommended that consideration be given to the completion of targeted surveys for this species to relieve some of the ambiguity surrounding the impacts to this cryptic species.

In response, the proponent engaged the services of Dr Damian Michael, who is an expert in this species to determine the likelihood of this species being present on-site. A habitat assessment was subsequently conducted of the study area in accordance with the Department of Sustainability, Environment, Water, Population and Communities document titled *Survey Guidelines for Australia's Threatened Reptiles, 2011*.

The survey guidelines recommend that between 150-200 rocks be turned to determine if the species is present. In accordance with these guidelines, a total of 293 surface rocks were turned and were inspected for signs of the Pink Tailed Worm Lizard.

Following completion of this survey, it was concluded that the Rockwood site supports low density of suitably-sized surface rocks and low numbers of host ant species. Based on this survey, habitat assessment and available information on Pink Tailed Worm Lizard ecology in the Albury LGA, the probability of this species being present on this site is low.

4.6.18 Managing Urban Stormwater: Soils and Construction - Volume 2E: Mines and Quarries

The former NSW Department of Environment and Climate Change (DECC) prepared the document titled *Managing Urban Stormwater: Soils and Construction – Volume 2E: Mines and Quarries* to provide guidelines, principles and recommended minimum design standards for erosion and sediment control at mines and quarries. Specifically, the publication guides the user in the application of the principles and practices of erosion and sediment control described in Volume 1 of *Managing urban stormwater: soils and construction* (Landcom 2004) to mines and quarries

Mines and quarries, particularly those involving surface extraction, often involve significant areas of land disturbance and earthworks which require the planning, design, construction and maintenance of effective erosion and sediment control measures. Mines and quarries of a range of scales and types exist throughout New South Wales. A range of water management issues need to be considered at mines and quarries, including the use of water for:

- dust suppression
- site revegetation
- mineral processing
- the washing or separation of extracted materials; and
- the management of stormwater within, and sometimes outside, the site.

The scale and nature of contemporary mines and quarries mean that they have the potential to significantly impact surface runoff and groundwater quality through contamination with dissolved and suspended material. Water-quality issues in mines and quarries include:

- sediment-laden runoff from overburden emplacements, waste-rock dumps, stockpiles and other disturbed areas
- stormwater contamination from process plants, workshops, vehicle wash-down areas etc.
- acidic mine drainage from the oxidation of sulfur or sulfuric ores, which can also contain dissolved heavy metals
- elevated salinity levels, as mining can disrupt saline aquifers or allow salt to be leached from freshly shattered overburden.

The most common surface-water contaminant from mining and quarrying is sediment or 'total suspended solids' (TSS), produced by soil erosion from lands disturbed by the mining or quarrying activity.

In response, the proposed development has been designed to incorporate a number of sediment and erosion control methods so as to minimise the impacts of environmental harm. It is noted that given the current use of the site as a quarry, many of these techniques have already been established as outlined as follows:

- The development will limit the extent of works and area of disturbance at any time with extraction occurring in accordance with an approved staging plan. Similarly, once these areas have been exhausted, rehabilitation works will occur in a staged manner to ensure that areas of disturbance that could be subject to sediment and erosion problems are limited;
- Ripped and excavated topsoil will be either immediately reused in current rehabilitation works or will be stockpiled immediately adjacent to the area of works for later use in the rehabilitation phase of the project. These areas will be stabilised and located immediately adjacent to the area of works and will be protected by cut-off drains that divert clean water around the quarry operations;
- Cut-off and diversion drains will be established and maintained around the area of disturbance to divert upslope 'clean' water away from disturbed areas. More specifically, stormwater run-off will be collected in the waste disposal area via leachate dams, where it will be stored and later used to irrigate vacant paddocks;

- Stormwater run-off will be collected and filtered via a series of detention basins contained on-site, where it will be re-used as part of an overall water-management strategy for the site to avoid or reduce discharged of polluted water. Such non-potable water uses include irrigation of revegetated areas, as well as dust suppression of unsealed roads via water truck and the spraying down of materials as part of the crushing, screening and stockpiling process. This in turn will also reduce consumption from other water sources;
- Rehabilitation works will be staged and ongoing so as to limit the area of disturbance and return the lands to their final landform as quickly as possible. The final landform will be stabilised and reshaped to minimise steep slopes and ensure a free flowing drainage system consistent with what would have existed prior to works occurring on-site;
- Rehabilitated areas will be backfilled, stabilised and added with topdressing material to improve their structural integrity. More specifically, biosolid waste materials will be utilised (in the waste disposal area), which has been proven to improve soils, overburden and waste rock due to its nutrients, which help improve surface structure and water infiltration;
- Areas that have been rehabilitated will be fenced off to prevent access by stock for at least the first two years to ensure that by this time, plants are strong enough to resist trampling and their root systems are sufficiently developed to prevent plants being pulled completely pulled out of the ground by grazing stock.

These erosion and sediment control techniques will be maintained and periodically reviewed, particularly prior to, and post heavy rainfall events to ensure that they remain effective.

4.6.19 NSW State Groundwater Policy Framework Document, 1997

The former Department of Land and Water Conservation prepared the *NSW State Groundwater Policy Framework Document, 1997* to manage the State's groundwater resources so that they can sustain environmental, social and economic uses for the people of NSW.

The document provides a high-level assessment of the importance of groundwater resources in NSW, but defers to a set of component policies with regards to groundwater quantity protection, groundwater quality protection and groundwater dependent ecosystems. Further details regarding these policies are discussed below.

4.6.20 NSW State Groundwater Quantity Management Policy

In accordance with the *NSW State Groundwater Policy Framework Document*, the NSW Government produced several component policies to accompany this document, including the *NSW State Groundwater Quantity Management Policy*.

Following a review of this policy guideline, the proposed ongoing use of the site as an extractive industry is not expected to have an adverse impact on groundwater quantity as no water is extracted from the groundwater as part of the quarrying process, with the primary source of water used on-site being re-used stormwater and potable water for use in a small site office.

4.6.21 NSW State Groundwater Quality Protection Policy

In accordance with the *NSW State Groundwater Policy Framework Document*, the NSW Government produced several component policies to accompany this document, including the *NSW State Groundwater Quality Management Policy*.

Prior to the initial disposal of Norske Skog biosolid waste, a hydrogeological Assessment was prepared for the site by GHD in May 1993 to determine what impacts, if any, had been created by the disposal of biosolid waste on-site since initial disposal in 1983. The assessment was also required to assess what the likely environmental impacts would be from continuing to dispose of this waste within a proposed waste disposal area located to the south west of Pit 3.

The report concluded that site operations have probably marginally increased recharge to the regional aquifer and resulted in localised perched aquifers at the toe of the dams. These changes in the hydrogeological regime are minor in a regional sense, hence will not adversely impact upon regional groundwater levels or quality.

4.7 Integrated Development & Approvals Required

Under Section 91 of the EP&A Act a proposal is “integrated development” if in addition to the development consent it requires additional approvals under related legislation.

As outlined within Section 2.2.2 of this report, the existing quarry is already subject to EPA License No. 10069 as the development is classified as a ‘scheduled activity’ as it involves the operation of an extractive industry that processes more than 30,000 tonnes of material and involves waste disposal by application to land (see **Appendix G**).

Accordingly, this license will need to be updated to reflect the current proposal.

No other approvals are required under any other Acts in this instance.

5. Strategic Plans & Policies

5.1 State

5.1.1 Riverina Murray Regional Plan

The *Riverina Murray Regional Plan* is the relevant sub-regional strategy and provides the strategic planning framework to guide decision-making and development in the Riverina-Murray region for the next 20 years.

Underpinning the Regional Plan are four (4) key goals:

- Goal 1 – A Growing and Diverse economy;
- Goal 2 – A Healthy Environment with Pristine Waterways;
- Goal 3 – Efficient Transport and Infrastructure Networks; and
- Goal 4 – Strong, Connected and Healthy Communities.

Contained under these goals are a number of Directions and Actions that aim to achieve the objective of these goals. There are a number of directions contained under Goals, 1, 2 and 4 that are relevant to the assessment of the proposal, including:

Direction 12: Sustainably manage mineral resources

This direction is aimed at protecting areas containing mineral and energy resources so that valuable resources are not sterilised.

The subject proposal is consistent with this direction as it seeks to continue the life of an existing operating quarry, which is currently used to extract important road base materials and other construction products. At present, there is still over 50 years worth of supply of materials on-site and in the absence of the current proposal, the extraction of these important materials will not be realised.

Direction 15: Protect and manage the region's many environmental assets

This direction is aimed at protecting areas of high environmental value and minimising potential impacts arising from development.

Whilst it is acknowledged that a portion of the subject land is zoned E3 Environmental Management under the LEP and is contained within the area of future extraction, the current proposal does not propose an expansion of the existing area of extraction beyond that already previously approved for the subject land.

As a consequence, the environmental impacts of the proposal are considered minor as demonstrated within this assessment.

Direction 22: Promote the growth of regional cities and local centres

This direction is aimed at promoting and supporting the growth of regional cities, such as Albury, which will encourage investment, increases the supply of housing and increase job opportunities and services.

The subject proposal is consistent with this direction as it will support the ongoing operation of an existing operating extractive industry. This in turn will support the local housing and construction industry and the local economy in general.

Direction 27: Manage rural residential development

This direction is aimed at managing rural residential development and limiting potential land use conflicts with surrounding lands.

Whilst the subject proposal does not relate to rural residential development it does adjoin an area currently used for rural residential development, which has the potential to create land use conflicts. It is noted however that the existing quarry was established prior to the development of adjoining lands for rural residential development.

Notwithstanding, in recognition of the historical and continued use of this land as an extractive industry, council has recently taken a number of measures to ensure that no further rural residential development will be permitted to occur within proximity to this facility, which is consistent with this direction.

Direction 29: Protect the Region's Aboriginal and Historic Heritage

This direction is aimed at protecting and promoting the regions' diverse cultural, historical and recreational assets that enrich the character of its places.

The subject proposal is consistent with this direction as two separate ACHARs have been undertaken for the site, which confirms that the development will not have an adverse impact on matters regarding Aboriginal Cultural Heritage.

5.2 Local

5.2.1 Rural Lands Strategy for Table Top & Splitters Creek

The *Rural Lands Strategy for Table Top and Splitters Creek* (Rural Lands Strategy) was commissioned by Albury City Council and aims to facilitate a coordinated approach to land development now and into the future for both the Table Top and Splitters Creek areas.

The purpose of the Rural Lands Strategy was to identify any future urban development opportunities, as well as areas considered appropriate for rural residential or rural lifestyle purposes. One of the key considerations of this plan was the preparation of a Land Use Conflict Analysis, which was used to inform the development scenarios and land use planning recommendations of this Plan (see **Figure 34**).

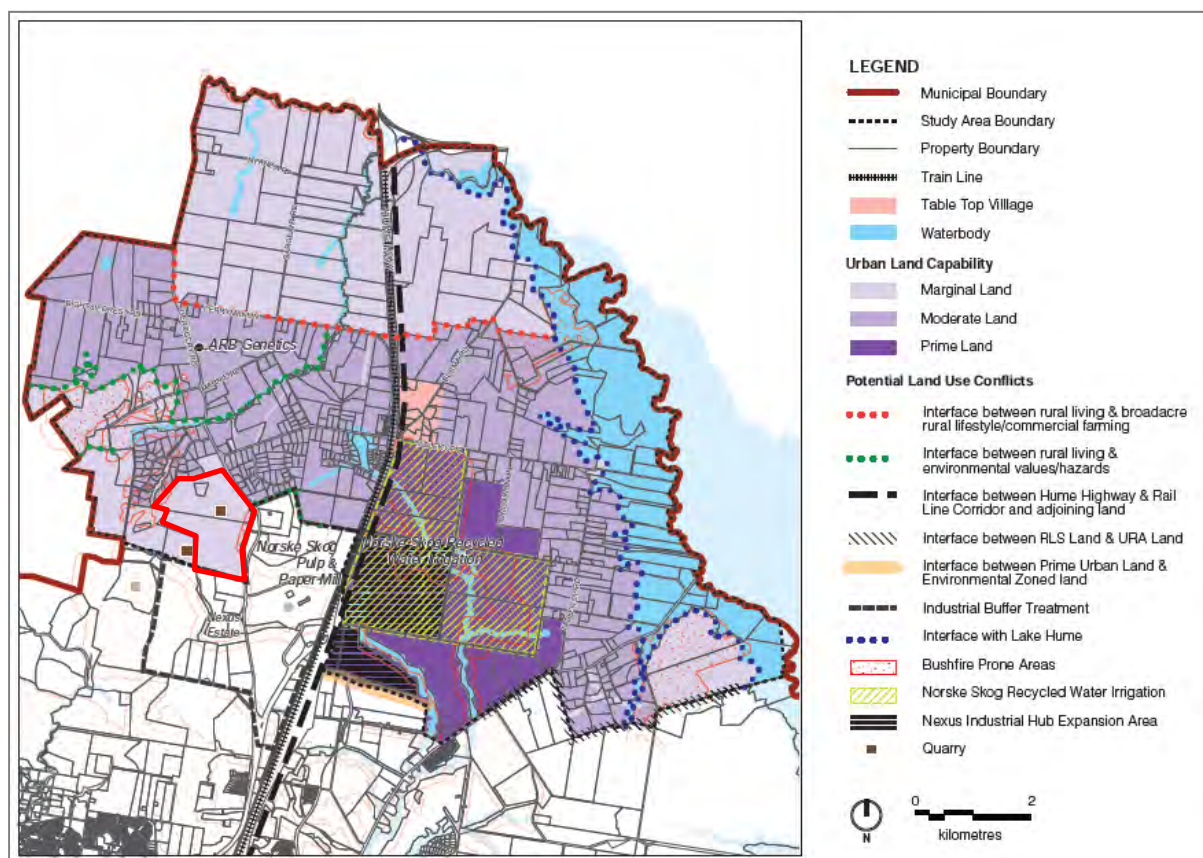


Figure 34: Potential Land Use Conflicts in Table Top (subject land shown in red outline)
(Source: Rural Lands Strategy, 2015)

Due to the continued operation of the existing quarry on the subject land, as well as the adjoining Burgess' quarry, the Rural Lands Strategy recommended that:

The RU2 zone is to be retained in areas that serve as a buffer between quarry activities and the existing rural residential estates.

Accordingly, the Rural Lands Strategy sought to protect the existing quarry on-site so as to ensure the ongoing protection of this important facility. The subject proposal is therefore consistent with the Rural Lands Strategy and seeks to allow for the ongoing use of this land as a quarry.

5.2.2 Albury Industrial Hub Master Plan (NEXUS)

The *Albury Industrial Hub Master Plan* was commissioned by Albury City Council in 2010 and provides an illustrative layout; design controls and development plan for the future development of the Albury Industrial Hub (see **Figure 35**).

The Industrial Hub Master Plan is relevant to the subject proposal as it immediately adjoins the subject land to the south and south-east and applies to the south east corner of the subject land.

Following a review of this Mater Plan, the ongoing use of this land as a quarry is generally consistent with Council's long-term vision for the development of the Albury Industrial Hub for large scale industrial purposes.

The two uses (industrial development and quarrying operations) are generally compatible with one another and will not create any issues regarding land use conflicts, noise or traffic. Likewise, due to the intermittent use of the subject land for extractive industrial purposes, this land also provides a good transition or buffer to surrounding rural residential dwellings, particularly to the north with regards to matters regarding noise.

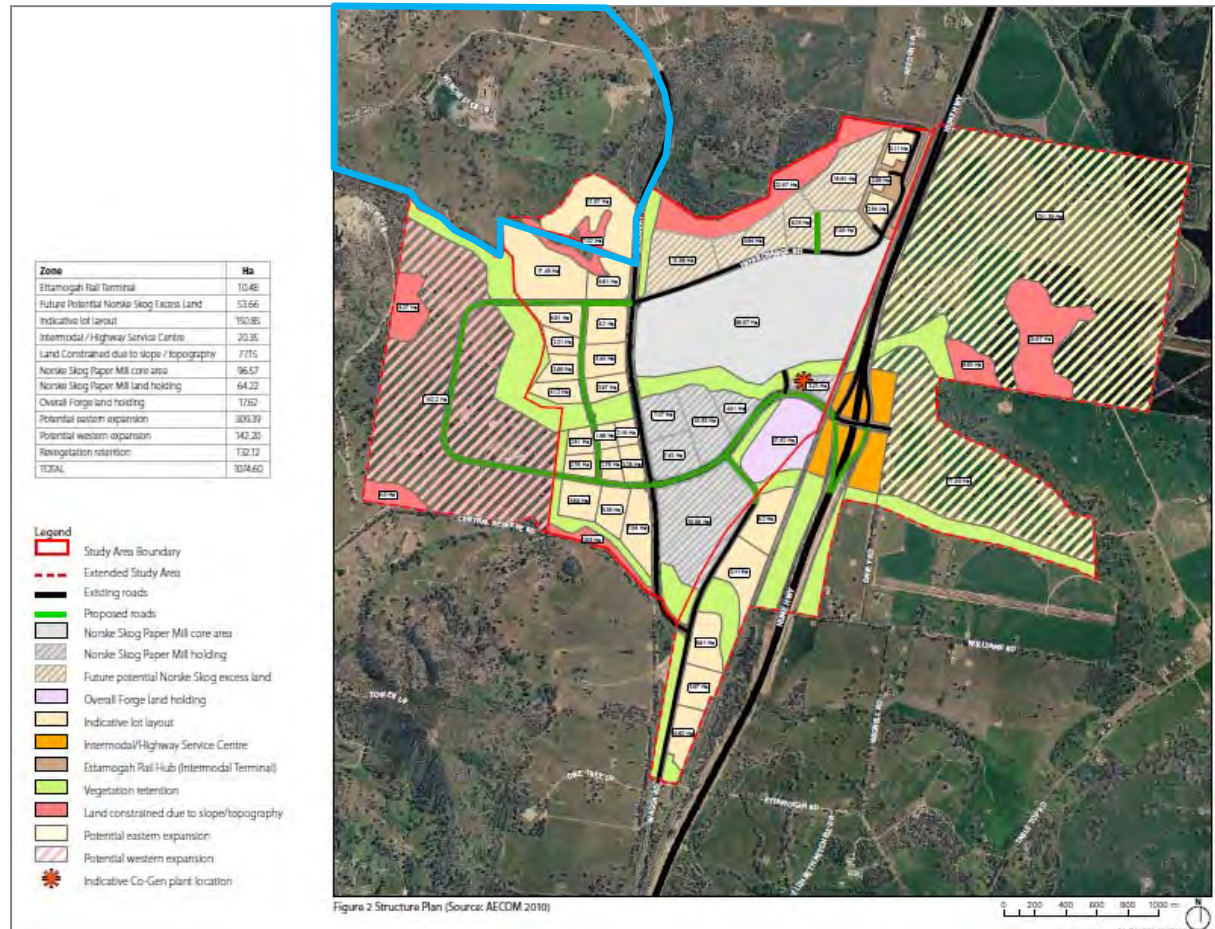


Figure 35: Albury Industrial Hub Master Plan (subject land shown in blue outline)
(Source: Albury Industrial Hub Master Plan, 2010)

5.2.3 Albury 2030

The *Albury 2030 Community Strategic Plan* is Council's local community strategic planning document. The Albury 2030 Plan includes the following strategic aims under the themes of *A Growing Sustainable Economy* and *An Enhanced Natural Environment*:

- 1.4.1 – Implement initiatives to reduce potable water consumption – for residents, business and industry
- 1.5.1 – Promote Albury as a major regional economy and the regional city of choice for lifestyle, career and investment opportunities
- 1.5.2 – Businesses and industries to participate in best practice sustainable programmes
- 1.5.5 – Support and promote business and business opportunities across all sectors to continue to foster economic diversity
- 2.1.3 – Facilitate and promote effective waste management practices

- 2.1.5 – *Promote sustainable development that compliments and respects the natural environment*
- 2.1.6 – *Minimise the impact of stormwater on natural systems*
- 2.2.3 – *Protect and enhance bushland areas and ensure connection between corridors*
- 2.3.4 – *Conserve European and Indigenous heritage in the Albury region*

The proposed use of the site as an extractive industry and associated crushing of recycled concrete is consistent with these strategic aims as follows:

- the development limits the use of potable water supply to site office operations with all other water used on-site sourced from collected stormwater run-off, which is then used as part of the quarrying operations such as the wetting down of roads, stockpiles and materials to be crushed;
- the ongoing use of the site as a quarry will help support a local business and the wider construction industry of Albury, which supports economic diversity and growth;
- the development will continue to operate in accordance with best practice sustainable programs including minimising environmental harm;
- the development will continue to provide effective waste management practices through the acceptance and disposal of Norske Skog biosolid waste that is used as part of site rehabilitation works;
- the development seeks to respect and minimise any potential impacts on the natural environment by avoiding areas of environmental sensitivity and implementing environment protection measures;
- the development will minimise the impact of stormwater run-off via a series of collection dams prior to any discharge into the wider network;
- the development will not severe or adversely affect the long term survival of bushland areas or environmental corridors; and
- the development will not adversely impact on any areas or artefacts of identified cultural heritage significance following the completion of an Aboriginal Cultural Heritage Assessment Report for the site.

6. Consultation

Stakeholder consultation is key to the planning and assessment process to assist in determining the relevant issues to be considered in the Project design and environmental impact assessment process. Consultation with relevant stakeholders including affected landholders, the surrounding community, community groups, public authorities, service providers, local Aboriginal groups and other relevant stakeholders commenced during the early project planning phases and has continued through the preparation of the EIS consistent with the requirements of the SEARs.

AP Delaney & Co has an established relationship with the surrounding community and other stakeholders through its ongoing operations at the site since 1970 and has implemented a process for ongoing engagement regarding its operations, particularly during times of blasting. As part of the project, AP Delaney & Co are committed to working with the community to develop a project that can coexist with the local community and has built on this existing engagement program as part of the preparation of this EIS.

The engagement process that has been undertaken as part of the EIS and approval process provides the opportunity for the community to provide input into project planning, to identify community needs, concerns and opportunities, and to be involved in the environmental and social assessment process.

Details of public authority consultation are outlined in Section 6.1, with details of consultation with the community and other stakeholder groups outlined in Section 6.2. An outline of the key stakeholder issues identified during the consultation process, and where this has been addressed in the EIS, is included in Section 6.3.

6.1 Public Authorities

Consultation with the relevant public authorities and government agencies has been undertaken throughout the preparation and post lodgement of the EIS in accordance with the SEARs, so as to enable key issues to be identified and the impact assessment process to be refined to ensure these issues are appropriately addressed.

Specific details regarding consultation with individual public authorities are detailed in **Section 6.1.1–6.1.9** of the EIS.

6.1.1 Department of Industry – Resources & Energy

The NSW Department of Industry (DoI) – Resources & Energy were consulted by NSW DPE as part of the initial preparation of the SEARs and responded to this request via letter dated 25 August 2016 outlining their requirements (see **Attachment A**).

In summary, DoI Resources & Energy identified the following items that needed to be addressed as part of the preparation of an EIS:

- Resource assessment detailing the nature, quality and extent of the resource to be extracted from the site; and
- Details regarding the methods used to assess the resource and its suitability for the intended applications.

In accordance with the requirements of the SEARs, further consultation was undertaken with this public authority via email dated 26 March 2017.

A response via email was provided from DoI Resources and Energy on 28 March 2017 outlining that they had no further comments in addition to those previously provided in its response to the SEARs as outlined above.

A request for further information was received from DoI Resources and Energy via letter dated 30 January 2018 in relation to the subject application. In response, further details regarding the availability of in-situ materials and a resource assessment have been provided and are discussed in **Section 7.6** of this report.

6.1.2 Environment Protection Authority

The NSW Environment Protection Authority (EPA) were consulted by NSW DPE as part of the initial preparation of the SEARs and responded to this request via letter dated 25 August 2016 outlining their requirements (see **Attachment A**).

In summary, the EPA identified the following items that needed to be addressed as part of the preparation of an EIS:

- Air quality (dust, emissions, human health)
- Noise and vibrations (blasting, operational matters);
- Water and soil quality (water and waste water management); and
- Waste, chemicals and hazardous materials (including storage and disposal).

In accordance with the requirements of the SEARs further consultation was undertaken with this public authority via email dated 26 March 2017.

A response via email dated 28 March 2017 was provided from the EPA outlining that they had no further comments in addition to those previously provided in its response to the SEARs as outlined above.

A request for further information was received from the EPA via letter dated 18 December 2017 in relation to the subject application. In response, further details regarding air quality, noise and the disposal of waste have been provided and are discussed in **Sections 7.3, 7.7 and 7.8** of this report.

6.1.3 NSW Office of Environment & Heritage

The NSW Office of Environment & Heritage (OEH) were consulted by NSW DPE as part of the initial preparation of the SEARs and responded to this request via letter dated 25 August 2016 outlining their requirements (see **Attachment A**).

In summary, OEH identified the following items that needed to be addressed as part of the preparation of an EIS:

- Impacts to Aboriginal Cultural Heritage Sites and Objects;
- Biodiversity; and
- Cumulative impacts (such as land clearing, edge effects etc).

In accordance with the requirements of the SEARs further consultation was undertaken with this public authority via email dated 26 March 2017.

A response via email dated 27 March 2017 was provided from OEH reconfirming their previous comments previously provided in its response to the SEARs as outlined above.

A request for further information was received from the OEH via letter dated 31 January 2018 in relation to the subject application. In response, further details regarding biodiversity and aboriginal cultural heritage have been provided and are discussed in **Sections 7.1 and 7.4** of this report.

6.1.4 NSW Rural Fire Service

The NSW Rural Fire Service (RFS) were consulted by NSW DPE as part of the initial preparation of the SEARs and responded to this request via letter dated 24 August 2016 outlining their requirements (see **Attachment A**).

In summary, the RFS identified that the EIS needs to address bushfire protection measures and compliance with *Planning for Bushfire Protection 2006*.

In accordance with the requirements of the SEARs further consultation was undertaken with this public authority via email dated 26 March 2017, however no response has been received with regards to this request.

6.1.5 NSW Roads & Maritime Service

The NSW Roads & Maritime Service (RMS) were consulted by NSW DPE as part of the initial preparation of the SEARs and responded to this request via letter dated 29 August 2016 outlining their requirements (see **Attachment A**).

In summary, the RMS identified the following items that needed to be addressed as part of the preparation of an EIS:

- Preparation of a Traffic Impact Assessment (TIA);
- Traffic generation rates and impacts on the safety and efficiency of the road network; and
- Works required to the existing road infrastructure, including existing intersections.

In accordance with the requirements of the SEARs further consultation was undertaken with this public authority via email dated 26 March 2017.

A response via email dated 4 April 2017 was provided from the RMS reconfirming their previous comments previously provided in its response to the SEARs as outlined above.

6.1.6 Water NSW

Water NSW were consulted by NSW DPE as part of the initial preparation of the SEARs and responded to this request via letter dated 24 July 2016 outlining their requirements (**Attachment A**).

In summary, Water NSW identified the following items that needed to be addressed as part of the preparation of an EIS:

- Access to surface and groundwater resources;

- Impact in surface and groundwater resources;
- Flooding; and
- Impact on waterfront land and water resource dependents.

In accordance with the requirements of the SEARs further consultation was undertaken with this public authority via email dated 26 March 2017, however no response has been received with regards to this request.

6.1.7 Department of Industry – Lands (Crown Lands)

Whilst it is acknowledged that the NSW Department of Industry – Lands (Crown Lands) was not formally consulted as part of the initial request for SEARs, given the nature of the works and its proximity to adjacent Crown lands, consultation with this public authority was considered warranted.

Accordingly consultation was undertaken with the local office of Crown Lands via email dated 14 July 2017 seeking any comments or feedback to be included as part of the preparation of the EIS.

To date, no response has been received from Crown Lands.

6.1.8 Murray Local Land Services

Whilst it is acknowledged that Murray Local Land Services was not formally consulted as part of the initial request for SEARs, given the nature and extent of the works as well as the fact that a portion of the subject land is zoned E3 Environmental Management, consultation with this local environmental authority was considered warranted.

Accordingly consultation was undertaken with the local office of the Murray Local Land Services via email dated 14 July 2017 seeking any comments or feedback to be included as part of the preparation of the EIS.

To date, no response has been received from Murray Local Land Services.

6.1.9 Albury City Council

Consultation with Albury City Council has been ongoing over the life of the quarry with this organisation being the relevant consent/planning authority responsible for the subject land.

Given the extent of the proposed works, the landowner requested that AlburyCity Council modify the original approval and extend the life of the existing development consent beyond the current expiration date rather than prepare a new development application for the site.

Council reviewed this request, but ultimately requested that the landowner submit a new development application and associated documentation consistent with current day legislative and planning requirements, so as to allow for the continued use of the subject land as an extractive industry.

Accordingly, the proponent has prepared this EIS in response to Council's previous request. It is noted Albury City Council were consulted by the NSW DPE as part of the preparation of the SEARs and responded to this request via letter dated 2 September 2016 (see **Attachment A**).

In summary, AlburyCity Council identified the following items that needed to be addressed as part of the preparation of an EIS:

- Flora and fauna impacts;
- Dust generation, management and mitigation;
- Stormwater collection, management and disposal;
- Rehabilitation and remediation of disturbed areas;
- Noise impacts associated with blasting, traffic and other relevant sources;
- Visual impact;
- Details regarding the utilisation of bio-solids from the Norske Skog Paper Mill;
- Traffic including internal and external movements;
- Identification of potential impacts on the amenity of nearby residents; and
- Potential site hazards – activities, materials or storage.

In particular, it was also requested that an Environmental Management Plan (EMP) be prepared for the site to accurately define and detail expected actions and activities proposed to occur on the site and mitigating measures required to manage any potential impacts.

A formal request for further information was received from council via letter dated 13 March 2018 raising a number of items identified by both council and relevant government agencies, in particular seeking clarification regarding the extent of proposed works. In response, further details have been provided throughout this amended report in relation to the proposed development.

6.2 Community

An initial community consultation letter dated 21 June 2017 was sent to all residents living within an approximate 1.5 kilometre radius of Rockwood Quarry, including the residents of both Himalaya and Claremont rural residential estates. In total, 138 letters were sent out as part of this consultation process and a copy of the community consultation letter and responses that were received are provided at **Attachment Q**.

In summary, this letter provided details of the Project, a background and history of the site, a description of the proposed works, details regarding the consultation process, as well as an invitation for residents to provide input into the environmental assessment and approvals process. Residents were given 28 days from the date of the letter to respond with any comments that they considered should be addressed as part of the preparation of the EIS.

It is noted however, that a small proportion of these letters were subsequently returned as a 'return to sender' given the alternative or rural addressing of some of these properties. Given the proximity of some of these properties to the subject land and the quarrying and associated activities proposed to be conducted on-site, a subsequent letterbox drop was conducted on 14 July 2017 to try and capture those residents that were previously not notified as part of the initial mail out.

At the time of finalising this EIS report, two (2) submissions were received as detailed below:

Submission No. 1 – Brian Royal

Email received 26 July 2017. The main issues of concern were:

- Concerns regarding noise, dust and mud as part of the trucking operations to and from the quarry;
- The entry to the site needs to be reviewed as it has become a safety issue with more traffic on Gerogery Road, which will only be exacerbated if extraction is increased to 100,000m³ per annum, which represents a 33.3% increase in truck movements per day; and
- Possible alternatives could include connecting the quarry site to the new industrial subdivision to the south of the extraction area, which would direct traffic through the new roundabout.

Submission No. 2 – Bree Longley

Telephone call received 15 August 2017. The main issues of concern were:

- Noise and vibrations from blasting and the impacts that this may have the structural soundness of dwellings;
- No previous notification regarding blasting works;
- Noise from quarrying operations, including trucks reversing;
- Queries regarding the proposed hours of operation.

6.3 Identification of Key Stakeholder Issues

The identification of key stakeholder issues for the Project has been based on consideration of:

- the planning and environmental context of the locality;
- the environmental risk assessment of potential environmental impacts associated with the Project;
- outcomes of the community and public authority consultation process; and
- the SEARs for the proposed Project.

A summary of the key issues identified through both community consultation and consultation with relevant public authorities is provided in **Table 13** below.

Table 13: Summary of Key Stakeholder Issues

Issue	Addressed in EIS
Land and Mineral Resources	Section 2.1.3 & 7.6
Air Quality (dust, emissions)	Section 7.7
Noise, blasting and vibrations	Section 7.3
Water Quality (including surface and groundwater resources)	Section 7.2
Soil Quality	Section 7.6

Issue	Addressed in EIS
Waste Management and Disposal	Section 7.8
Aboriginal Cultural Heritage	Section 7.4
Biodiversity	Section 7.1
Bushfire & Flooding	Section 4.5.3 & 7.2
Transport & Traffic	Section 7.9
Rehabilitation and remediation	Section 7.15
Visual impact	Section 7.11
Social impacts	Section 7.10

7. Environmental Issues

This section contains an assessment of each environmental issue specified by the SEARs and other public authorities. A summary of the mitigation measures to be implemented prior to, during and after the proposed activity has been completed are included in Section 8 of the EIS.

7.1 Biodiversity

An assessment of biodiversity values including flora and fauna has been undertaken based on a desktop assessment and field investigations of the subject land. A formal Biodiversity Assessment was also prepared by Biosis to identify any matters of National Environmental Significance contained within the *Environment Protection and Biodiversity Conservation Act 1999*, as well as to identify any flora or fauna species listed under the *Biodiversity Conservation Act 2016*.

7.1.1 Existing Flora and Fauna Condition

The subject land contains native vegetation, some of which is contiguous with native vegetation on adjacent properties and road reserves. The entirety of the site has had some modification to the canopy with historical tree removal occurring for timber harvesting or pasture improvement. Higher quality woodland remnants occur on hilltops and rocky rises where the canopy remains relatively intact and the understorey is predominantly native.

Derived grasslands occur on the slopes and valley floors where the canopy has been predominantly removed but the understorey remains native. The eastern portion of the site has been grazed extensively by cattle while the western and northern sections have been excluded from grazing, with the exception of minor native grazing by Eastern Grey Kangaroos. A section of the subject land to the northeast of Pit 3 (being former Pit 2) has been impacted by past quarrying activities and now contains predominantly introduced vegetation.

Native vegetation within the study area consists of Plant Community Type (PCT) 266: *White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion* where the canopy remains and PCT 1000: *Speargrass – Redleg Grass derived grassland on hills in the Jindera to Holbrook region, southern NSW South Western Slopes bioregion* where the canopy has been historically removed.

Woodland areas contain a relatively sparse canopy dominated by White Box *Eucalyptus albens* with some Blakely's Red-gum *Eucalyptus blakelyi* and Apple Box *Eucalyptus bridgesiana* present. The mid-storey is sparse to absent but where present includes Kurrajong *Brachychiton populneus* subsp. *populneus* and Hickory Wattle *Acacia implexa*.

The groundcover consists predominantly of grazing tolerant native grasses including Red-leg Grass *Bothriochloa macra*, Lobed Wallaby-grass *Rytidosperma auriculata*, Common Wheatgrass *Elymus scaber* var. *scaber* and Umbrella Grass *Digitaria divaricatissima*. A sparse herb layer is present and includes Cranesbill Geranium *Geranium retrorsum*, Rock Isotome *Isotoma axillaris* and Rock Fern *Cheilanthes sieberi* subsp. *sieberi*.

Plant Community Type 266 was found to meet the listing criteria as the Box Gum Woodlands Threatened Ecological Community, listed as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)(see **Figure 29** of this report).

The subject land was also considered to provide potential suitable habitat for the Pink-tailed Worm-lizard *Aprasia parapulchella*, listed as Vulnerable under the EPBC Act, and Swift Parrot *Lathamus discolor*, listed as Critically Endangered under the EPBC Act. Sixteen bird species listed under the *Biodiversity Conservation Act 2016* (BC Act) were also recorded or predicted to occur within the study area.

Pink-tailed Worm-lizard

Following the completion of a Biodiversity Assessment for the subject land, it was concluded that the study area contained potential suitable habitat for the Pink-tailed Worm-lizard *Aprasia parapulchella*, which is listed as Vulnerable under the EPBC Act. This species is a fossorial legless lizard that feeds principally on the eggs and larval stages of various ant species. It inhabits small rocky clearings in open woodland, especially in sparsely treed areas with a good cover of native grasses.

In order to determine the species presence or absence on-site, a targeted survey was undertaken for the Pink-tailed Worm-lizard by Dr Damien Michael on 1 June 2018 (see Attachment J). Potential habitat along the north-western facing slope of the proposed quarry expansion, an area covering approximately 2.25 hectares, was searched by turning over and inspecting 293 surface rocks for individuals or slough skins.

Having completed this targeted survey, no evidence of this species was detected and the site was considered to support only a low density of suitably sized rocks and low numbers of host ant species. Subsequently, it was concluded that there was only a low likelihood of the species being present in the study area.

Furthermore, of the rocks that were lifted, 15 individuals of the Eastern Striped Skink *Ctenotus spaldingi* were detected. It is important to note that the Pink-tailed Worm-lizard is not known to occupy rocks that are used by this large lizard species.

7.1.2 Impacts of the Proposal

There is a range of direct and indirect impacts that can result from the proposed activities that can affect flora and fauna within the study area or wider region. These impacts can vary in magnitude depending on the type of impact.

A summary of the impacts associated with the proposed development include:

- The permanent removal of 6.04 hectares of native vegetation consisting of 1.25 hectares of PCT 266 and 4.79 hectares of PCT 1000;
- The removal of 1.25 hectares of vegetation that meets the listing criteria as the Box Gum Woodlands threatened ecological community;
- Removal of vegetation that may constitute habitat for the Pink-tailed Worm-lizard, listed as vulnerable under the EPBC Act.
- Removal of vegetation that may constitute an occasional foraging resource for Swift Parrot, listed as critically endangered under the EPBC Act;
- Removal of vegetation that provides a foraging and nesting resource for a range of state listed avian species;

- Loss of 19 trees, some of which are hollow-bearing, that provide foraging and sheltering habitat for a range of bird and bat species;
- Potential indirect impacts on flora and fauna habitat through increased water pollution, erosion and/or sedimentation;
- Potential impacts related to noise/blasting on native fauna;
- Potential indirect impacts associated with increased flora and fauna pest species;
- Potential indirect impacts of edge effects – due to past clearing and disturbance, the whole study site is already edge-affected;
- Cumulative impacts of development in the general area – surrounding developments include Burgess Quarry, the Nexus industrial park, Ettamogah rail hub, Norske Skog Paper Mill, most of which have been operating for many years;

The following is provided in response to each of these potential environmental impacts:

- As a means of reducing the potential environmental impacts of the development, the boundaries of the proposed quarry expansion area have been reduced. More specifically, the area of Grassy Box Gum Woodland proposed to be removed was reduced from 1.74 hectares down to 1.25 hectares (see **Figures 29 & 30**);
- Targeted surveys were conducted of the Pink-tailed Worm-lizard by an expert in this field, which concluded that the likelihood of the species being present in the study area is 'low'. Notwithstanding, it was recommended that additional mitigation measures be adopted as outlined in Section 7.1.3 below;
- Further assessment of the impacts of the proposed works on the Critically Endangered Swift Parrot, as well as, State-listed woodland birds concluded that the site does not provide critical habitat for these species. Furthermore, due to the limited amount of tree removal proposed (19) and the availability of resources in the broader landscape, the biodiversity report concluded that the proposed quarry expansion will not lead to any decline in the species' overall abundance or area of occupancy;
- In response to the proposed removal of approximately 2.4 hectares of native vegetation (grasslands) zoned E3 Environmental Management, the developer proposes to provide a vegetation offset area comprising 2 parcels totalling approximately 15 hectares of infill revegetation (see **Figure 31**). The aim of this offset area is to connect existing areas of E3 vegetation and adjacent Crown land, which will form a broad corridor extending eastwards;
- All revegetation and management works will be undertaken in accordance with a Vegetation Management Plan (VMP) and a Quarry Closure and Rehabilitation Plan (**Attachment I & L**);
- Matters regarding potential indirect impacts on flora and fauna habitat through increased water pollution, erosion and/or sedimentation have been addressed in Sections 7.2, 7.5 and 7.6 of this report;
- Potential impacts related to noise/blasting on native fauna have been addressed in Section 7.3 and in **Attachment G** of this report;
- No priority weeds have been recorded on the study site. It is therefore not expected that expansion of the quarry will increase the spread of weeds or fauna pests on-site as the

quarry has been operating for the past 45 years on land and has been subject to ongoing clearing and soil disturbance.

- Although the removal of Box Gum Woodland will create a new 'edge' in vegetation zoned E3 Environmental Management, this is unlikely to have a significant impact as the community is a disturbed open woodland adjacent to grazed pasture. Furthermore, proposed infill revegetation over an area of approximately 15 hectares as part of the planned offsets is likely to reduce existing edge effects on E3 vegetation.
- The development is not expected to have an adverse cumulative impact or result in the loss of regionally significant vegetation as, under Albury's biocertification scheme, all areas containing medium to high conservation values have been retained as E2 Environmental Conservation or E3 Environmental Management. Therefore, it is not expected that the proposed activity will have a significant cumulative impact in combination with other approvals in the surrounding area.

EPBC Referral

Matters regarding potential impacts on EPBC listed threatened species and endangered ecological communities were assessed as part of the biodiversity assessment.

Whilst it is acknowledged that this report did conclude that the proposed works are not expected to have an adverse environmental impact on a Matter of National Environmental Significance, the report did conclude that:

As the project definitions currently stand and due to multiple MNES being potentially effected, we consider there to be a sufficient level of risk to warrant referral of the project to the Minister of the Environment and Energy for determination. This would provide the proponent with legal clarity moving forward. We also recognise that there is an opportunity to mitigate impacts within the study area through further re-defining the scope of the expansion to avoid as much Box Gum Woodlands as possible and by conducting targeted surveys to determine Pink-tailed Worm Lizard presence / absence.

In accordance with these recommendations, a targeted survey was conducted in relation to the Pink-tailed Worm Lizard and the project area was further refined and reduced so as to minimise the environmental impacts of the works as outlined above.

To ensure legal certainty, the project was also referred to the Federal Minister for the Environment and Energy to determine whether the activity was a 'Controlled Action' that warranted further investigation. A copy of this EPBC referral is included as **Attachment K**.

Following consideration of the project, the Federal Minister for the Environment and Energy determined that the proposed works are not a Controlled Action and that no further assessment and approval under the EPBC Act is required. A copy of this approval is included as **Attachment K**.

In conclusion, whilst it is acknowledged that the development will result in the removal of a number of trees and native vegetation as outlined above, the project has been revised to reduce the area of proposed works, thereby reducing the environmental impacts of the activity. Furthermore, the applicant proposes to establish and maintain a proposed 15 hectare offset area that will connect existing areas of E3 vegetation and adjacent Crown land, which will form a broad corridor extending eastwards in accordance with the requirements a VMP and a quarry closure and rehabilitation plan.

Lastly, the proposed development was referred to the Federal Minister for the Environment and Energy who upon review, deemed that the proposed works are not a 'Controlled Action' and do not require any further environmental assessment.

7.1.3 Mitigation and Monitoring Measures

In addition to the above mitigation measures and in response to the likely impacts of the proposed development, a number of additional ongoing mitigation and monitoring measures are recommended as part of this Project including:

- Avoid disturbance to any native vegetation surrounding the expansion area by fencing off all retained vegetation;
- Undertake staged tree removal works and only remove those trees necessary for that stage of the development;
- Any trees to be retained to be protected in accordance with Australian Standard AS4970 – 2009 Protection of trees on development sites, during construction, operation and decommissioning of the site compound;
- In the unlikely event that unexpected threatened species (e.g. Pink-tailed Worm-lizard) are identified during the project, works should cease and an ecologist contacted;
- Implement a sediment and erosion control plan to avoid indirect impacts to surrounding biodiversity values;
- Implement a site management plan (EMP);
- Hollow-bearing trees to be removed in a two-stage process;
 - Stage 1: All surrounding vegetation to be cleared and grubbed;
 - Stage 2: 24 to 48 hours later (or in accordance with approval docs) the hollow-bearing trees to be inspected by an ecologist. If resident fauna is observed, the hollow section is to be lowered to the ground and the animal allowed to move on of its own volition. If injured, the fauna to be taken to a WIRES carer or appropriate veterinarian for care;
- Remove any noxious weed material, including checking and cleaning earthmoving equipment prior to moving to another site;
- Install a transect line of 40 roofing tiles in clusters of four extending every 40 metres along the north-west facing rocky slope of the proposed expansion site. These tiles should be checked for host ant species and sheltering Pink Tailed Worm Lizards on a monthly basis between August and November for a minimum of three years, in conjunction with searches of suitable rocks;
- Undertake infill revegetation of proposed offset area in accordance with the guidelines set out in the Vegetation Management Plan (see **Attachment I**);
- Undertake staged and ongoing site rehabilitation works ('retreat method') once an area has been exhausted;
- Upon exhaustion of all extractive materials, rehabilitate the entire site back to pre-development conditions (i.e. rural paddocks and grasslands); and
- Prevent stock access to the site after rehabilitation to allow for native re-growth.

7.2 Water

The operation and use of the subject land as an extractive industry and the associated crushing of concrete has the potential to impact on both the quantity and quality of surface water and groundwater conditions and therefore consideration of the environmental impacts of the development is considered necessary.

7.2.1 Existing Conditions

A portion of the subject land is located within the Eight Mile Creek Catchment area (see **Figure 36** and **Table 14**), due to its proximity to Eight Mile Creek, which is located approximately 600 metres south of existing quarrying and waste disposal activities conducted in Pit 3 and 1.2 kilometers from existing quarrying activities conducted in Pit 1. This catchment is the largest local catchment area (65km²) within the Albury LGA and eventually drains into the Murray River.

Table 14: Catchment Context

Catchment	Catchment Area (ha)	Rockwood Quarry Project Area within Catchment Area (ha)	Rockwood Quarry Project Area within Catchment Area (ha)
Eight Mile Creek	6,500	112	1.72%

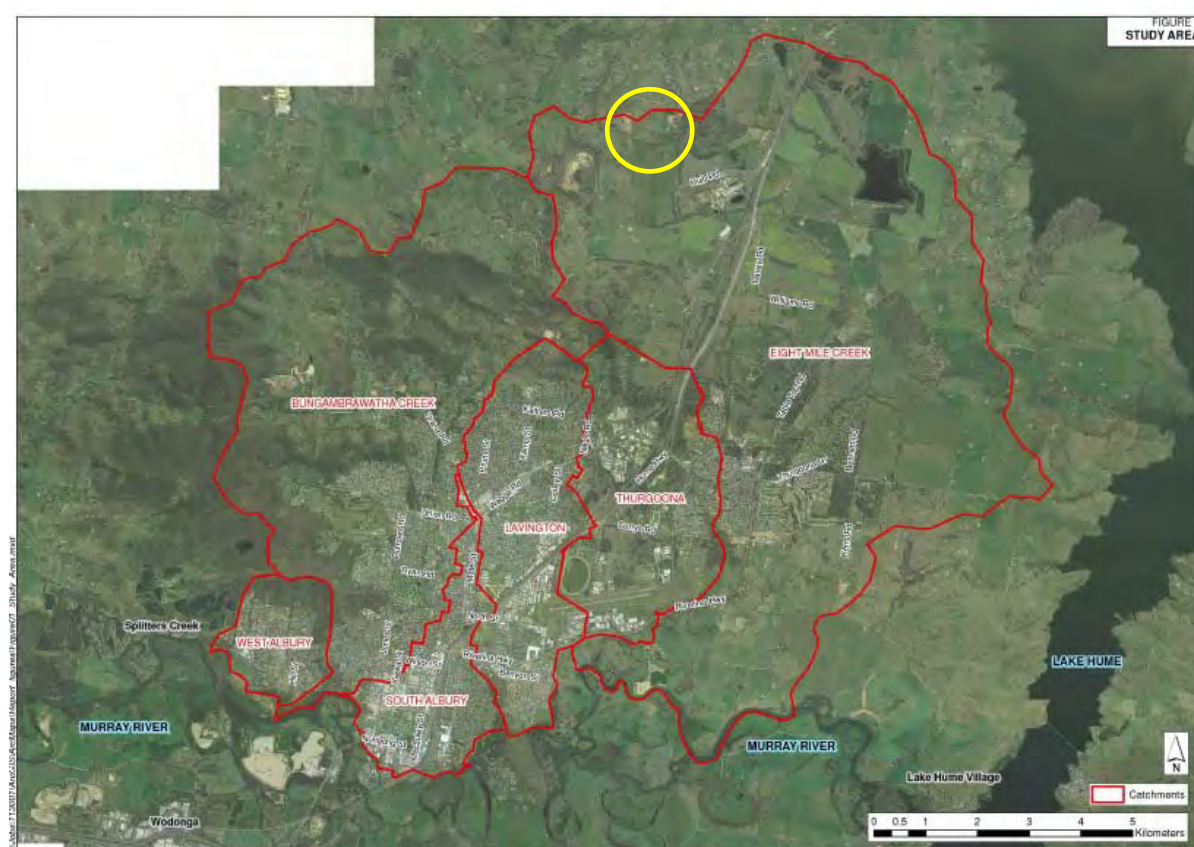


Figure 36: Albury Catchment Areas (subject land outlined in yellow)
(Source: Albury Floodplain Risk Management Study & Plan)

Flood behavior varies across the catchment areas, with some catchments being influenced by the water level in the Murray River. Given the location and distance of the subject land from the Murray River and other local waterways, including Eight Mile Creek, the land is not subject to either mainstream or overland flooding.

At present, both surface water and groundwater impacts are appropriately managed on-site with stormwater run-off diverted around quarrying activities and collected and treated via a series of detention dams located on-site that detain and gradually filter the water maintaining pre-development flows.

Downstream users of the site are contained within the Eight Mile Creek Catchment Area and water use within this catchment is regulated under the Water Sharing Plan (WSP) for the *Murray Unregulated and Alluvial Water Sources* with cease to pump rules established to protect environmental flows. As outlined above, the subject land is not located within close proximity to any waterways and does not currently pump any water from rivers and creeks. Consequently, the proposed ongoing use of the site as a quarry will not have an adverse impact on water sharing plans or other downstream users.

The subject land contains a number of natural drainage lines and depressions that drain into a number of holding/settling dams with surface areas ranging in size from 120m² up to 860m² (see **Figure 37**). These dams act as a natural filter for stormwater run-off and hold, treat and filter the stormwater before being discharged off-site, thereby maintaining pre-development flows and ensuring stormwater quality prior to any discharge into local waterways further downstream. Given the number and size of these existing dams, there is ample capacity to continue to collect, treat and discharge stormwater run-off without causing environmental harm.

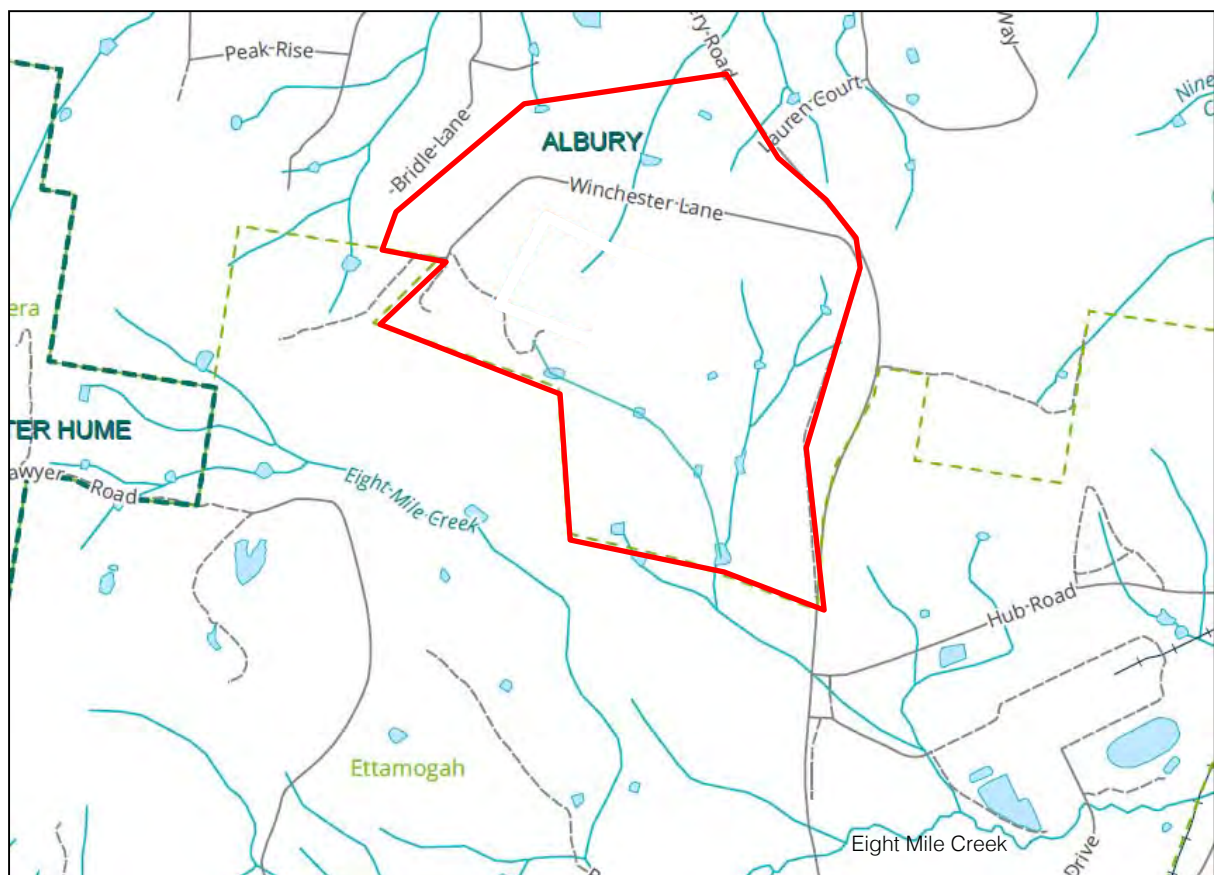


Figure 37: Location of Existing Storage dams on-site

(Source: Rockwood Quarry Aboriginal Cultural Heritage Assessment Report, Biosis 2017)

Water from several of these dams is recycled and re-used in current quarrying operations and is sprayed on the screens and conveyors during the crushing process to contain dust and airborne particles and as a moisture conditioner of the finished product. Recycled water from these dams is also used to water down unsealed roads and uncovered stockpiles to minimise the impacts of dust.

It is noted that vehicles are not washed down on-site and there is no reticulated water provided to the property due to the intermittent and infrequent use of the site by workers. Similarly no water is used in the extraction process and the development does not generate any tailings or water waste outside of stormwater run-off collected on-site.

Similarly, diversion banks have been installed and maintained ongoing to prevent the contamination of the local stormwater system. Clean water is currently diverted away from disturbed and rehabilitated areas to protect water quality leaving the site and the rehabilitation works. 'Dirty' water is currently directed to sedimentation ponds for treatment prior to discharge from the site or is recycled as part of the quarrying operations as outlined above.

Other impacts on both surface and groundwater currently being experienced on-site are associated with the disposal of dewatered biosolid waste from the adjoining Norske Skog Paper Mill. A separate development consent and EPA license currently applies and is still valid in relation to this activity and limits the maximum amount of waste that can be disposed of on-site to 10,000 tonnes per annum. The disposal of this waste only occurs intermittently when weather precludes the transporting and disposal of this material to other farmlands and paddocks located within a 20 kilometre radius of Norske Skog.

Under the conditions of this approval, a number of cut-off drains and a leachate dam were required to be constructed to protect natural drainage lines on-site, as well as the preparation of a hydrogeological study and groundwater monitoring program to ensure that the groundwater does not become contaminated. The applicant was also required to install 12 piezometers (6 deep and 6 shallow) around the site to monitor the groundwater, as well as undertake annual reporting and independent environmental audits.

Prior to the initial disposal of Norske Skog biosolid waste, a Hydrogeological Assessment was prepared for the site by GHD in May 1993 (**Attachment M**) to determine what impacts, if any, had been created by the disposal of biosolid waste on-site since initial disposal in 1983. The assessment was also required to assess what the likely environmental impacts would be from continuing to dispose of this waste within a proposed waste disposal area located to the south west of Pit 3.

The report concluded that site operations have marginally increased recharge to the regional aquifer and resulted in localised perched aquifers at the toe of the dams. These changes in the hydrogeological regime however were recorded as minor in a regional sense, hence will not adversely impact upon regional groundwater levels and hence soil and stream salinity.

As a means of ensuring compliance with the operational and license requirements for the site, the report concluded a number of recommendations to ensure ongoing protection of the environment, including the upgrading of existing leachate dams, as well as ongoing monitoring.

In accordance with these recommendations and requirements, the waste disposal area has been subject to annual monitoring and periodic environmental audits, including a groundwater status review prepared by Nolan-ITU (**Attachment O**).

This report concluded that since the initial hydrogeological assessment prepared by GHD in 1993, the leachate pondage capacity was increased and clay lined and an irrigation area recycling system was installed. Since this time, it was noted that the volume of material disposed of on-site has significantly decreased as a result of recent initiatives by Norske Skog, which now disposes of a bulk of this material via land application to a number of agricultural paddocks located within a 20 kilometre radius of the mill. Consequently, biosolid wastes are only disposed of on-site during prolonged wet weather periods.

More specifically, the report concluded that prior to landfilling regional water table rises were likely to be in the order of 0.3 m/yr. Monitoring data provided by Norske Skog for the Delaney site shows no evidence of an overall rise in regional water table attributable to landfilling practices. The perched water tables at the site also showed a flat long term trend.

Groundwater salinity was recorded as stable in the regional aquifer over the monitoring period. In the shallow aquifer there was evidence suggesting that since 1997 groundwater salinity has been on an upward trend in bores S2 and S5. The increase corresponds to a fall in groundwater levels in these bores and suggests a climatic rather than land use response.

Metals concentrations in the regional aquifer show no discernible trends and nutrient levels in the regional aquifer are stable and well below ANZECC guidelines for stock supply.

In the shallow aquifer, nutrient concentrations are higher but still well below guidelines, except for the bore adjacent to the working face which may be collecting leachate or stormwater. Bore S4 exhibits an overall upward trend since 1997. Nutrient concentrations in this bore are not expected to increase further as concentrations in the adjacent leachate dam are similar to or less than those recorded in the bore.

In summary, the report concluded that the existing quarry and approved biosolid disposal area are not having an adverse impact on groundwater quality.

7.2.2 Impacts of the Proposal

Although the subject land has continued to operate for over 45 years with little to no incident with regards to surface water or groundwater impacts, the operation and use of the land ongoing as an extractive industry and associated activities including waste disposal could still create a number of issues including:

- Contamination, pollution and leaching of the groundwater from quarrying activities (production, crushing, washing down of stockpiles and unsealed roads);
- Stormwater run-off and pollution of downstream users and receiving waters from inappropriate sediment and erosion control measures;
- Changes to site water balance or water table levels;
- Creation of localised flooding or erosion via uncontrolled stormwater run-off; and
- Over-reliance on potable water supply systems.

As outlined above, matters regarding surface and groundwater impacts are already appropriately managed and protected by current on-site operations and will continue to be subject to periodic monitoring and environmental audits.

It is also noted that the disposal of biosolid waste is already approved under a separate valid approval and can therefore continue to occur in accordance with the conditions of this approval and associated EPA license without the need for further environmental assessment as part of this application.

Matters regarding erosion and sediment control are also appropriately managed and are addressed in **Section 7.5** of this report.

Furthermore, no licenses or approvals are required under the *Water Act 1912* or the *Water Management Act 2000* as the quarry is already operating and does not propose to undertake any additional works within proximity to any waterways.

7.2.3 Mitigation and Monitoring Measures

Notwithstanding, the above it is important to maintain, and where necessary improve, mitigation and monitoring measures to ensure that the subject land continues to operate without environmental harm.

Such ongoing mitigation and monitoring measures include:

- Establishment, maintenance and monitoring of existing spillways, diversion banks and cut-off drains around quarrying and associated activities to prevent stormwater run-off from becoming polluted;
- Collection and filtering/treatment of all stormwater run-off generated from the site via a series of existing detention dams;
- Maintenance of existing discharge points preventing erosion;
- Monitor diversion drains in the winter and spring months when rainfall is at its highest;
- Staging quarrying activities and rehabilitation works on-site to minimise the area of disturbance;
- Regularly maintain and monitor all erosion and sediment control measures (such as cleaning out silt fencing) and sediment collection dams to ensure they are effectively functioning;
- Inspection of leachate dams and cut off drains to ensure that they are structurally sound and are not subject to leaking; and
- Limiting the irrigation of leachate run-off to summer months; and
- Continue to undertake periodic monitoring and environmental audits of the waste disposal area in relation to surface water and groundwater, including reviewing existing piezometers and bores on-site (as required under a separate development consent and EPA license).

7.3 Noise, Blasting & Vibrations

A Noise Impact Assessment (NIA) and subsequent revised report was carried out by Ray Walsh Acoustics, Noise and Sound and Harwood Acoustics to assess the existing and proposed conditions of Rockwood Quarry. A copy of this assessment is provided as **Attachment G** to this EIS.

The NIA has been prepared in accordance with relevant policies, guidelines and EPA requirements and seeks to determine the current and predicted level of noise generated from the site. More specifically, the NIA seeks to assess the future noise emissions from the entire development including extraction works undertaken within Pits 1 and 3, on-road traffic noise and operational plant noise associated with the quarry.

7.3.1 Existing Conditions

Rockwood Quarry currently operates from 7:00am to 6:00pm Monday to Saturday. No work is currently undertaken on Sundays or public holidays outside of the intermittent disposal of biosolids from the nearby Norske Skog Newsprint Mill, which is subject to a separate development consent and EPA license and is not part of this application. These times have been set to minimise any amenity impacts outside of traditional working hours.

In addition, infrequent blasting also occurs at the quarry approximately every 2 years to help break up existing materials for production and crushing as per the current conditions of the existing development consent.

Whilst it is acknowledged that the site does generate noise from the operation of machinery and plant when it is operating, as well as the use of local access roads by haulage vehicles, it is noted that the work site itself is located over 650 metres away from the nearest residence.

Likewise, the natural features and topography of the land also help to reduce the impact of noise. In particular, the existing quarry is surrounded by a high earth bank that reflects noise emissions away from surrounding sensitive noise receptors during the operation of plant and equipment, thereby limiting the impact of noise on surrounding neighbours. Vegetated buffers have also been implemented along boundary fence lines to further help reduce and minimise noise.

To the operator's knowledge, no known complaints have been received by the company, Council or any other authority in relation to noise as a result of the operation of the quarry in recent times.

Notwithstanding the above and in recognition of the proposed quarry expansion and proposed increase in annual extraction and production, it is important to ensure that all possible steps to ensure that the impacts of noise are appropriate for the context and setting of the area.

7.3.2 Noise Impact Assessment

The SEARS required an assessment of the potential noise impacts of the extractive industry against relevant legislation, guidelines and industrial noise policies, as well as against the limits and methodology contained in Section L4 of the Environment Protection License (EPL).

In response, a Noise Impact Assessment (NIA) was carried out by Ray Walsh Acoustics, Noise and Sound and Harwood Acoustics to assess the existing and proposed conditions of Rockwood Quarry. A revised NIA was subsequently prepared to address outstanding concerns identified by the EPA.

Acceptable noise limits derived from the *NSW Industrial Noise Policy 2000* and *Noise Policy for Industry 2017* are 35 dBA (Leq, 15 minute) and 40 dBA (Leq, 15 minute) respectively, at any affected residence during the 'day' period between the hours of 7 am and 6 pm Monday to Saturday.

In addition, the current EPL sets limits for ground vibration peak particle velocity from blasting operations of 5 mm/s or 2 mm/s for more than 5% of the total blasts and 10 mm/s at any time. The Air blast overpressure level from blasting operations must not exceed 115 dB (Lin Peak) for more than 5% of blasts and 120 dB (Lin peak) at any time.

Acceptable noise limits for on road truck movements are derived from the *NSW Road Noise Policy 2011*. The Policy recognises that in certain instances extractive industries must be served by local roads and states that where authorities recognise these principal haulage routes, that noise criteria for the routes should reflect those for arterial or sub arterial roads.

Consideration is therefore given to the noise assessment criteria for existing residences affected by additional traffic generated by land use developments of 60 dBA (Leq, 15 hour) as well as a relative increase criteria of existing traffic noise level + 12 dB.

Attended noise and vibration surveys have been carried out at the Site in May and June 2017 and again in June 2018 (for 'Rockwood 3') and May 2018 (for 'Rockwood 1'). A blast was undertaken at 'Rockwood 3' on 11 May 2017 and ground borne vibration and air blast overpressure measurements were taken at the nearest residential receptors to the site (see **Table 15** and **Figure 38**):

Table 15: Receptor Locations

Receptor	Approximate distance in metres	
	Rockwood 1	Rockwood 3
R1 – 394 Gerogery Road	470	1200
R2 – 96 Winchester Lane	780	670
R3 – 48 Bridle Lane	1630	710
R4 – 154 Winchester Lane – (commercial)	1200	810
R5 – 22 Mountainpeak Lane	1000	800

Source: Environmental Noise Impact Assessment AP Delaney & Co Pty Ltd
(Ray Walsh, Acoustics, Noise & Sound and Harwood Acoustics, 2018)



Figure 38: Sensitive Noise Receptors (Ray Walsh, Acoustics, Noise & Sound and Harwood Acoustics, 2018)

The measured vibration and air blast overpressure levels were found to be well within the acceptable limits set by the EPL (see **Table 16**) and are therefore acceptable.

It is not practicable to directly measure the level of noise emission from the operational activities undertaken at either quarry pit at any of the nearby receptor locations in terms of an energy average sound pressure over a minimum period of 15 minutes (L_{eq} , 15 minute). This is due to the significantly lower level of quarry noise received at these locations compared to levels of ambient and extraneous noise.

During the noise surveys the measured short-term energy average sound pressure levels (L_{eq} , short-term) during lulls of extraneous noise were found to be well below 35 dBA at the receptors closest to each of the Quarries, whilst the quarries were in full operation. These measured short-term noise levels that were well below 35 dBA are also affected by extraneous and ambient noise and the contribution from the quarry activities is lower still.

Notwithstanding this, noise measurements have also been taken of all processes, plant and equipment used at each of the quarries during typical operations. Measured noise levels have been used to undertake noise modelling to each of the potentially affected receptor locations.

Measured short-term noise levels and predicted 15-minute noise levels through noise modelling were found to be well below the Intrusiveness Criterion set by the Industrial Noise Policy 2000 and Project Noise Trigger Level set by the Noise Policy for Industry 2017 at all receptor locations.

Table 16: Amenity Criteria for Noise

Type of Receiver	Indicative Noise Amenity Area	Time of Day	Recommended L_{eq} Noise Level (dBA)	
			Acceptable	Recommended Maximum
Residence	Rural	Day	50	55
		Evening	45	50
		Night	40	45
Residence	Suburban	Day	55	60
		Evening	45	50
		Night	40	45
Residence	Urban	Day	60	65
		Evening	50	55
		Night	45	50
Residence	Urban/Industrial Interface – for existing situations only	Day	65	70
		Evening	55	60
		Night	50	55
Commercial premises	All	When in use	65	70
Industrial premises	All	When in use	70	75

Source: Environmental Noise Impact Assessment AP Delaney & Co Pty Ltd
(Ray Walsh, Acoustics, Noise & Sound and Harwood Acoustics, 2018)

At no time was it possible to directly measure the level of quarry noise emission in terms of an energy average sound pressure level over a period of 15 minutes (L_{eq} , 15 minute) at either receptor location. This was due to the low level of quarry noise and the higher levels of ambient and extraneous noise at each location, particularly vehicular traffic traversing Gerogery Road.

Subjectively noise emission from the Quarries was most often not, and only on occasion just audible at either receptor location during the noise surveys. Short term L_{eq} noise level measurements and instantaneous sound pressure levels observed during lulls of ambient and extraneous noise were well below 35 dBA at each of the closest receptors during each of the noise surveys.

Furthermore, noise surveys were undertaken on the existing plant and equipment used on-site (see **Table 17**). Noise measurements were taken in terms of L_{eq} 15 minute at various distances from all plant and equipment operating under typical conditions utilising both Pits 1 and 3. The three stage crusher plant at Pit 3 was crushing rock for road base, which is reported to be a worst-case scenario with regard to noise emissions.

Table 17: L_{eq} 15 minute Sound Power Levels – Mechanical Plant and Equipment

Description	Individual Sound Power Level L_{eq} , 15 minute (dBA)
<i>Rockwood 1</i>	
Buckshot Screener – Rockwood 1	109
Front End Loader SC5 – Rockwood 1	106
<i>Rockwood 3</i>	
Three Stage Crushing Plant (with main screens)	116
Additional screening Plant – Rockwood 3	96
Rock Breaker	112
Excavator (loading rock / rubble)	110
Front End Loader (loading / moving rock – Rockwood 3)	110
Tipper Truck / Truck and Trailer	107

Source: Environmental Noise Impact Assessment AP Delaney & Co Pty Ltd
(Ray Walsh, Acoustics, Noise & Sound and Harwood Acoustics, 2018)

7.3.3 Impacts of the Proposal

In order to determine the impacts of noise of the proposed development on all outdoor noise sources, the external noise level at each receptor has been calculated using the following formula:

$$L_{eq} = L_w + D_c - A$$

Where:

- L_w is the sound power level of the noise source;
- D_c is directivity correction; and
- A is the attenuation that occurs during the propagation from source to receiver.

The term A in the equation includes attenuation from geometric divergence (distance loss), atmospheric absorption, ground absorption, barrier effects and miscellaneous other effects.

The model derives from the International Standard ISO 9613-2 (1996(E)) 'Acoustic Attenuation of sound during propagation outdoors Part 2 General method of calculation'.

Based on the results of the NIA, the predicted noise levels for the development are contained in **Table 18** below.

Table 18: Predicted L_{eq} Noise Levels – All Residential Receptors

Description	Predicted Noise Level $L_{eq, 15 \text{ minute}}$ (dBA) at Receptor Location				
	R1	R2	R3	R4	R5
Acceptable Noise Limit – Day (INP 2000)	35	35	35	35	35
Rockwood 3	<25	28	29	30	26
Rockwood 1	28	<25	< 20	< 20	< 20
Combined	29 – 30	28 – 29	29 – 30	30	26 – 27
Complies	Yes	Yes	Yes	Yes	Yes
Acceptable Noise Limit – Day (NPI 2017)	40	40	40	40	40
Complies	Yes	Yes	Yes	Yes	Yes

Source: Environmental Noise Impact Assessment AP Delaney & Co Pty Ltd
(Ray Walsh, Acoustics, Noise & Sound and Harwood Acoustics, 2018)

The predictions outlined in Table 16 consider the following:

- Distance loss to each receptor from various components of the quarry:
 - Crushing and screening plant at Rockwood 3 and 1 at fixed locations;
 - Front end loader, excavator and truck at northern end of Rockwood 3 as a worst-case scenario;
- Attenuation due to the shielding of the pit wall and topography of the land and/or ground absorption;
- All plant and equipment operating typically for a minimum 15 minutes with the exception of a truck which is assumed to operate on-site at full sound power for 7.5 minutes in 15;
- Both quarry pits operating simultaneously.

Historically, over the last ten years, blasting has occurred once approximately every two years. There is potential in the lead up to a blast for the front-end loader to be used to clear overburden at a higher level in the Quarry than the level at which the loader usually operates. It is reported that this is unlikely to be required for at least another five blasts (e.g. approximately 10 years' time).

If the loader operates at the northern end of the Rockwood 3 Quarry with direct line of Site to the residential receptor at R2, the predicted level of noise emission is 43 dBA $L_{eq, 15 \text{ minute}}$.

This level is above the INP 2000 Intrusiveness Criterion of 35 dBA and the NPI 2017 Project Noise Trigger Level of 40 dBA during the day.

However, it may not occur in practice and in the event that it does, it will be of short duration, once in approximately two years only and is therefore considered acceptable.

To minimise the impact, in the event that it does occur, all affected residences should be notified prior to commencement of the clearing of overburden and supplied with specific details of when the works will occur and at what time they will cease.

The NIA also undertook an assessment of the impacts of blasting.

Two blasts were conducted by Hamilton's Blasting services on Thursday 11 May 2017 at the quarry. The blast was set up in two different sections of the rock face and two separate shots were fired approximately 3 minutes apart.

Ground vibration and air blast overpressure measurements were taken during the blasts at the following locations:

- Attended measurements conducted at receptor R1 on concrete verandah of dwelling;
- Vibration monitor with overpressure microphone located in the ground on the front lawn adjacent to verandah at receptor R1; and
- Unattended measurement using vibration logger with overpressure microphone at the southern property boundary of receptor R4, with geophone mounted in the ground.

The results of the survey are shown in **Table 19** below:

Table 19: Measured Vibration and Overpressure Levels

	Vibration (Peak Particle Velocity)	Air Blast (Lin Peak)
	ANZECC Guide	ANZECC Guide
Criteria	2 to 5 mm/s & up to 10 mm/s	115 dB – 120 dB
<i>Measured Levels – Blast 1</i>		
Receptor R1 – House	0.54 mm/s	106
Receptor R1 – Yard	0.61 mm/s	117*
Receptor R2 – southern boundary	<0.5 mm/s (did not trigger)	Did not trigger
Complies	Yes	Yes
<i>Measured Levels – Blast 2</i>		
Receptor R1 – House	2.15 mm/s	115
Receptor R1 – Yard	3.61 mm/s	111
Receptor R2 – southern boundary	2.33 mm/s	112
Complies	Yes	Yes

* Although below the 120 dB max allowable level, the measured level on the vibration monitor is considered to be extraneous noise.

Source: Environmental Noise Impact Assessment AP Delaney & Co Pty Ltd
(Ray Walsh, Acoustics, Noise & Sound and Harwood Acoustics, 2018)

The Australian and New Zealand Environment Conservation Council (ANZECC) provide guidelines in the document *Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration* 1990. The guidelines recommended maximum level for ground vibration is 5mm/s (peak particle velocity - ppv).

The ppv level of 5 mm/s may be exceeded on up to 5% of the total number of blasts over a period of 12 months. The level should not exceed 10mm/s at any time. It can be seen from Table 16 that the level of peak particle velocity was below 5 mm/s during all measurements at all receptor locations.

The measured ppv level during the second blast was in excess of 2 mm/s at both locations whilst being below 5 mm/s. Nonetheless, the levels were below the maximum allowable level for any given blast of 10 mm/s and given the quarry is likely to blast once only every year or two, this is considered acceptable.

The impact of road traffic noise was also assessed as part of the NIA. At present, there are up to approximately five (5) trucks in and out of the Site (10 movements) on a typical busy day and this may increase to sixteen (16) trucks (32 movements) as a result of the proposed increase to the extraction rate.

All trucks will pass the same receptor at location R2 on Winchester Lane on both approach and exit. This residence is located at a distance of approximately 150 metres from the closest point of Winchester Lane and is considered to be the closest receptor to trucks passing along the route to and from the quarry.

Therefore, a calculation based on the sound exposure level for various vehicles has been carried out. The sound exposure level (LA_e) is a summation of the sound energy produced during a single event (i.e. a motor vehicle pass by, train pass by, etc). The author of the NIA has measured the level of noise emission from numerous heavy vehicles, including tipper trucks, truck and trailer, semi-trailers and truck and dog combinations and the average maximum measured sound exposure levels of a range of trucks, normalised to a distance of 10 metres is as follows: -

- Truck – 86 dBA.

The predicted noise level from existing on road vehicle movements (circa 10) during typical busy flows at the nearest residence is:

- Truck – 23 dBA (L_{eq}, 15 hour).

The predicted noise level from future on road vehicle movements (circa 32) during typical busy flows at the nearest residence is:

- Truck – 28 dBA (L_{eq}, 15 hour).

It can be seen that the predicted on road traffic noise level is below the limit of 60 dBA (L_{eq}, 15 hour).

It should be noted that the predicted 1 hour noise level for an assumed 6 truck movements as a worst-case scenario is 32 dBA (L_{eq}, 1 hour). This level is well below the level of 55 dBA (L_{eq}, 1 hour) during the day should the council deem Winchester Lane to be a local road rather than a haulage route.

As demonstrated above, the proposed quarry (at worst case scenario) is well within noise limits set by the existing EPL, the NSW EPA's *Road Noise Policy 2011* and the ANZECC *Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration 1990*.

7.3.4 Mitigation and Monitoring Measures

Notwithstanding the above, in order to ensure that noise and vibrations stay within acceptable limits, a number of mitigation and monitoring measures are recommended as part of the Project including:

- Limit blasting to avoid impacts of noise and vibrations;
- Notify neighbours via letterbox drop prior to any blasting event;
- Any noise from extractive industry operations must not exceed 35dBA at any residence off the site;
- Hours of operation to be limited to 7am to 6pm Monday to Saturday with no activities to occur on Sundays or public holidays outside of the disposal of biosolids, which is covered by a separate development consent and EPA license;
- Scheduling the use of noisy equipment at the least sensitive time of the day;
- Orientate heavy equipment away from any sensitive areas, to achieve the maximum attenuation of noise;
- Undertake regular and routine maintenance of machinery and other vehicles to ensure optimum running capacity so as to limit noise; and
- AP Delaney and Co will manage the design and size of blasts to meet relevant ANZECC and OEH ground vibration and air blast criteria at all sensitive residential receiver locations.

7.4 Heritage

Matters regarding European and Aboriginal Cultural Heritage (ACH) have been assessed as part of the subject proposal.

Following a review of Schedule 5 of the LEP, it is confirmed that the subject land does not contain any items or areas of European heritage significance or adjoin any areas of known heritage significance.

7.4.1 Aboriginal Cultural Heritage Assessment Report

In accordance with the requirements of the SEARs, the NSW OEH requested that an assessment of the potential impacts on Aboriginal heritage (cultural and archaeological) be undertaken, including evidence of appropriate consultation with relevant Aboriginal communities/parties and documentation of the views of these stakeholders regarding the likely impact of the development on their cultural heritage.

Accordingly, an initial Aboriginal Cultural Heritage Assessment Report (ACHAR) was undertaken by Biosis to investigate the heritage impacts of the proposal. A copy of this assessment is contained at **Attachment E** to this EIS and a summary of the assessment requirements and key recommendations and findings contained within this document is provided below.

Following further consultation post lodgement of the EIS with NSW OEH, it was requested that a second ACHAR be prepared to cover the full extent of all works, including the use of existing activity areas, as well as additional works including proposed road embankment and tree removal works within the Gerogery Road road reserve. A copy of this additional assessment is also contained at **Attachment E** to this EIS and a summary of the assessment requirements and key recommendations and findings contained within this second assessment is provided below.

The objectives of the ACHARs were to identify any issues of Aboriginal cultural heritage which may impact on the future expansion of the granite quarry.

This investigation was carried out under Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act) and was undertaken in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) ('the Code'). The Code has been developed to support the process of investigating and assessing Aboriginal cultural heritage by specifying the minimum standards for archaeological investigation undertaken in NSW under the NPW Act. The archaeological investigation must be undertaken in accordance with the requirements of the code.

It is noted that there are no Aboriginal cultural heritage sites registered with the Aboriginal Heritage Information Management System (AHIMS) register in the study area.

7.4.2 Consultation

The Aboriginal community was consulted during all stages of the project investigation during the preparation of both assessments. Consultation has been undertaken as per the process outlined in the DECCW document, *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010a) (consultation requirements).

The appropriate government bodies were notified and advertisements placed in the Border Mail newspaper on 20 May 2017 and 21 July 2018, which resulted in the following Aboriginal organisations registering their interest (Registered Aboriginal Parties (RAPs)):

- Raymond Kennedy (Dadi Dadi Weki Weki Aboriginal Corporation)(first and second ACHAR);
- Yalmambirra (first and second ACHAR);
- Dan Clegg (first ACHAR);
- Sam Kirby (Albury and District Local Aboriginal Land Council)(second ACHAR)

A search conducted by the Office of the Registrar, *Aboriginal Land Rights Act 1983* listed no Aboriginal Owners with land within the study area. A search conducted by the National Native Title Tribunal listed no Registered Native Title Claims, Unregistered Claimant Applications or Registered Indigenous Land Use Agreements within the study area.

Upon registration, the Aboriginal parties were provided with information about the project and the proposed methodology for the assessment. They were also invited to provide their knowledge on the study area and proposal. No responses were received from the RAPs.

Two RAPs (Raymond Kennedy and Yalmambirra) participated in the field survey for the initial ACHAR and three RAPs (Raymond Kennedy, Yalmambirra and Sam Kirby) participated in the fieldwork for the second ACHAR. A meeting with the RAPs was held following the initial field survey to discuss the results of the background research and the survey.

During this meeting both of the RAPs indicated that the granite boulders in the north-eastern corner of the study area may be an important ceremonial area. Yalmambirra also provided the following oral history information:

A very important Wiradjuri elder, who has now passed so I cannot say his name, told me that all the areas on high hills in this part of Wiradjuri country were important meeting and gathering places or ceremonial places for men or women.

No other comments or information were received during the fieldwork.

The outcome of the consultation process was that the RAPs considered the study area to contain an 'intangible place' of moderate cultural significance (see **Figure 39**); although that significance was not clearly defined and specific examples were not provided.

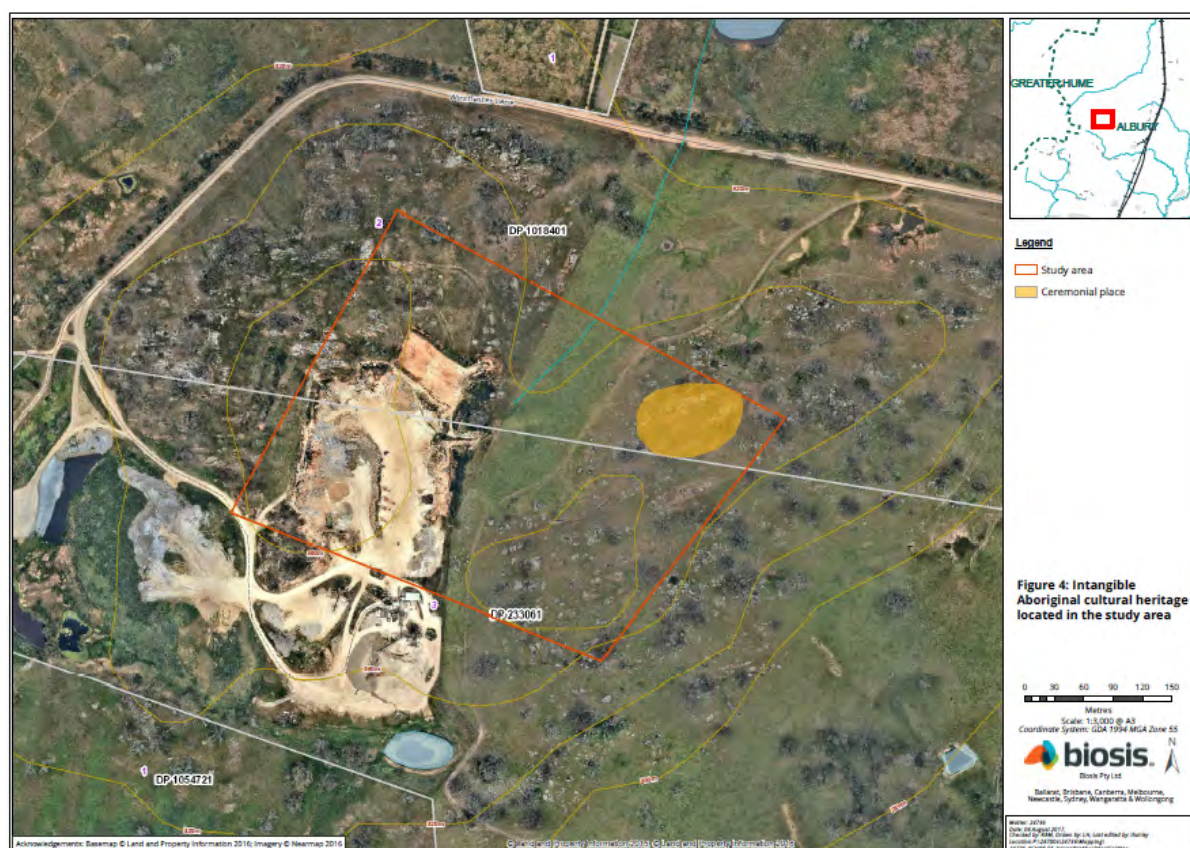


Figure 39: Intangible Aboriginal Cultural heritage located in the study area
(Source: Rockwood Quarry Aboriginal Cultural Heritage Assessment Report, Biosisis 2017)

As this area is not associated with any tangible Aboriginal cultural heritage site/object or potential archaeological deposit (PAD), it cannot be recorded in AHIMS. In addition, the site does not meet the criteria to be declared as an Aboriginal place under section 84 of the NPW Act. Only Aboriginal objects and Aboriginal places are protected under the *National Parks and Wildlife Act 1974*.

Notwithstanding the above, the boundaries of the proposed quarry expansion area (namely the north east corner) have been amended to generally avoid impacting this area.

Following the completion of the second archaeological survey, two (2) areas of Potential Archaeological Deposits (PAD's) were identified within the project area, identified as Pad 1 and Pad 2. Pad 1 comprised an area of land on a level footslope immediately adjacent an ephemeral waterway to the west and what appeared to be a naturally occurring drainage line to the east. Pad 2 comprised a hill crest/lookout point overlooking the entire study area (see **Figure 40**).

In response, a total of ten 50cm x 50cm pits were excavated within the two Pad sites at 20 metre intervals in order to determine the presence of any artefacts. Having completed this fieldwork, no artefacts were discovered during these test excavations, which is consistent with other studies within the region and which indicate that Aboriginal sites are largely identified within close proximity (100m) to permanent sources of fresh water.

The report concluded that given that there are no recorded Aboriginal sites/objects recorded in the study area, nor were any artefacts identified during the test excavations, the potential risk of harming Aboriginal cultural heritage is low.

As such an AHIP is not required for this site (see Appendix 6 of the ACHAR).



Figure 40: Potential Archaeological Deposit (PAD) sites and Test Excavation Results
(Source: Rockwood Quarry Aboriginal Cultural Heritage Assessment Report, Biosis 2019)

Matters regarding Aboriginal Cultural Heritage have been further assessed in response to an OEH letter dated 8 May 2019. In response, the ACHAR has been updated to include reference to AHIMS site 55-6-0064, including any potential impacts on this site.

In summary, the revised ACHAR concluded:

No evidence of the scarred tree (AHIMS 55-6-0064) identified during the initial AHIMS search (Client Service ID: 361646) was present within or immediately adjacent the study area. This may be due to discrepancies in mapping of the scarred tree (AHIMS 55-6-0064) which may be physically located some distance outside the current study area. It is, however, more likely that the tree was subject to destruction and no longer exists. Aboriginal representatives' onsite could provide no further information regarding the scarred tree. Further discussions via telephone in June and August of 2019, confirmed that no culturally modified tree was observed within or immediately adjacent the southern boundary of the study area. An Aboriginal Site Impact Recording Form (ASIRF) was submitted to AHIMS and approved on 22 July 2019, altering the status of mungabarina-mm1 (AHIMS site 55-6-0064) from an existing Aboriginal site to having

7.4.3 Mitigation and Management recommendations

Given there are no recorded Aboriginal sites/objects recorded in the study area, the potential risk or harm to Aboriginal cultural heritage is low.

Furthermore, prior to any development impacts occurring within the study area, the following is recommended:

Recommendations 1: No further assessment is required

No further archaeological investigation or works are required to be undertaken for the study area. In the event of an unexpected find, including human remains are unearthed during any phase of the project please refer to Recommendations 2 and 3 below.

Recommendation 2: Stop work provision for any potential heritage sites identified during the project

All Aboriginal places and objects are protected under the NPW Act. This protection extends to Aboriginal objects and places that have not been identified but might be unearthed during construction.

If construction proceeds without an approved AHIP, work must cease if Aboriginal objects or places are identified. The proponent and the project archaeologist must be notified to make an assessment of the find and advise on subsequent management.

Historical archaeological sites are protected under the relics provisions (s139 – 146) of the NSW *Heritage Act 1977*. Should any historical archaeological sites be identified during any phase of the proposed development, all works must cease in the vicinity of the find and the project archaeologist and A. P. Delaney & Co. Pty Ltd notified. Should the archaeological nature of the find be confirmed the Heritage Branch of the NSW Department of Planning, will require notification.

Recommendation 3: Stop work provision for any potential discovery of human remains

If any suspected human remains are discovered during any activity works, all activity in the vicinity must cease immediately. The remains must be left in place and protected from harm or damage. The following contingency plan describes the immediate actions that must be taken in instances where human remains or suspected human remains are discovered. Any such discovery at the activity area must follow these steps:

1. Discovery: If suspected human remains are discovered all activity in the vicinity must stop to ensure minimal damage is caused to the remains; and the remains must be left in place, and protected from harm or damage.
2. Notification: Once suspected human skeletal remains have been found, the Coroner's Office and the NSW Police must be notified immediately. Following this, and if the human remains are likely to be Aboriginal in origin, the find will be reported to the Aboriginal parties and OEH NSW. If the find is likely to be non-Aboriginal in origin and more than 100 years in age, the Heritage Council of NSW will be notified of the find under s.146 of the *Heritage Act 1977*.

These steps are also reproduced in **Figure 41** (overleaf).

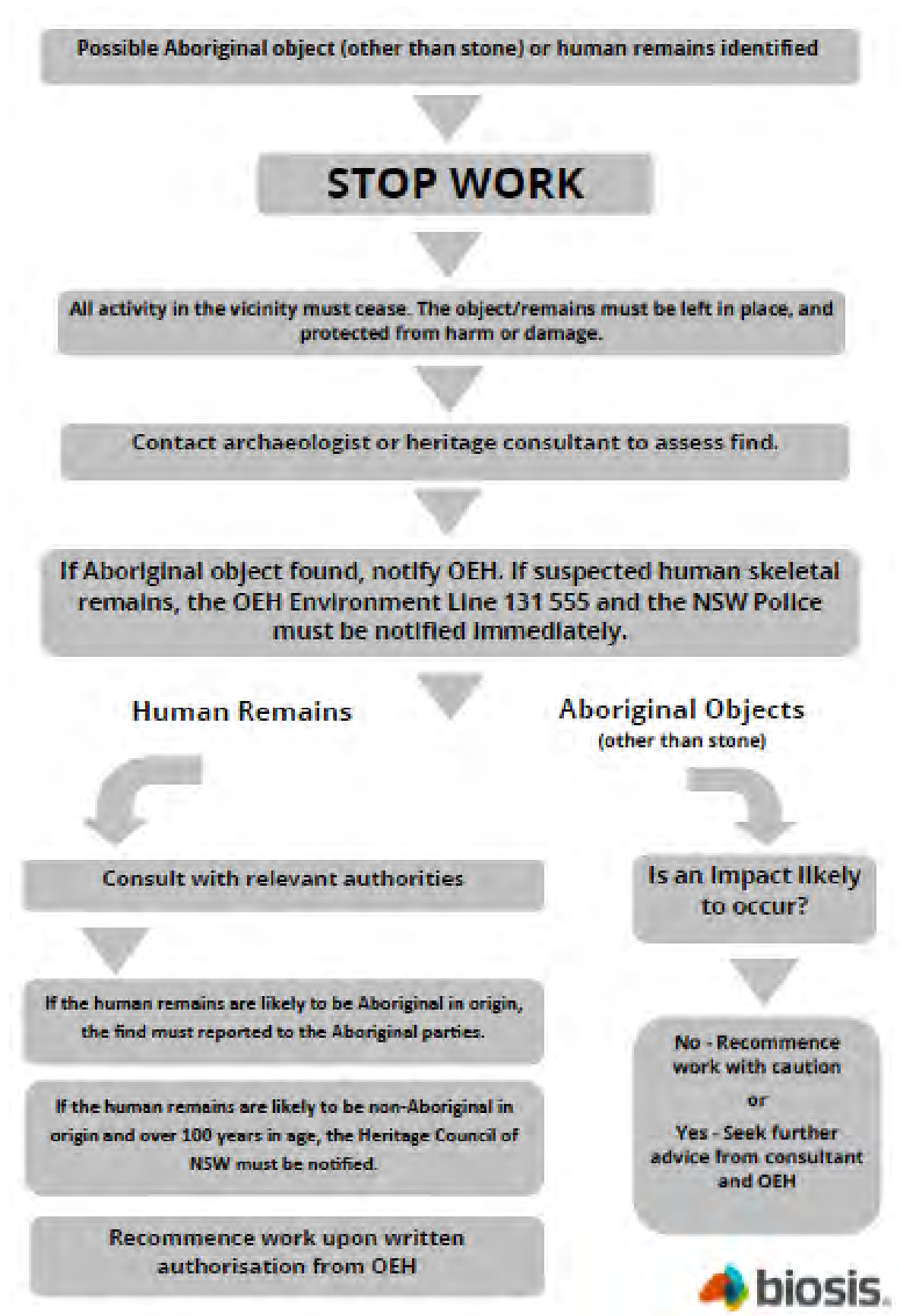


Figure 41: Summary of Stop Work Provisions following the discovery of human remains
(Source: Rockwood Quarry Aboriginal Cultural Heritage Assessment Report, Biosis 2017)

7.5 Erosion & Sediment Control

Matters regarding erosion and sediment control need to be established and maintained throughout the life of the project, so as to minimise the environmental impacts of the development, which could result in the pollution of land and waterways.

7.5.1 Existing Conditions

As outlined in previous sections of the report, the subject land has been operating as an extractive industry with associated works including the crushing of recycled concrete and the disposal of biosolid waste for the past 45 years. Accordingly, appropriate sediment and erosion controls have already been implemented and established on-site so as to minimise harm to the environment from the already existing quarry.

More specifically, the subject land has already been gradually rehabilitated following the completion of each stage of the development so as to minimise the area of disturbed land, which can lead to erosion and sediment control issues. In particular, it is noted that Pit 2 has already closed and been rehabilitated back to its natural state (grazing land).

As outlined throughout this report, the current operator stages the works to ensure that the area of land that is exposed or disturbed at any one time is minimised. This ensures that the site is gradually developed, whilst at the same time being rehabilitated. This also ensures that groundcovers are established and that new landscape plantings have an opportunity to grow prior to the full closure of existing operations on site.

Particular controls that have been implemented in the operation of the existing quarry and waste disposal areas include: diversion banks, cut off drains, silt fencing, hay bales and the use of existing storage dams to filter and treat the existing run-off. Furthermore, existing access roads have been established and are watered down during times of hot, dry and windy weather, vegetation removal is limited and existing storm-water treatment /detention basins are regularly monitored and maintained. All these measures ensure that sediment and water run-off do not adversely affect the surrounding environment and do not travel off-site.

Accordingly, the current operations on-site comply with the requirements of:

- The 'Blue Book' (*Managing Urban Storm water: Volumes 1 and 2*);
- DECC guideline *Managing Urban Stormwater: Soils and Construction – Volume 2E: Mines and Quarries*;
- Council's *Soil and Water Management Policy*.

Further discussion regarding the DECC guideline is provided in **Section 4.6.19** of this report.

7.5.2 Impacts of the Proposal

The continued use and operation of this site as an extractive industry will result in land disturbance and earthworks, which will require the planning, design, construction and maintenance of effective erosion and sediment control measures.

A range of water management issues need to be considered, including the use of water for:

- dust suppression
- site revegetation
- mineral processing
- the washing or separation of extracted materials; and
- the management of stormwater within, and sometimes outside, the site.

The scale and nature of extractive industries mean that they have the potential to significantly impact surface runoff and groundwater quality through contamination with dissolved and suspended material. Water-quality issues include:

- sediment-laden runoff from overburden emplacements, waste-rock dumps, stockpiles and other disturbed areas
- stormwater contamination from process plants, workshops, vehicle wash-down areas etc.
- acidic mine drainage from the oxidation of sulfur or sulfuric ores, which can also contain dissolved heavy metals
- elevated salinity levels, as mining can disrupt saline aquifers or allow salt to be leached from freshly shattered overburden.

The most common surface-water contaminant from mining and quarrying is sediment or 'Total Suspended Solids' (TSS), produced by soil erosion from lands disturbed by the mining or quarrying activity.

7.5.3 Mitigation and Monitoring Measures

In response to the likely impacts of the proposal, a number of mitigation and monitoring measures are recommended as part of the Project including:

- Erosion and sediment controls to be maintained and periodically reviewed until an area has been rehabilitated back to its natural state;
- Stage works on-site to minimise the area of disturbance. Where works have been completed within an area undertake rehabilitation works;
- Sediment traps or filters to be located and placed near all disturbed areas where potential water run-off may occur. Install hay bales along run-off areas or rock beaching at outfall pipes to help filter storm-water run-off;
- Locate silt fences at strategic positions (downslope) to trap sediments;
- Provide stockpiles with adequate batters to prevent sediment transportation;
- Regularly maintain and monitor all erosion and sediment control measures (such as cleaning out silt fencing) to ensure they are effectively functioning;
- Before excavation, the works areas are to be protected from surface water flow by soil berms constructed on the perimeter of the pits and diversion banks that divert surface flow around the excavation site;
- Ensure that areas of disturbance are minimised and rehabilitated as soon as works are finished;

- Topsoil (biomass) shall be stockpiled for use elsewhere on-site or as part of future rehabilitation works and diversion banks constructed around the piles;
- Ongoing maintenance and cleaning of sediment collection dams;
- Following completion of rehabilitation works, ensure that livestock access to the quarry and re-vegetated areas is prevented as vegetation can be trampled on and soil exposed.

7.6 Soil & Land Resources

No formal soil or land resources assessment has been prepared for the site in recognition of the fact that the subject land is already operating as an extractive industry and has done so for the past 45 years. Notwithstanding, an assessment of the land resources available on-site has previously been investigated, which has informed the preparation of the current application.

It is noted that the material that is extracted on site (granite) is not a prescribed mineral under the *Mining Act 1992* and the role of the Department of Resources and Geosciences is limited to its role under WHS laws with respect to the safe operation of mines and quarries. Notwithstanding, the subject application has been prepared to have regard to the requirements of this Authority.

It is confirmed that the extracted materials are privately owned and are not a Crown mineral.

7.6.1 Existing Conditions

As outlined in **Section 2.2.4** of this report, the subject land already operates as an existing extractive industry and undertakes works within two (2) existing quarry pits, being Pit 1 and Pit 3. An additional pit (Pit 2) previously existed on-site, but has since closed and been rehabilitated back to farmland.

The subject land currently has approval to extract 75,000m² of crushed rock. As outlined within **Sections 2.1.3** and **2.1.4** of this report, the subject land is mostly comprised of Jindera granite which typically occurs at the base of highly weathered granite at a depth of approximately 8 metres. In both the quarried and unquarried areas, the moderately to highly weathered granites are overlain by about 2 metres of extremely weathered granite and clayey gravel.

More specifically, Pit 1 contains granite gravel and granitic sands, known locally as “buckshot”, which is used in site works and road building activities or alternatively is used as an additive in the production of crushed rock at the site operator’s ‘Koowong’ Quarry. This material is currently excavated on a 3-4 metre face into the hillside using 30 and 40 tonne excavators.

In addition, Pit 3 comprises the harder diorite granites, which are overlain by 6 – 8 metres of moderately to highly weathered granites, which in turn are overlain by very highly weathered granite gravels and clay. The source rock material has been found to be very hard and durable and ideally suited to making high quality road base and fine crushed rock.

Also present on-site is a topsoil layer nominally 100mm thick that contains a layer of naturally occurring grasses and vegetation.

At present the land is not used for any productive agricultural purposes and given the topography of the land and its proximity to large heavy industrial areas, it is not suitable for industrial, commercial, residential or rural residential purposes.

7.6.2 Impacts of the Proposal

The subject application seeks approval to undertake extractive industry works within Pit 1 and Pit 3 for a 30 year period. In addition, the application seeks approval for a maximum annual extraction of crushed rock on-site of 100,000m³ per annum and expand Pit 3 in a north easterly direction beyond its current footprint.

Accordingly, the development and use of the subject land as an extractive industry has the potential to impact soil and land resources including:

- Loss of productive agricultural lands;
- Sterilisation of land for future development or land uses;
- Contamination of soil and groundwater; and
- Changes to landform and topography.

As outlined above, given that the subject land has been operating as an extractive industry for the past 45 years, the continued operation and use of this land as a quarry is considered appropriate in this instance. More specifically, the land is not considered suitable for productive agricultural purposes due to the topography of land and the rocky outcrop of the soil.

Furthermore, given the sites' proximity to large established and proposed industrial developments, as well as another existing quarry (Burgess' quarry), the land is not considered suitable for future residential or rural residential development nor will it sterilise the land for these purposes.

Matters regarding land contamination are also appropriate with the historical operations on-site not resulting in the contamination of land and soils. It is noted that no bulk storage of fuel occurs on-site with vehicle re-fuelling undertaken using mobile service trucks. Where vehicles are fuelled on site, this occurs within bunded areas to ensure that no fuel leaks into surrounding waterways and drainage lines.

Lastly, matters regarding changes to landform and topography are already appropriately managed via continual and staged rehabilitation works at the completion of each phase of the development. At the conclusion of works, the land will be rehabilitated back to its natural state (grazing lands) and the land will be reshaped and filled using virgin materials, stockpiles of topsoil and vegetation litter/tree litter, which will result in the regeneration of the land. Further details regarding rehabilitation are discussed in **Section 7.15**.

7.6.3 Resource Assessment

In accordance with the requirements of the SEARs a Resource Assessment has been undertaken

Regional and Local Geology

The regional geology consists of Palaeozoic bedrock which forms the local highlands. The stratigraphic history commences with thick sedimentary sequences of claystones and sandstones of Ordovician age. In the late Ordovician, these sedimentary rock formations were folded and deformed imposing strong axialplane slaty cleavage. Broad areas also were subjected to high grade metamorphism and recrystallised to form quartz-mica schists and gneisses.

During the late Ordovician and Silurian, granitic melts, intruded the meta-sedimentary rocks and crystallised as granite and granodiorite bodies that presently underlie much of the region. Acid volcanics were also extruded, probably later, in the Early Devonian. Subsequent uplift and erosion have occurred with the most recent deposition in Tertiary and Quaternary times as riverine sediments.

Rockwood quarry and the adjoining Norske Skog Paper Mill are underlain by the Jindera Granite, which locally is a fine-grained biotite granite. The fine grain size suggests that the local area is a chilled margin of the main body of granite. Rockwood's quarry is sited on "The Rock" outcrop, a residual hill within the region. Elsewhere such as at Norske Skog, the depth of weathering of this granite is substantial and colluviums and alluvium along the major drainage systems are present (GHD, 1993).

More specifically and as outlined above, the land contains: very highly weathered granite gravels and clay, harder diorite granites and granite gravel and granitic sands, known locally as "buckshot".

A plan showing the regional geology of the area is provided in **Figure 42** below:

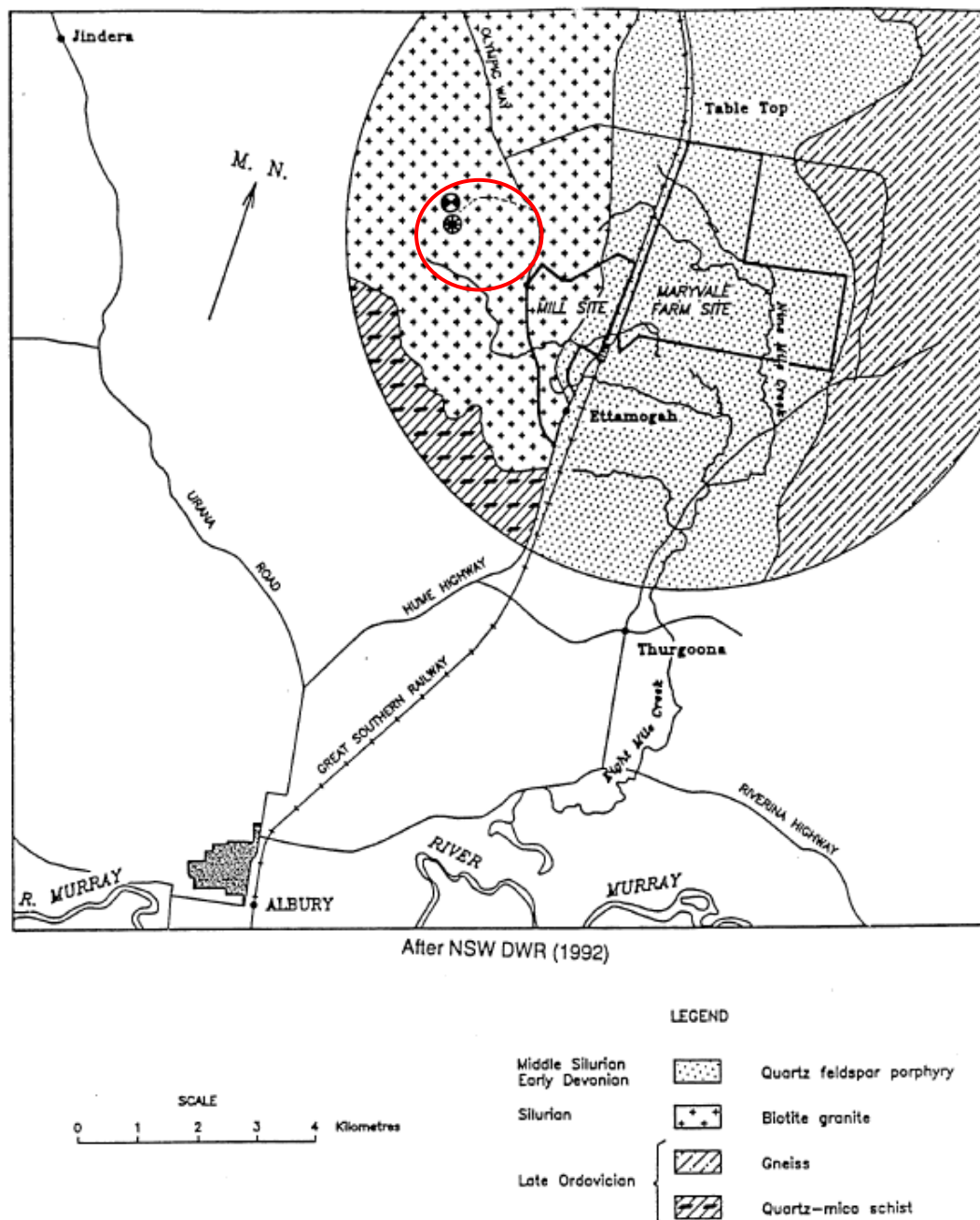


Figure 42: Regional Geology Plan indicating the subject land (red outline)
(Source: Australian Newsprint Mill Solid Waste Management Plan, GHD 1993)

Material to be extracted

At present, the existing quarry has approval to extract up to a maximum of 75,000m³ of material per annum with the subject proposal seeking to increase this total to a maximum of 100,000m³ per annum. The extraction of this material will occur on an 'as needs' basis to satisfy the current operator's local road construction and earthmoving operations.

Based on a proposed lifespan of 30 years and assuming maximum production is achieved each year, the subject proposal will equate in the total extraction of 3,000,000m³ worth of materials that could be excavated over the life of the quarry.

As outlined throughout this report, the subject land already operates as a quarry. Accordingly, previous investigations have already been undertaken to determine the availability of in-situ resources present on-site.

Investigations were undertaken via the drilling of a number of bores across the subject land at varying depths as part of the preparation of a hydrogeological assessment report for the disposal of biosolid waste on-site. The location of these bores was dug to the south west of Pit 3 in the existing waste disposal area, as well as in the south west corner of Pit 3 located adjacent to the current area of works. These bores were drilled at varying depths, with four (4) shallow bores drilled to a depth of 10 metres, one (1) drilled to a depth of 20 metres and two (2) bores drilled to a depth of 103 metres and 130 metres, respectively.

A plan identifying the bore locations, a cross section showing the in-situ materials present on site and copies of the bore hole logs are included as **Attachment M** to this report.

The lithological logs of the two deep bores confirm that the subject land is underlain by variably weathered granites up to a depth of 130 metres. This variation occurs across the site and at depth. The only exception is the uniform thickness of about 2 metres of gravelly clay found at the surface in both the quarried and non-quarried areas.

Below the surficial gravelly clays the granite is competent with only minor intersections of extremely weathered granite. As indicated by a lack of significant water intersections, no major clean fissures were intersected as part of the drilling process.

Whilst it is acknowledged that a cross section of the subject land showing the in-situ resource material has not been provided, given that previous investigations on-site have confirmed that granite material is located to a depth of 130 metres and the development only proposes to undertake quarrying works to a depth of 6 metres (as it relates to Pit 1) and up to 30 metres (as it relates to Pit 3), there is ample resources available on-site to support the proposed development.

Characteristics and suitability of material produced

The existing quarry produces road base materials used in the construction of roads that meets Vicroads Class 2 and Class 3 specification for road making materials. The material also achieves NSW RTA classifications for Fine Crushed Rock.

The existing properties of this material including grainsize and weathering make it ideal for road construction purposes. At present, the existing quarry produces roadbase material from naturally occurring materials, as well as via recycled materials, namely concrete.

Section 812 of the Vic Roads Guideline – Crushed Road for Pavement Base and Sub Base covers the relevant requirements of crushed rock and plant mixed wet-mix crushed rock for 20 mm nominal size Class 1 and Class 2 base, 20 mm and 40 mm nominal size Class 3 subbase and Class 4 crushed rock subbase.

As outlined above, the material produced on site is defined as Class 2 and Class 3 material, which is defined as follows:

- **Class 2** is a high quality pavement base material for unbound flexible pavements in locations where a very high standard of surface preparation may not be required. Class 2 crushed rock does not have a minimum Plasticity Index or a maximum permeability requirement.
- **Class 3** is a high quality upper subbase material for heavy duty unbound flexible pavements. It may have a minimum permeability requirement to provide positive drainage to the sub-surface drains. Where specified, Class 3 may be used as base for lightly trafficked pavements provided the material produces sufficient cohesive fines during compaction.

More specifically, sub-base course materials shall consist of crushed rock or gravel, natural gravels or uniformly blended natural gravels, free of clay lumps, organic matter or other deleterious substances. Specific classifications that this material must achieve for a Class 2 road pavement and Class 3 road pavement are outlined below in **Table 20**:

Table 20: Sub-base course materials

AS Sieve Size (mm)	Percentage Passing before Compaction (Vic Roads Table 812.082)
26.5	100
19.0	95-100
13.2	75-95
9.5	60-90
4.75	42-76
2.36	28-60
0.524	10-28
0.075	4-10

Source: Vic Road Guideline Section 812

In addition to the grading specified above the material shall have the following additional characteristics:

Liquid limit shall not exceed:	35%
Plasticity Index shall not exceed:	10%
Linear shrinkage shall not exceed:	4%
The Los Angeles abrasion loss shall not exceed:	45%

The Californian Bearing Ratio value shall not be less than 60%. The value is applicable to material passing 19.0mm sieve, originally at a dry density equal to 95% of maximum dry density obtained in the Modified compaction test and remoulded at Optimum Moisture Content.

Similarly, basecourse material shall consist of hard and durable crushed rock or gravel, free of clay lumps. Organic matter or other deleterious substances. The particle size distribution shall comply with the grading shown below in **Table 21**:

Table 21: Basecourse materials

AS Sieve Size (mm)	Percentage Passing before Compaction (Vic Roads Table 812.072)
26.5	100
19.0	95-100
13.2	78-92
9.5	63-83
4.75	44-64
2.36	30-48
0.524	13-21
0.075	5-9

Source: Vic Road Guideline Section 812

In addition to the grading specified above the material shall have the following additional characteristics:

Liquid limit shall not exceed:	30%
Plasticity Index shall not exceed:	6%
Linear shrinkage shall not exceed:	3%
The Los Angeles abrasion loss shall not exceed:	40%

If non-plastic, the material shall have a maximum dry compressive strength of not less than 1.7 MPa. The proportion of misshapen particles in the fraction retained on the 9.5mm sieve shall not exceed 20% using a 3:1 ratio.

The California Bearing Ratio value shall be not less than 120%. The value is applicable to material passing 19.0mm sieve, originally at a dry density equal to 100% of maximum dry density obtained in Modified compaction test and at Optimum Moisture Content.

To ensure compliance with relevant specifications, the material is subject to independent testing at a NATA registered testing laboratory to ensure it is appropriate for its current application.

Copies of relevant product testing results prepared by Coffey's and Civil Test Albury Wodonga are provided at **Attachment P** confirming that the subject material extracted and produced currently on-site complies with the relevant VicRoads and NSW road construction requirements.

Quantity of material

As outlined in **Section 3.4** of this report, the development seeks approval to extract a total maximum of 100,000m³ per annum, however it is likely that the development will not achieve this maximum and will operate on an as needs basis to satisfy the site operators local road construction business.

Given the amount of total material proposed to be excavated and the size of the proposed development footprint, works will be staged commensurate with demand, which will ensure that the area of site disturbance is minimised.

A staging plan has been prepared for the development (see **Figure 23**), which identifies that the quarry will be developed generally northwards (Stages 2 & 3) and will then continue east and north-easterly (Stages 4-6). In accordance with best practice requirements, rehabilitation works will also be staged commensurate with site activities to ensure that those areas no longer required for extractive industry purposes are rehabilitated and returned to former grazing land.

The quarry will operate for at least the next 30 years, depending on the amount of in-situ resources that remain on-site.

Existing quarrying activities

As outlined throughout this report, the subject land already operates as a quarry ('Rockwood Quarry'). **Section 1.2** and **Table 2** of this report provides details of the background and site history of this property, whilst **Section 2.2** provides details of current production methods and extraction rates.

Alternative extractive material sources

There are a number of alternative sources of road base material available from other quarries located within the Albury/Wodonga area and surrounds that can produce quarry material including:

- Begley Brothers Quarry, Wodonga;
- Burgess' Quarry, which is located immediately to the south west of the subject land;
- Walsh's Quarries at Table Top and Holbrook;
- Nordcon's Quarry, Wodonga;
- Cartright Earthmoving, Wodonga;
- Gordon Douglas, Wodonga; and
- Readymix Quarry.

It is noted however that of the above quarries, the only quarry that provides the same granite source material is Burgess' Quarry, which is located on the adjoining hill to the south west. Whilst the other quarries do produce crushed rock, these are from river gravels, which produce a slightly different product.

In addition, it is also noted that the current site operator also operates several other quarries including: 'Koowong', which is located 5 kilometres east of Albury along the Riverina Highway, Albury and 'Bankview', which is located 18 kilometres west of Albury. Both of these quarries are river gravel and sand quarries and do not produce any granite material, which is produced at Rockwood.

Details regarding the impacts of not proceeding with the proposal are discussed in **Section 1.7** of this report.

Justification for the proposal

Details regarding the justification for the proposal in terms of the local and regional context are discussed in **Section 1.8** of this report. In summary, the proposed development is considered justified in this instance.

Location and size of markets for material

The existing and proposed quarry will supply the local road construction and development industry of Albury/Wodonga and its surrounds and will support the existing site operator's local road construction business.

All materials that are excavated on site will be excavated on an as needs basis and it is clarified that the existing quarry does not operate as a commercial quarry and only serves the needs of the existing site operator. Notwithstanding, should the quarry be operated as a commercial quarry, there are ample resources available to service the local markets and development industry.

Transport Routes

Primary vehicular access to the subject land (Pit 3) is derived from the existing unsealed Winchester Lane, which intersects with the adjoining sealed Gerogery Road located to the east. A secondary unsealed access road also exists approximately 1.2 kilometres further south towards the Nexus industrial estate via an existing Travelling Stock Reserve (TSR) that will be used to access Pit 1.

Local roads will be used to transport materials extracted and processed on-site. Primary vehicle access routes will occur via Winchester Lane, which connects with Gerogery Road. The majority of vehicles leaving the site for local markets will exit the site and head south along Gerogery Road and Wagga Road towards the full diamond interchange at Thurgoona Drive where it will be transported to local markets, including the residential growth areas in Thurgoona to the east and Wodonga to the south.

Further details regarding traffic and site access are discussed in **Section 7.9** of this report and a Traffic Impact Assessment has been prepared as part of the development and is included as **Attachment F** to this report.

Waste Disposal and Stockpiles

The existing and proposed quarry does not generate any wastes during the extraction and crushing process as all excavated materials can be used to suit market demand. Topsoil is stockpiled adjacent to works areas for later use in the rehabilitation process and wastes on-site are generally limited to wastes from staff amenities buildings (packaging and food scraps).

Other wastes associated with the crushing of concrete include scrap metal and steel, which are separated out during the crushing process. These materials are separated out during the screening process via several rotating magnets, which will be attached to the conveyor belts and used to remove any residue or scrap metal contained within the crushed material (particularly reinforcing from recycled crushed concrete). These metal wastes will then be stockpiled and loaded into containers where they will be later transferred to a metal recycler once they are full.

It is also noted that a small amount (approximately 20-30m³) of inert pieces of hard and soft plastics, as well as timber are removed from crushed concrete products and are collected and disposed of off-site. A septic disposal area is also located to the south of the existing staff amenities building.

As outlined above, the subject land is also currently used to dispose of waste water generated from the adjoining Norske Skog Newsprint Mill during times of wet weather. Consideration of the environmental impacts of the disposal of this waste has already been considered and is controlled and managed in accordance with an existing development consent and EPA license.

The development utilises a number of stockpiles for the storing of materials. Rockwood Quarry utilises a number of stockpiles for the storage of materials, which are later transported off-site. Pit 1 currently contains two stockpiles of material, whilst Pit 3 contains four stockpiles of materials and a concrete storage area (stockpile).

These stockpiles generally range in size from 100m³ to 5,000m³ and are approximately 15 metres in height depending on the amount of material that is stockpiled at any given period. These stockpiles will gradually (or rapidly) depending on demand be reduced and once almost exhausted, will trigger a need for further extraction and stockpiling for use.

The two stockpiles contained within Pit 1 are generally comprised of naturally occurring (unscreened) granite gravel and screened granite gravel whilst the stockpiles contained within Pit 3 are generally comprised of Class 2 Fine Crushed Rock (FCR) and processed recycled crushed concrete. An additional concrete storage area (stockpile) is also contained within Pit 3, which is used to store concrete waste materials that are waiting to be separated and processed.

Noise, Vibrations, Dust and Visual Impacts

Matters regarding noise and vibrations have been considered and a separate Noise Impact Assessment has been prepared for the site by Ray Walsh Acoustics (see **Attachment G**). Further details regarding noise and vibrations are discussed in **Section 7.3** of this report.

In summary, the proposed development complies with relevant EPA guidelines.

Matters regarding air quality have also been assessed and a separate Air Quality Impact Assessment has been prepared for the site by GHD (see **Attachment H**). Further details regarding air quality are discussed in **Section 7.7** of this report.

In summary, the proposed development achieves relevant air quality requirements.

Lastly, matters regarding visual impacts have also been assessed and are considered appropriate in this instance. More specifically, due to the terrain and topography of the subject land and the location of current and proposed quarrying activities on-site, the area of extraction is shielded from adjoining sensitive receptors by the existing ridgeline of Nine Mile Hill and the landscape plantings currently present on-site. In response to previous concerns raised by adjoining neighbours, the current operator has relocated a number of activities and ensured that all works are now conducted below the ridgeline and screened away from view.

Whilst it is acknowledged that the existing quarry will be visible from adjoining industrial developments and another existing operating quarry (Burgess' Quarry), these are not 'sensitive receptors' and the impacts upon them will be low.

Similarly, the impacts on adjoining public roads will also be low given the location and extent of the proposed works. In particular, the area of extraction will be largely screened from the adjoining Gerogery Road due to dense roadside vegetation present along this roadway, the large distance from this roadway, as well as the natural terrain of the land which screens the area of works.

Further details regarding visual amenity are discussed in **Section 7.11** of this report.

Rehabilitation

The site operator is committed to the effective rehabilitation and eventual closure of Rockwood Quarry once all resources have been exhausted from the site. This will be achieved through progressive and staged rehabilitation works to work progressively towards the eventual final rehabilitation and closure of the site.

At the completion of extraction works on-site, AP Delaney & Co proposes to rehabilitate the entire site back to its natural state and pre-development conditions, being rural paddocks and grasslands consistent with a number of adjoining lands. Given the proximity of the subject land to adjoining industrial developments and larger extractive industries, the land will most likely remain rural in nature and will serve as a transition or buffer between adjoining industrial lands to the south and rural residential dwellings to the north.

Closure and rehabilitation objectives have been established for the project and a rehabilitation methodology has been established. Further details regarding rehabilitation and future land uses are discussed in **Section 7.15** of this report.

Backfill materials and sources

The development will involve the importation of a variety of fill materials, which will be used to backfill excavated areas of the site as part of the rehabilitation process.

As outlined within the Quarry Closure and Rehabilitation Plan, the development will require the importation of a total of approximately 760,000m³ of fill material across the three rehabilitation areas. The fill material will be sourced by the quarry operator as part of their ongoing civil construction projects and will be supplemented with additional fill sources. These additional sources will comprise biosolid waste (Pit 1), vegetative mulch, clean virgin soil (Virgin Extracted Natural Material) and overburden that has been stockpiled as part of quarrying activities conducted on-site.

A summary of the proposed extraction and fill rates, as well as proposed fill sources are outlined in **Tables 22** and **23** below.

Table 22: Summary of Extraction and Fill Rates

	Waste Disposal Area	Pit 1	Pit 3	Total
Extraction	N/A	50,000m ³ *	2,850,000m ³ *	2,900,000m ³ *
Fill	150,000m ³	40,000m ³	570,000m ³	760,000m ³

* Note: These excavation rates are based on an assumed maximum threshold of 100,000m³ being achieved each year for the life of the quarry. Where these extraction rates do not achieve this maximum limit, the timings of excavation and rehabilitation works will need to be adjusted.

Table 23: Schedule of Fill Sources

Fill Sources	Biosolid Disposal Area	Pit 1	Pit 3	Total
Biosolid Waste	@ 4,500m ³ p.a x 30 years = 135,000m ³	N/A	N/A	135,000m ³
Overburden	N/A	@ 0.3m x 7,600m ² = 2,280m ³	@ 0.3m x 126,700m ² = 38,010	40,290m ³
Vegetative mulch (Norske Skog log sweepings)*	N/A	@ 1,200m ³ p.a x 5 years = 6,000m ³	@ 1,200m ³ p.a x 25 years = 30,000m ³	36,000m ³
Clean Fill	15,000m ³	31,720m ³	501,990m ³	548,710m ³
Total	150,000m³	40,000m³	570,000m³	760,000m³

* Note: Rockwood quarry receives up to 1,200m³ of vegetative mulch/log sweepings from the adjoining Norske Skog Paper Mill per annum. Given the need to ensure an appropriate soil profile and due to the size of the void in pit 3, the majority of this material will be disposed of in this quarry pit.

It is important to note that the primary business of the quarry operator is as an earthmoving and construction company. As a consequence, the business generates its own fill material from civil construction projects, namely greenfield subdivisions. Based on historical records, AP Delaney and Co generates between 15,000-20,000m³ of clean fill material per annum as part of normal business operations. This would equate to a total amount of fill being generated of between 450,000m³ to 600,000m³ over a 30 year period.

As a consequence, the 'airspace' produced by quarrying activities is a valuable resource for the business operator, which they can use to dispose of excess material produced by construction activities. In essence, the backfilling of the site will not only serve rehabilitation purposes but will also help the current business operator to dispose of excess clean fill material.

All fill to be imported on-site will be in accordance with the NSW EPA Waste Classification Guideline ensuring that the material is a Virgin Extracted Natural Material (VENM) or equivalent. Where backfill material is reshaped and battered, this will occur in accordance with the NSW Resources Regulator Guideline, *Health and Safety at Quarries*, the RTA *Guide to Slope Risk Analysis* and the Australian Geomechanics Society *Guidelines for Landslide Risk Management*.

Of the total material imported/backfilled on-site, it is important that the finished site achieves an appropriate 'soil profile', which can sustain any proposed future rehabilitation and/or revegetation works.

More specifically, the bottom layer of the soil profile will comprise the lower quality fill materials, including any rock spill. The middle layer will comprise better quality clean virgin fill material mixed with vegetative mulch, whilst the top layer will comprise the majority of the clean virgin fill, overburden and a small component of vegetative mulch mixed throughout, which will help improve the soil profile of the finished surface area and better sustain vegetation.

Notwithstanding the above, it is noted that the majority of the quarry areas currently comprise cleared paddock grasslands with the intention to return these to their current rural condition. Notwithstanding, those rehabilitation areas that adjoin existing environmental areas will be revegetated consistent with the adjoining vegetation type.

It is noted that no excavation and associated backfilling works are proposed in the environmental offset areas currently zoned RU2 Rural Landscape, which will allow for revegetation works to occur in the current soil profile.

Ecological Sustainability

Matters regarding ecological sustainability have been addressed throughout this EIS report and are considered satisfactory in this instance. More specifically, the development has considered matters regarding biodiversity, water, heritage, erosion and sediment control, soil and land resources, air quality, waste management and rehabilitation and future land uses.

In summary, the proposed development is considered to be ecologically sustainable as it seeks to avoid areas of ecological sustainability and maintains and proposes a number of environmental protection measures as recommended by accompanying specialist reports.

Conclusion

The existing quarry currently provides an important local resource that represents a locally important source of hard rock aggregate for the Greater Albury area.

Given that the current quarry has operated for the past 45 years without failure or incident, there is confidence that the ongoing use and expansion of the site as a quarry will not create any operational problems and/or failure.

7.6.4 Mitigation and Monitoring Measures

A number of mitigation and monitoring measures are recommended as part of the Project including:

- Continue to test the quality of the excavated material to ensure it is appropriate for its intended application;
- Undertake appropriate work, health and safety requirements during all site activities;
- Erosion and sediment controls to be implemented and maintained continuously throughout the period of operation of the quarry and maintained until a rehabilitation program is completed; and
- Site remediation/rehabilitation works to be undertaken to restore the land back to its natural state at the completion of works as per **Section 7.15**.

7.7 Air Quality

An Air Quality Impact Assessment (AQIA) has been prepared by GHD in accordance with the EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (DECC, 2005).

The AQIA assessed the operational air quality impacts likely to result from the increase in extraction rate, compared the predicted impacts to relevant legislative criteria and provides mitigation recommendations to ensure that the quarry will operate within criteria guidelines.

The following section provides a summary of the AQIA and a full copy of this report is available in **Attachment H**.

7.7.1 Existing Air Quality and Receiving Environment

As discussed in **Section 2.2** of this EIS, the receiving environment of surrounding lands is mixed with land to the south, east and west comprising environmental lands, heavy industrial development, another existing extractive industry and agricultural lands.

Sensitive receptors are scattered to the north of the site, the closest of which is approximately 550 meters from the centre of the quarry (Pit 3). The closest receptors in every direction and their distance from the closest site boundary are summarised in **Table 24**. The location of the subject land in relation to these sensitive receptors is shown in **Figure 43**.

Table 24: Identified sensitive receptors

Receiver ID	X Coordinate	Y Coordinate	Receiver Address	Receiver Type	Approx. distance to boundary, m
R01	496083	6018219	13 Everest Lane	Residential	530
R02	496079	6018353	171 Everest Lane	Residential	540
R03	496322	6018357	48 Bridle Lane	Residential	310
R04	496477	6018548	40 Bridle Lane	Residential	320
R05	496618	6018682	34 Brindle Lane	Residential	360
R06	496712	6018713	23 Mountainpeak Lane	Residential	340
R07	496945	6018710	22 Mountainpeak Lane	Residential	320
R08	497140	6018512	96 Winchester Lane	Residential	150
R09	497693	6018680	26 Lauren Court	Residential	430
R10	497784	6018559	27 Lauren Court	Residential	320
R11	497873	6018429	25 Lauren Court	Residential	210
R12	498069	6018328	394 Gerogery Road	Residential	185
C01	496063	6017856	End of Winchester Lane	Commercial	600

Source: Rockwood Quarry Air Quality Assessment (GHD, June 2018)

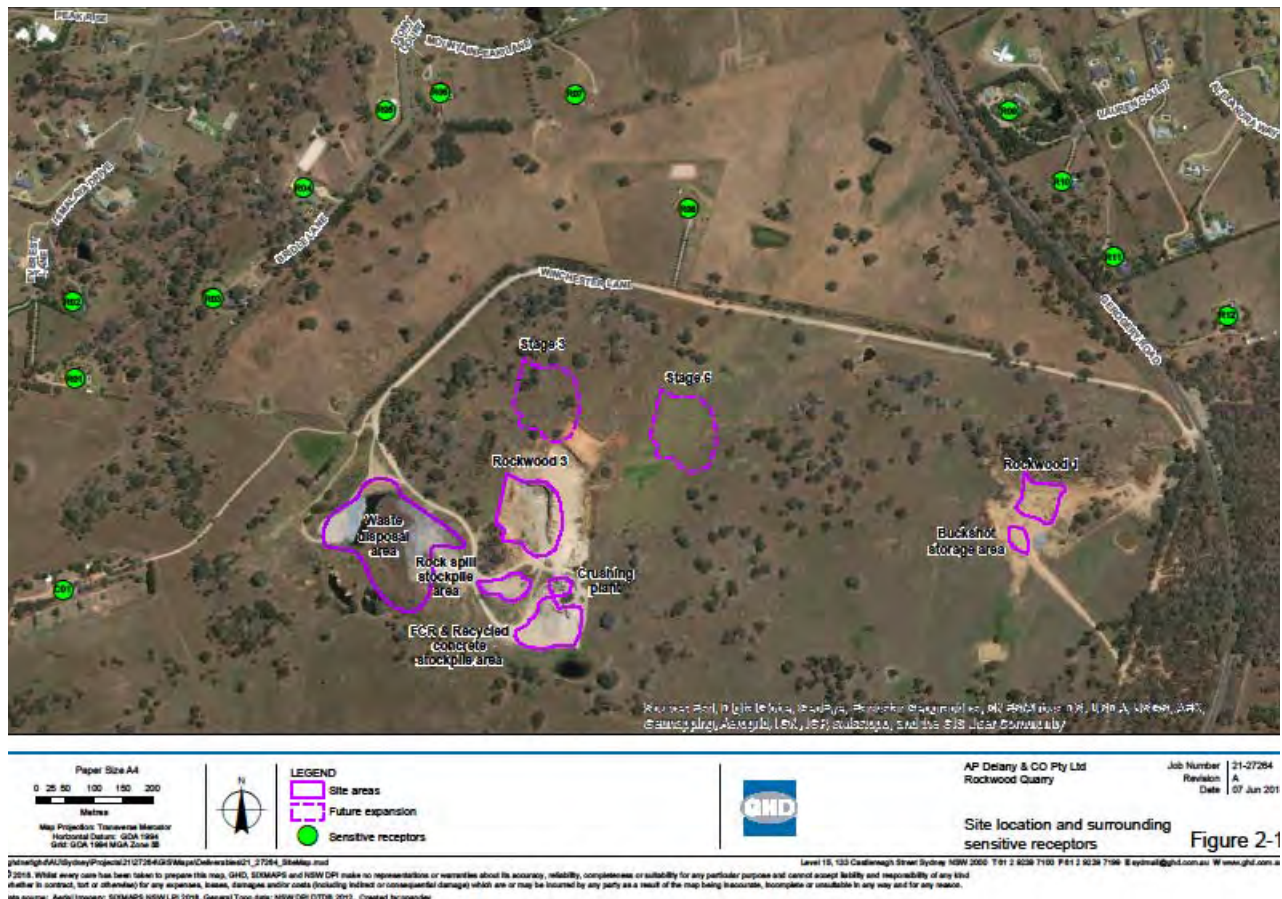


Figure 43: Sensitive Receptors Map (Source: Rockwood Quarry Air Quality Assessment, GHD, June 2018)

7.7.2 Air Quality Impacts

The operation and use of the subject land as a quarry and associated works, including the crushing of concrete and disposal of biosolid waste (covered via a separate approval) has the potential to generate issues of air quality including:

- Emissions generated during blasting and excavation associated with clearing, stockpiling topsoil and fill;
- Airborne dust generated from the processing and crushing of raw materials, particularly if machinery is not well maintained or the works are undertaken during drier periods;
- Excavators loading trucks and vehicle movements to and from the site, particularly where transported loads are uncovered;
- Generation of dust from haulage vehicles travelling along unsealed roads (Winchester Lane) and within the local area, particularly during drier periods;
- Dust generated from disturbed/exposed areas of the site, as well as from uncovered or unwatered stockpiles;
- Exhaust emissions generated from machinery and transport vehicles; and
- Odours associated with the disposal of biosolid waste on-site (already approved via an existing development consent and EPA license).

In addition to those specific issues associated with the site, consideration needs to be given to the cumulative air quality impacts of surrounding land uses and developments including;

- Existing larger scale operating extractive industries (Burgess' quarry);
- Norske Skog Newsprint Mill and Overall Forge;
- Nexus industrial estate;
- Vehicle emissions from both domestic vehicles and heavy vehicles;
- Proximity of the subject land to the main Melbourne-Sydney railway line and the Hume Highway;
- Dust and vehicle emissions from surrounding agricultural issues;
- Wood fire smoke from domestic wood heaters and smoke from back-burning;
- Natural hydrocarbon and particulate emissions from the surrounding vegetation (Sinclair Knight Merz 1999); and
- Climatic conditions can also influence the impact of dust in the vicinity, particularly in dry and windy conditions.

Many of these impacts already exist courtesy of the existing quarry operation and have been managed and controlled over time so as to limit complaint.

7.7.3 Air Quality Assessment

The AQIA was undertaken to assess potential impacts on surrounding sensitive receivers based on the assumption that the quarry will operate at its maximum extraction rate, being 100,000m³ per annum. The key emission sources were concluded to be Rockwood 1 pit, Rockwood 3 pit, screening and crushing plant, access tracks and stockpiles. Particulate emissions (TSP, PM10 and PM2.5) were estimated based on the project description and expected equipment to be used throughout operation.

The assessment also considered the impacts of odour as the site is also approved to receive up to a maximum of 10,000 tonnes of biosolid waste from the adjoining Norske Skog Paper Mill. The biosolid waste has been accepted intermittently from the mill since 1983 and has received no complaints due to the relatively inert nature of the waste, the low levels of waste received on-site and the setbacks of the waste disposal area from surrounding sensitive uses. No other odour sources associated with the increased production of the quarry were identified and odour impacts were considered negligible and not further assessed in the AQIA.

Similarly, whilst other air emissions such as combustion products (e.g. vehicle exhaust) will also be present within the quarry, due to the relatively small number of vehicles associated with the development, the potential for impact from these emissions is negligible. Therefore, vehicle exhaust emissions were also not considered any further in the assessment.

In order to consider the impacts of air quality, an Air Quality Dispersion Model was prepared, as well as a meteorological model. Local meteorological data was utilised to inform these models from the Albury Airport located approximately 9 kilometres south east of the subject land.

A number of different scenarios were established and a model was prepared based on a 'worst-case' scenario, which included the relocation of the Pit 3 extraction site in a north easterly direction (classified as 'Stage 6').

Particulate emissions rates were conservatively calculated using worst case (100,000 m³ per year) extraction rates and provided haul truck movement counts. It is not expected that the quarry would typically reach this extraction rate, however this assessment conservatively accounts for that unlikely scenario.

The following modelling assumptions were made:

- Operations are conducted between 7am and 6pm each working day.
- Operational plant and equipment only produce emissions while they are in use (during working hours). Stockpiles continually produce emissions (24 hours a day, 7 days a week)
- Peak operations (150 days per year) consist of work on Monday to Saturday each week. The model assumes operations from Monday to Saturday inclusive for every week of the year. This equates to more than 150 operational days, however it results in a more robust assessment that predicts the worst case impact for any potential operational period
- Haul trucks are approximately 3 m wide by 3 m high; and
- Stockpiles were modelled at a height of 15 m.

Based on the assumptions and scenarios outlined in the AQIA and assessment, predicted TSP, PM₁₀ and PM_{2.5} emissions are expected to comply with the relevant criteria when assessed in accordance with the Approved Methods. Predicted cumulative particulate concentrations are composed of relatively high background particulate concentrations and low incremental concentrations suggesting the proposed quarry expansion will have minimal impact of the surrounding air quality.

7.7.4 Greenhouse Gas Emissions

Matters regarding greenhouses gases have also been considered with regards to the subject proposal. Greenhouse gases include water vapour, carbon dioxide, methane, nitrous oxide, ozone, and the chlorofluorocarbons (CFC's). The emission of those 'natural' gases from the site will not change as a result of the development as the development will continue to operate as it has done so for the past 45 years. The activities proposed to be undertaken on the site will not emit any of the 'unnatural' greenhouse gases.

Consequently, the extent of greenhouse gas emissions from the proposed activity will not change from current operations and will be minimised following the implementation of ongoing mitigation measures and the long-term rehabilitation of the site.

7.7.5 Mitigation and Monitoring Measures

Air quality and dust control measures available for quarrying operations are generally a combination of engineering controls, operational controls and planning controls.

The current dust control measures implemented on-site will continue to be maintained as part of the Project in accordance with a number of previous development consents issued for the subject land (see **Attachment C**).

These controls include:

- Regular watering of unsealed haulage roads, working areas and stockpiles, particularly on dry, hot windy days;
- Water sprays on conveyors, stockpiles and areas of disturbance or loose soil;
- Progressive stabilisation/rehabilitation of exposed areas no longer needed for operational purposes;
- Covering of all laden trucks leaving the site when transporting materials, particularly on public roads; and
- Regular machinery maintenance to ensure that machinery is working efficiently.

In addition to the above existing controls, AP Delaney & Co will continue to implement the following controls as part of the Project:

- Maintain and manage existing landscape screen plantings along the existing accessway and boundaries of the site;
- Maintain and locate existing quarrying activities below ridgelines, which will screen adjoining residential dwellings to the north;
- Application of fine water sprays and implementation of adequate dust control mechanisms on mobile crushing and screening plant;
- Imposition of speed limits on all internal roads;
- Minimisation of the total disturbed/working area at any one time;
- Designing of blasts to minimise dust (underground blasting);
- Consideration of current weather conditions prior to blasting. This includes visual observations of wind speed and wind direction to determine whether any dust emissions from the blast will be carried in the direction of nearest sensitive receptors;
- Awareness training regarding air quality management for employees and contractors, where relevant;
- Generally undertake crushing works after watering down of raw materials to be processed;
- Ongoing management and monitoring of deposition dust in the area surrounding the quarry;
- Continued rehabilitation and backfilling of waste disposal areas with clean virgin fill.

Matters regarding exhaust emissions and diesel fumes from excavation equipment and transport vehicles will be minimal as the quarry is located in an open rural environment so any fumes are likely to be easily dispersed without impact on the surrounding area. Nonetheless, ongoing routine and regular maintenance of machinery and equipment will be undertaken to ensure that machinery is working at optimal efficiency.

More specifically, the AQIA recommended that to reduce dust generation from haul vehicles on Winchester lane, level 1 watering (2 L/m²/hr sprayed on unsealed road) should be undertaken. In addition, extracted material should be sprayed with water before being crushed to ensure the material retains a high moisture content and water sprays should be maintained at the screening plant to reduce dust dispersion.

It is noted however that the assessment concluded that specific dust mitigation for crushing and screening is only needed when dust from operations are visibly observed to be dispersing towards nearby sensitive receptors.

In addition to the specific site mitigation measures outlined above, the following general dust mitigation measures are recommended for the quarry to reduce dust generation as much as reasonably possible:

- Water material prior to it being loaded for on-site haulage, where appropriate;
- Aim to minimise the size of storage stockpiles where possible;
- Limit cleared areas of land and clear only when necessary to reduce fugitive dust emissions;
- Control on-site traffic by designating specific routes for haulage and access and limiting vehicle speeds to below 40 km/hr;
- All trucks hauling material should be covered on the way to the site and should maintain a reasonable amount of vertical space between the top of the load and top of the trailer; and
- Operations conducted in areas of low moisture content material should be suspended during high wind speed events or water sprays should be used.

7.8 Waste Management and Disposal

Consideration of the generation, storage and disposal of wastes has been assessed as part of the subject proposal in accordance with the requirements of the SEARs. Such considerations include; an estimate of the quantity and nature of the waste streams that would be generated or received by the development and any measures that would be implemented to minimise, manage or dispose of these waste streams.

As outlined previously within this report, it is noted that the subject land currently has approval for the disposal of up to 10,000 tonnes of biosolid waste on-site from the nearby Norske Skog Paper Mill, which is currently covered by a separate development consent and EPA licence.

Therefore, further consideration of the environmental impacts of the disposal of biosolid waste is not required in this instance and the site has continued to operate in accordance with previous approvals and EPA licenses without environmental harm or incident since initial disposal in 1983.

7.8.1 Existing Waste Management Operations

The subject land primarily operates for the purposes of an extractive industry as a hard rock quarry. Wastes associated with the use of this land as a quarry are limited due to the small number of staff (3) present on site at any period of time and the nature of the production process, which produces limited residual wastes such as tailings or overburden.

More specifically, the existing quarry generates limited wastes on-site as all excavated material is extracted, crushed and processed to suit its proposed application. The crushing plant contains a number of conveyor belts that continually crush and screen the excavated granite material to ensure that there are limited wastes. No other production or processing of this excavated material occurs, which limits the amount of waste generated on-site.

Rotating magnets are fitted to the conveyor belts, which separate out any residue or scrap metal contained within the crushed material (particularly reinforcing from recycled crushed concrete). These materials are stockpiled adjacent to the crushing plant and loaded into containers where they are transferred to a metal recycler once they are full.

In addition, a small amount (approximately 20-30m³) of inert pieces of hard and soft plastics, as well as timber is removed from crushed concrete products and are collected and recycled off-site.

Similarly, top soil and overburden is ripped and stockpiled on-site adjacent to the proposed work area where it is later used as part of the rehabilitation process. This material is clean virgin material that can be used for land application and rehabilitation purposes.

Effluent waste is also collected and disposed of on-site via an existing approved septic tank and seepage line located approximately 40 metres south of the existing staff amenities building, which was approved by the former Hume Shire Council. The size and location of this septic system has been designed to accommodate the existing development and ensures that effluent does not contaminate the land or any nearby watercourses.

Accordingly, matters regarding waste generation, storage and collection associated with the use of the site as a quarry are already appropriately managed and controlled with wastes to be appropriately stored, recycled, reused or disposed of to the Albury Regional Waste Management Centre.

As outlined throughout this report, the development also currently has approval to dispose of up to 10,000 tonnes of biosolid wastes from the nearby Norske Skog Paper Mill where wet weather precludes it being disposed of to farmlands as part of a resource recovery exemption. This waste is currently disposed of on-site in a retired quarry pit located to the south west of Pit 3 and is used as part of site rehabilitation and land application works.

A hydrogeological study was previously prepared with regards to the disposal of this waste and the following environmental protection measures have been established and maintained:

- Construction of cut off drains and diversion banks to redirect 'clean' stormwater runoff around waste disposal areas;
- Construction of clay-lined leachate dams to collect and hold leachate run-off, where it is later used to irrigate open paddock lands located to the north west of the waste disposal area; and
- Installation of monitoring bores and piezometers (shallow and deep) to monitor changes in water table levels and chemical composition of the soil;

The receipt and disposal of this waste on-site is currently undertaken in accordance with the conditions of a separate development consent and an EPA Licence, which includes amongst other things, annual monitoring and independent environmental audits. It is noted that since initial disposal of biosolid waste on-site in 1983, there have been no recorded incidents of environmental harm resulting from the disposal of waste on-site.

7.8.2 Impacts of the Proposal

Wastes that will require management in association with the quarrying activities include:

- Construction waste;
- Workshop wastes, including waste oil, grease cartridges, oily rags and scrap metal;
- Silt (from aggregate washing);
- General rubbish;
- Tyres; and
- Effluent.

As outlined above, the subject quarry already exists and has been operating for the past 45 years without incident or harm. It is expected that any wastes generated as a result of the proposed quarry extension and expansion will be comparable to current rates and can continue to be appropriately managed on-site. It is reiterated that the proposed quarry expansion does not propose to increase the number of staff or daily output of the quarry, but rather seeks to operate on a larger number of days (up to 150).

Accordingly, matters regarding waste management and disposal can be appropriately managed ongoing and are not expected to increase significantly beyond current rates.

7.8.3 Mitigation and Monitoring Measures

In response to the likely impacts of the continued operation of the quarry, a number of mitigation and monitoring measures are recommended as part of the Project including:

- Ensure that all work areas are maintained in a neat and tidy manner and prevent the accumulation of waste on-site including; recycling most materials and disposal of waste as appropriate to the Albury Regional Waste Management Centre;
- All waste oil will be collected and stored in containers within a covered and bunded area and will be removed from the site by an appropriately licensed contractor including any EPA requirements with respect to the tracking of waste;
- All refueling on-site will be undertaken via off-site storage vehicles in bunded areas;
- All oil filters will be separately stored and returned to the manufacturer for re-use;
- Silt will be periodically removed from the various silt control structures and placed/stored in the product stockpiles or overburden materials for use in progressive rehabilitation;
- Waste water from amenities buildings will be treated and disposed of via an on-site septic disposal system;
- All waste tyres will be removed by the supplier of replacement tyres;
- Disposal of biosolid wastes on-site shall continue to occur in accordance with previously issued development consents and EPA licenses, including the requirement for any monitoring and environmental audits; and
- Rehabilitated areas to be top dressed, re-vegetated and screened off from access by stock.

7.9 Transport & Access

An assessment of the potential impacts on the capacity, condition, efficiency and safety of the local road network has been investigated by Peter Meredith Consulting as part of the preparation of a Traffic Impact Assessment (TIA) completed for the site.

A copy of the TIA is included as **Attachment F** and a summary of the key findings is provided below.

7.9.1 Existing Conditions

Gerogery Road forms the western boundary of the site. It runs north from Wagga Road to the township of Gerogery. It provides access for local traffic from farms, large lot rural residential development and the Nexus industrial complex. Gerogery Road is classified as a local road and is under the management of Albury City Council. Gerogery Road is also an RMS heavy vehicle incident management bypass route for the Hume Highway. This road currently has a posted speed limit of 100km/h.

Adjacent to the intersection of Gerogery Road consists of the following characteristics:

- An undivided two-way road with a sealed carriageway width of 8.6m;
- Two traffic lanes of 3.5m and gravel shoulder at 2.1m on the east side and 2.6m on the west side shoulder;
- Formed table drains and grass verges;
- Line marked centre and edge lines with guide post delineation; and
- 'Truck' entering symbolic warning signage on both approaches to intersection of Gerogery Road and Winchester Lane.

Winchester Lane forms the northern boundary of Pit 3. Winchester Lane connects to Gerogery Road as a T-junction intersection and allows two-way access from Gerogery Road. This road is classified as a property access road and provides access to the Rockwood Quarry, the Albury Wodonga Clay Target Gun Club and the residence at 96 Winchester Lane and is under the management of the property owners who have access. This road has a speed limit of 60km/h.

Winchester Lane consists of the following characteristics:

- An undivided two-way 6m wide gravel access road;
- Table drains; and
- Give-way signs at the entrance to the quarry site.

During June 2018 Albury City Council conducted classifier traffic counts on Gerogery Road between Hub Road/Winchester Lane and Tynan Road/Winchester Lane. The results of the traffic counts are shown in **Attachment F**. A summary of the June 2018 ADT, AM and PM weekday peak hour traffic volumes (vph) for Gerogery Road are shown below in the **Table 25**.

Traffic volumes on Winchester Lane were also conducted and are primarily generated from AP Delaney & Co and the Albury Wodonga Clay Target Club (see **Table 26**). It is noted that the majority of traffic accessing Winchester Lane enters north bound turning left into Winchester Lane from Gerogery Road and exits south bound by turning right from Winchester Lane into Gerogery Road given the destination of source materials (see **Figure 44**).

Table 25: Average Daily Traffic, AM and PM Peak hour traffic volumes for Gerogery Road, June 2018

June 2018 Location/Direction	ADT weekday	AM	PM	85 th % speed Km/h
Gerogery Road between Hub Road and Winchester Lane (Classifier set up approximately 200m south of Winchester Lane)				
Gerogery Road north bound Lane (Uphill travel lane)	660	33 (11 to 12am)	85 (4 to 5pm)	91.1 (uphill)
Gerogery Road south bound Lane (Downhill travel lane)	575	82 (8 to 9am)	46 (2 to 3pm)	108.7 (downhill)
Gerogery Road between Tynan Road and Winchester Lane (Classifier set up approximately 180m north of Winchester Lane)				
Gerogery Road north bound Lane (Downhill travel lane)	643	35 (11 to 12am)	88 (4 to 5pm)	99.3 (downhill)
Gerogery Road south bound Lane (Uphill travel lane)	654	94 (8 to 9am)	47 (2 to 3pm)	99.5 (uphill)

Source: Traffic Impact Assessment, Rockwood Quarry Winchester Lane, Peter Meredith Consulting, 2018

Table 26: Estimated Existing Daily Traffic and direction, AM and PM Peak hour traffic volumes for Winchester Lane

Location / Direction	ADT 5-day week	AM peak 8.00-9.00	PM peak 5.00-6.00
Winchester Lane North bound left-turn-in	56 Worst case scenario	2 trucks + 1 car = 3vph	4vph (cars)
Winchester Lane South bound right-turn-in		0 vph	1 vph (car)
Winchester Lane South bound right-turn-out		2 vph (trucks)	4 vph (cars)
Winchester Lane North bound left-turn-out		0 vph	1vph (car)

Source: Traffic Impact Assessment, Rockwood Quarry Winchester Lane, Peter Meredith Consulting, 2018

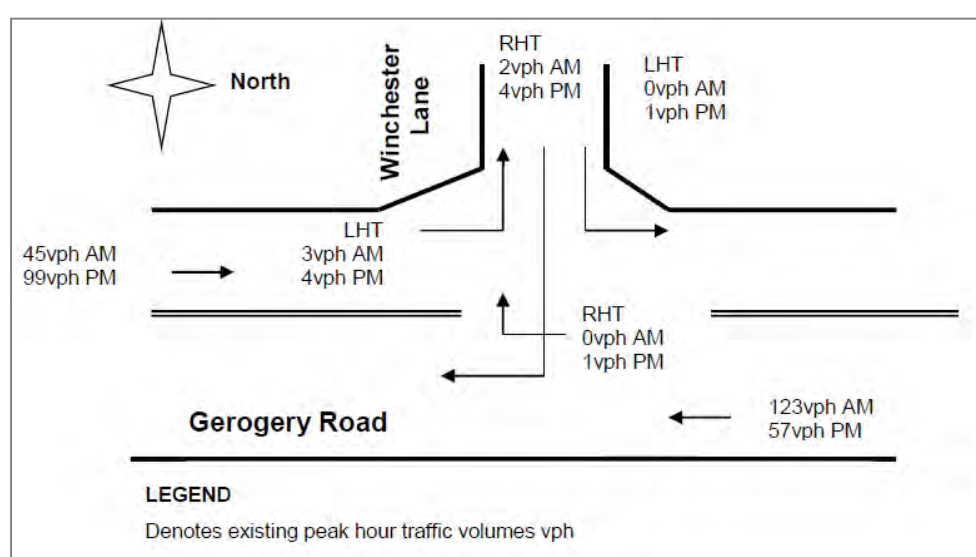


Figure 44: Existing and estimated AM and PM peak traffic flows at the intersection of Gerogery Road and Winchester Lane

(Source: Traffic Impact Assessment, Rockwood Quarry Winchester Lane, Peter Meredith Consulting, 2018)

The intersection was modelled to determine the Level of Service (LOS) using the intersection analysis program *SIDRA Intersection 7.0*. Upon investigation, it was confirmed that Gerogery Road and Winchester Lane operate well within capacity in both the AM and PM peak periods with a LOS 'A' (see **Table 27**) for all movements. Minimal delays are experienced, with the worst being on the south bound right-turn into Winchester Lane (average 5.6 seconds AM and 5.7 seconds PM).

Table 27: Level of Service (LoS) for capacity and operational analysis for all types of road facilities

Level of service A	A condition of free-flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent.
Level of service B	In the zone of stable flow where drivers still have reasonable freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is a little less than with level of service A.
Level of service C	Also in the zone of stable flow, but most drivers are restricted to some extent in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience declines noticeably at this level.
Level of service D	Close to the limit of stable flow and approaching unstable flow. All drivers are severely restricted in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is poor, and small increases in traffic flow will generally cause operational problems.
Level of service E	Traffic volumes are at or close to capacity, and there is virtually no freedom to select desired speeds or to manoeuvre within the traffic stream. Flow is unstable and minor disturbances within the traffic stream will cause breakdown.
Level of service F	In the zone of forced flow, where the amount of traffic approaching the point under consideration exceeds that which can pass it. Flow breakdown occurs, and queuing and delays result.

Source: Traffic Impact Assessment, Rockwood Quarry Winchester Lane, Peter Meredith Consulting, 2018

In addition, it is also worth noting that the subject land has operated as an extractive industry for over 45 years without any traffic incidents/crashes or injury resulting from traffic movements from the quarry site. The Albury City Council Road Safety Officer advises that the RMS crash data base also confirms that there have been no crashes at or near the intersection of Gerogery Road and Winchester Lane in the past five years.

7.9.2 Impacts of the Proposal

The proposed development seeks approval to operate an extractive industry from the subject land, which is currently being used for this purpose. Existing access to the quarry will remain from Winchester Lane via Gerogery Road, but the development seeks approval to increase the maximum annual production from 75,000m³ to 100,000m³ per annum.

Accordingly, some of the likely impacts associated with using the land as an extractive industry could create the following transport and access impacts:

- Increase in road traffic volumes from vehicles entering the site to dispose of biosolid waste, recycled concrete and clean virgin fill (for rehabilitation works) and exiting the site for the transportation of processed material off-site to local construction jobs;

- Traffic safety concerns and road damage associated with heavy vehicles utilising the local road network;
- Traffic safety concerns for local road users utilising Gerogery Road from vehicles exiting the subject land turning right due to the existing configuration and condition of this intersection (i.e. poor visibility, sight distances etc);
- Generation of dust from the use of unsealed roads by heavy vehicles and the impacts that this could create on adjoining land uses and sensitive receptors; and
- Noise associated with loading activities, vehicle movements and truck braking.

In order to determine future traffic conditions, a standard 2% per annum traffic growth rate has been applied to the existing volumes on Gerogery Road to allow for the increase in background traffic volumes arising from general increases across the network. There is no expected percentage increase in background traffic volumes arising from general increases across the network on Winchester Lane from the Albury Wodonga Clay Target Club.

The subject proposal is seeking to raise the possible maximum production of the existing Rockwood Quarry to 100,000m³. Historically maximum production allowable at the quarry has fallen well below this figure (see **Table 9**), but for the purpose of traffic calculations it has been assumed that full production of 100,000m³ could occur, but this will be subject to demand.

By applying the above rates to a production of 100,000m³ of quarry rock per annum the quarry activity could potentially generate:

- $100,000\text{m}^3 \times 2.2 = 220,000$ tonnes p.a.
- Daily truck trips = $220,000 / 33 \text{ truck loads} / 312 \text{ days} = \mathbf{21.4 \text{ loads per day (increase of 5.4vph)}}$
- Weekday average peak hour vehicle trips = $21.4 / 8 \text{ hours} = \mathbf{2.7 \text{ rounded up to 3vph (increase of 1vph)}}$

Traffic generated by the quarry development will be distributed throughout the network depending on origin/destination and route choices. This can be estimated by assessing likely origins and destinations based on existing traffic flows. It is assumed the majority of all quarry traffic accessing the quarry site will enter north bound turning left into Winchester Lane from Gerogery Road and exit south bound by turning right from Winchester Lane into Gerogery Road. Traffic generated by the quarry has south bound origin/destination generators and it is rare that vehicles need to head north bound.

These assumptions have been used to determine the additional traffic likely to be generated at the key intersection of Gerogery Road and Winchester Lane. It has also been assumed that once staged rehabilitation works begin, that vehicles will enter the site with clean virgin fill and will leave the site with processed materials, rather than separate designated trips for each activity. This is based on the fact that the produced materials are only used as part of the landowner's road construction business and that the landowner will be able to secure clean fill as part of road construction projects that they will in turn dispose of on-site.

A summary of the additional turning movements for the intersection of Gerogery Road and Winchester Lane are shown in **Figure 45**.

The impacts of the proposed development on through-traffic on Gerogery Road are primarily related to the low speed turning manouvres at the T-junction intersection of Gerogery Road and Winchester Lane.

More specifically, these impacts are quantified below and appropriate mitigating works are recommended, if required.

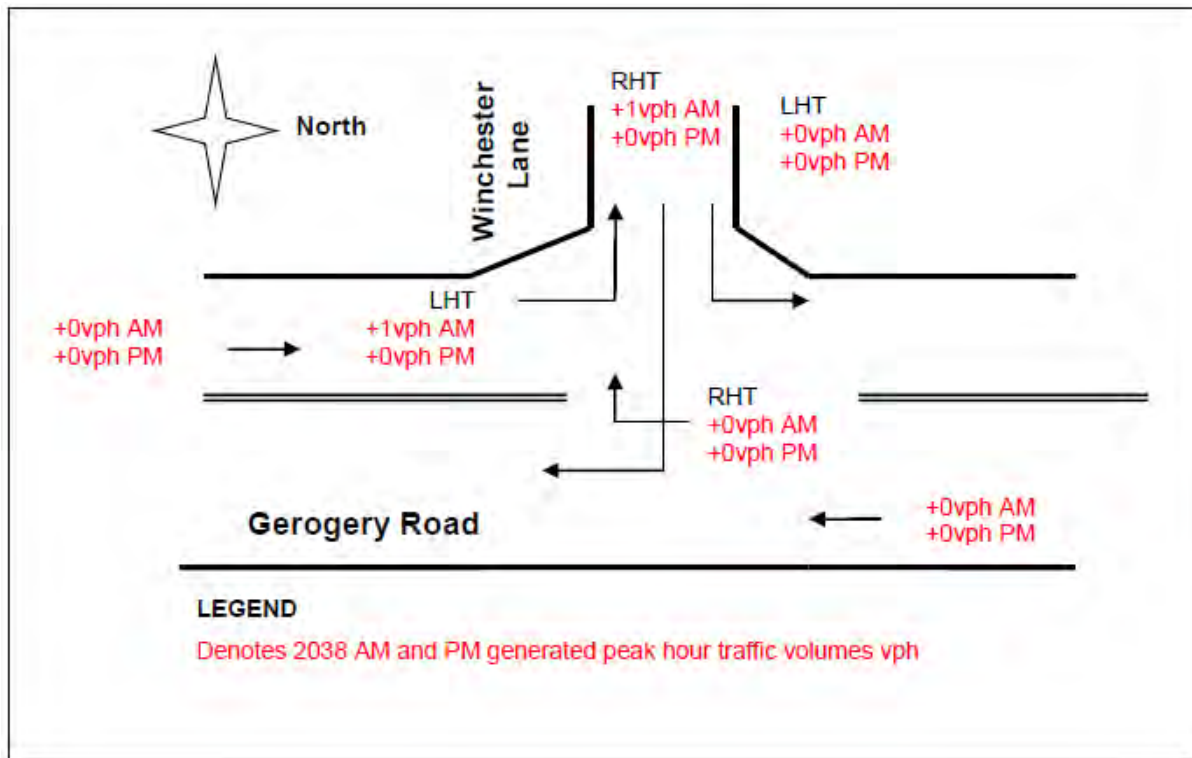


Figure 45: Future AM and PM peak traffic flows at the intersection of Gerogery Road and Winchester Lane (Source: Traffic Impact Assessment, Rockwood Quarry Winchester Lane, Peter Meredith Consulting, 2017)

Intersection Performance of Gerogery Road and Winchester Lane

A SIDRA analysis of the operation of the existing T-Junction intersection of Gerogery Road and Winchester Lane was undertaken for the forecast and generated future quarry traffic flows for both AM and PM. The key outcome of this analysis confirms that Gerogery Road and Winchester Lane intersection continues to operate well within capacity at a Level of Service of A in both the AM and PM peak periods. Minimal delays are experienced; with the worst being still Gerogery Road south bound right-turn into Winchester Lane (average 5.6 seconds AM and 5.9 seconds PM).

Sight Distances and Design Speed

The existing speed limit for Gerogery Road at the intersection of Winchester Lane is 100km/h.

The operational speed or 85th percentile speed for Gerogery Road on both the north and south bound approaches to the intersection of Gerogery Road and Winchester Lane has been determined using traffic classifiers. Results indicate that the 85th percentile speed for Gregory Road for both the uphill north and south bound approaches to the intersection of Gerogery Road and Winchester Lane are **91.1 km/h** and **99.5 km/h** respectively.

The above 85th percentile speed results indicate it would be appropriate to adopt a 100km/h design speed for calculations of sight distance for the Safe Intersection Sight Distance and the Minimum Gap Sight Distance requirements for the existing intersection of Gerogery Road and Winchester Lane.

Safe Intersection Sight Distance

The Safe Intersection Sight Distance (SISD) as set out in the *Austroads Guide to Road Design Part 4A: Section 3 Sight Distance, Table 3.2* for a design speed of 100km/h is 262m for a reaction time of 2.5 seconds (trucks) and is reduced to 251 metres with an 11 metre reduction for an average 4% uphill grade in accordance with Table 3.4: Grade corrections to ASD and SISD (cars).

Gerogery Road North Bound Approach SISD

An inter-visible SISD of **251m** for Gerogery Road on the north bound approach to the intersection of Gerogery Road and Winchester Lane was measured in accordance with *AGRDR Part 4A: Section 3 Sight Distance, Figure 3.2 with a 5m offset*.

The results indicate that the measured SISD of 251m for the north bound approach is considered to be within acceptable practical limits and meets the AGRDR Part 4A requirements of SISD for a design speed of 100km/h. In addition, the sight lines at the intersection of north bound traffic have not been maintained and sucker trees (15 less than 100mm diameter) and small trees (8 up to 200mm diameter) and low branches (3 lots) that have been allowed to grow uncontrolled on the road verge are restricting SISD sight lines. The smaller sucker trees and branches are a pre-existing condition and their removal by Albury City Council, the responsible road authority would provide clear sight lines (see **Figure 46**).

It is also noted that observations and measurements indicate that a SISD of 287m for a design speed of 110km/h would be very difficult to achieve because of the topography and a large number of trees on the western road verge (environmental zone) blocks sight lines. Extensive earthworks to remove a small knoll and tree removal on the road verge would be required to achieve SISD of 287m for a 110km/h design speed.



Figure 46: Gerogery Road north bound at 287m from Winchester Lane
(Source: Traffic Impact Assessment, Rockwood Quarry Winchester Lane, Peter Meredith Consulting, 2018)

Gerogery Road North Bound Approach SISD

An inter-visible SISD of **180m** for Gerogery Road on the south bound approach to the intersection of Gerogery Road and Winchester Lane was measured in accordance with AGRD Part 4A: Section 3 Sight Distance, Figure 3.2 with a 5m offset.

The results indicate that the measured 180m SISD for a design speeds of 100km/h on the south bound approach does not meet AGRD Part 4A requirements.

However, preliminary designs prepared by AP Delaney indicate that the existing cutting embankment on the western side of Gerogery Road can be excavated to achieve an inter-visible SISD of over 250m for Gerogery Road on the south bound approach to the intersection of Gerogery Road and Winchester Lane. Refer to **Figure 28** for details of the preliminary designs of sight improvements.

The intersection of Gerogery Road and Winchester Lane has a historical deficiency in the SISD on the south bound approach. There is evidence of old survey/construction set out pegs along the existing cutting embankment that would indicate that improvements to the SISD were investigated by previous road authorities (RMS, Hume Shire Council or Greater Hume Council). Both Gerogery Road and Winchester Lane are classified as local roads and the intersection connection to Winchester Lane is currently used by AP Delaney and Albury Wodonga Clay Target Club.

Minimum Gap Sight Distance

Minimum Gap Sight Distance (MGSD) is based on distances corresponding to the critical acceptance gap that drivers are prepared to accept when undertaking a crossing or turning manoeuvres at intersections. The MGSD as set out in the AGRD Part 4A: Section 3 Sight Distance,

Table 3.6 for 85th Percentile speeds of 100km/h has been calculated as **139m** for a critical gap acceptance time t_a of 5 seconds for all movements of two lane /two-way traffic with the approaching vehicle required to slow if necessary.

Gerogery Road North Bound Approach MGSD

A MGSD of **160m** for Gerogery Road on the north bound approach to the intersection of Gerogery Road and Winchester Lane was measured in accordance with the possible conflict movements. The results indicate that the measured MGSD of 160m for the north bound approach is considered to be acceptable and meets the AGRD Part 4A requirements of MGSD for a speed of 100km/h.

Gerogery Road South Bound Approach MGSD

A MGSD of **170m** for Gerogery Road on the south bound approach to the intersection of Gerogery Road and Winchester Lane was measured in accordance with the possible conflict movements. The results indicate that the measured MGSD of 170m for the south bound approach is considered to be acceptable and meets the AGRD Part 4A requirements of MGSD for a speed of 100km/h.

Speed Limits

The speed limit on Gerogery Road between the Gerogery Road/Hub Road roundabout and Wagga Road was recently reduced from 100km/h to 80km/h. The speed limit was reduced to improve traffic safety along this section of Gerogery Road and to reduce the approach speed at the new roundabout.

Similar traffic safety benefits could also be achieved by reducing the speed limit to 80km/h on the section of Gerogery Road between the Hub Road roundabout and Himalaya Drive. The traffic safety issues identified for this section of Gerogery Road are listed below:

- School bus zone with shelter on Gerogery Road adjacent to the Himalaya Drive T-junction. Morning and afternoon pick-up and drop-off. Parent parking and children close to edge of road;
- School bus zone with shelter on the south east side of Gerogery Road at Tynan Road T-junction. Morning and afternoon pick-up and drop-off. Parent parking and children close to edge of road;
- Property entrance on eastern side of Gerogery Road close to top of crest of Nine Mile Hill has restricted sight distance of north bound traffic;
- The intersection of Gerogery Road and Winchester Lane has restricted sight distance of south bound traffic. The reduction in speed limit to 80km/h would allow the required SISD 181m to be achieved. This would also eliminate the need to remove the cutting embankment to achieve a SISD for 100km/h;
- Recreational and service access to reserve on east side of Gerogery Road has restricted sight distance for both north and south bound traffic;
- Property access on west side of Gerogery Road near southern end of Nine Mile Hill has restricted sight distance; and
- Straight section of Gerogery Road with a high speed downhill approach to Gerogery Road/Hub Road roundabout. A reduction in speed limit would improve motorist's ability to identify the roundabout hazard.

Winchester Lane Bitumen Apron

The existing bitumen apron in Winchester Lane connecting to Gerogery Road is severely pot holed and damaged with loose gravel covering most of the apron. Vehicles (particularly cars) entering onto Gerogery Road are losing traction in the loose gravel and losing critical manoeuvring time when turning onto Gerogery Road. The loose gravel should be swept off the bitumen and the pot holes filled to improve the safety of the intersection.

7.9.3 Mitigation and Monitoring Measures

In response to the likely impacts of the proposal, a number of mitigation and monitoring measures are recommended as part of the Project including:

- Maintain the entrance to the property from Gerogery Road to ensure traffic safety and function is not compromised;
- Remove several small trees and branches on the Gerogery Road road verge to improve existing sight line issues looking south (by the relevant road authority);
- Investigate future options to improve existing sight lines for northbound traffic, including undertaken road embankment works (by the developer in consultation with council);
- Avoid movement of heavy vehicles on wet unsealed roads;
- Heavy vehicles shall be driven at moderate to low speeds in accordance with existing self-imposed speed restrictions;
- Maintain existing warning signals and communication methods for both heavy vehicles and domestic vehicles utilising Winchester Lane;
- Avoid the trafficking of mud and other spoil by heavy vehicles onto sealed roads;
- Liaise with Council and/or the RMS in regards to traffic management; and
- Reinstate any road surfaces damage by the movement of heavy vehicles and/or machinery associated with the proposed works.

7.10 Social & Economic Impact

No formal social or economic impact analysis has been undertaken as the site is already operating for the purposes of an extractive industry and associated works including; the crushing of recycled concrete and disposal of biosolid wastes.

Nonetheless, consideration of the proposed extension and expansion of this quarry facility needs to be undertaken with regards to the social and economic impacts of the proposal.

7.10.1 Existing Conditions

The current quarry has operated for more than 45 years with little to no complaint or incident from surrounding or adjoining neighbours due to the current operations conducted on-site and the management and mitigation measures implemented by the current site operator. This is evidenced by the fact that only two (2) enquiries were received from adjoining owners as part of the initial neighbour notification phase of the development and none during the initial neighbour notification period.

The social impacts of the development have been appropriately managed as excavation/extraction works are located approximately 500 metres away from the nearest residents in Himalaya estate. Furthermore, work areas are limited to below the ridgeline and are screened from surrounding nearby sensitive receptors (residential dwellings) thereby limiting the visual appearance of the development and minimising issues of noise.

The current quarry also crushes and processes recycled concrete as part of general site operations within the central portions of the site, which has continued to operate without incident or complaint. Similarly, the subject land accepts up to 10,000 tonnes of biosolid waste, where wet weather precludes its disposal to nearby farmlands, which is subject to an existing valid development consent and EPA license.

These works occur to the south west of Pit 3 in a retired portion of the quarry and are used as part of the overall site rehabilitation process. Due to the nature and chemical composition of the waste, the waste is relatively inert in nature and does not create any issues of odour. The waste also appears for all intents and purposes to be recycled mulch material and matted soil with the exception of a slightly blue colouring as a result of the de-inking process.

Notwithstanding the above, in response to a number of previous concerns raised by both adjoining residents and council, the landowner undertook significant landscape planting works along the existing accessway, as well as around the perimeter of the site. The purpose of this landscaping was to soften the appearance of the development and reduce impacts of noise and dust from the use of heavy vehicles using haulage routes. This landscaping was installed approximately 10 years ago and has now become well established.

The existing quarry provides a number of positive economic impacts as it satisfies the strong ongoing demand for quarry resources as part of local road construction and earthmoving operations conducted by the current owner and operator of the land. It support economic growth and development and the current materials extracted on-site provide valuable resources to the local construction industry, which avoids the need to have to source resources from outside of the local area, which will lead to higher construction costs.

Furthermore, the development supports the recycling of residual concrete wastes, as well as the recycling of scrap metal and other materials that would otherwise be disposed of to landfill.

7.10.2 Impacts of the Proposal

The social and economic impacts of the proposal are considered appropriate in this instance and are not expected to change significantly from current day operations as all existing operations and processes will largely remain unchanged.

It is noted however, that the current proposal does seek to increase the annual rate of extraction from 75,000m³ to 100,000m³ and expand the current footprint of Pit 3. The social and economic impacts of this are considered appropriate however and will not create any adverse off-site impacts as the works will continue to be screened from view and will operate within relevant environmental (air quality, noise, traffic) thresholds. This will ensure that adjoining neighbours are protected on-going and will not be adversely affected as a result of the development.

As outlined above, even at maximum capacity, the quarry will only operate approximately 133 days per year or 11 days per month and will therefore not operate full time, but rather on an as needs basis to cater for the demands of the existing site operator. This will ensure that any impacts on neighbours associated with the development will be limited.

Furthermore, matters regarding public health and safety have also been considered and are appropriate in this instance. More specifically, access to the site is restricted via fencing and access gates. In addition, infrared security cameras have been positioned and installed at site entrance points and general public access is prevented.

Accordingly, the proposed development will continue to support the local construction industry and will continue to provide local employment generated during the duration of the quarry operations.

7.10.3 Mitigation and Monitoring Measures

Although the subject land has generally continued to operate without incident or complaint for over 45 years, it is still considered necessary that a number of mitigation and monitoring measures be implemented as part of the Project including:

- Maintain and improve, where necessary, existing site access points with Gerogery Road from a traffic safety and efficiency perspective;
- Implement dust suppression measures as outlined under the air quality section of this report;
- Implement noise reduction measures as outlined under the noise, blasting and vibrations section of this report;
- Implement and maintain existing environment protection measures for the disposal of waste;
- Maintain existing landscape screenings to haulage roads and property boundaries;
- Hours of operation to be limited to 7am to 6pm Monday to Saturday with no activities to occur on Sundays or public holidays outside of the intermittent disposal of biosolids;
- Areas of extraction shall continue to be located below the ridgeline and screened from adjoining residential neighbours;
- Undertake staged and ongoing site rehabilitation works ('retreat method') once an area has been exhausted in accordance with a rehabilitation management plan; and
- Upon exhaustion of all extractive materials, rehabilitate the entire site back to pre-development conditions (i.e. rural paddocks and grasslands).

7.11 Visual Amenity

A visual inspection and assessment has been undertaken to assess the visual amenity of the existing and proposed quarry on surrounding lands. The assessment consisted of a review of existing information about the site and topographical mapping to identify potential viewing locations from which the quarry extension area would potentially be visible from.

Following which a field visit to these locations was undertaken to determine the likelihood of any visual amenity impacts from the extension and continued operation of the quarry.

7.11.1 Existing Visual Amenity

As outlined above, the subject land has already been developed for the purposes of an extractive industry and therefore the visual impacts of the proposal already exist.

It is noted that since the quarry was originally established, a large number of rural lifestyle dwellings have been constructed to the north and north west of the subject land in both the Himalaya and Claremont Estates. Similarly, land to the south is currently being developed for large scale industrial purposes.

Accordingly, the number of 'receivers' has increased significantly from the time of the original approval.

Notwithstanding, due to the terrain and topography of the subject land and the location of current and proposed quarrying activities on-site, the area of extraction is shielded from adjoining sensitive receptors by the existing ridgeline of Nine Mile Hill and the landscape plantings undertaken by the site operator. In response to previous concerns raised by adjoining neighbours, the operator has amended current site practices to ensure that all works are now conducted below the ridgeline and screened away from view.

7.11.2 Impacts of the Proposal

Although the subject land has continued to operate for over 45 years with generally little to no objection, it is acknowledged however that both the landowner and Council did receive several objections from adjoining owners in the Himalaya estate in circa 2007 at the time of a previous modification request in regards to the visual appearance of the quarry and associated waste disposal area.

In response, the owner agreed to relocate all areas of works below the existing ridgeline and undertake extensive landscape screen plantings along the property boundary and along Winchester Lane as a means of reducing the visual impact of this development.

Since these works have been undertaken no objections have been received from adjoining neighbours and the development has remained generally screened from adjoining residential neighbours. Consistent with current day work practices, the subject development does not propose to undertake any quarrying activities that will be visible from adjoining or nearby and will continue to undertake these works below the existing ridgeline.

Whilst it is acknowledged that the existing and future quarry will be visible from adjoining industrial developments and another existing operating quarry (Burgess' Quarry), these are not 'sensitive receptors' and the impacts upon them will be low.

Similarly, the impacts on adjoining public roads will also be low given the location and extent of the works proposed. In particular, the areas of extraction will be largely screened from the adjoining Gerogery Road due to dense roadside vegetation present along this roadway, the large distance from this roadway, as well as the natural terrain of the land which screens the area of works.

7.11.3 Mitigation and Monitoring Measures

In response to the likely impacts of the proposal, a number of mitigation and monitoring measures are recommended as part of the Project including:

- Locate and position future works below the existing ridgeline of Nine Mile Hill to screen areas of extraction and waste disposal away from sensitive receptors (rural residential dwellings);
- Undertake ongoing rehabilitation works on site to minimise the area of disturbance and maintain the natural setting of the land;
- Maintain existing landscape screen plantings and where appropriate, undertake additional landscape plantings; and
- Upon exhaustion of all extractive materials, rehabilitate the entire site back to pre-development conditions (i.e. rural paddocks and grasslands).

7.12 Surrounding Land Uses

Consideration of the context and setting of the subject land with regards to surrounding land uses is critical to the ongoing operation and use of the land as a quarry and associated works (recycling of concrete and disposal of biosolid waste).

7.12.1 Existing Conditions

The surrounding area is mixed in nature and adjoins a variety of different land uses.

To the north, north-east and north-west of the subject land are a number of rural residential lifestyle properties contained within the 'Himalaya' and 'Claremont' residential Estates. Of these, approximately 75 dwellings are located within a 1.5km radius of the existing quarrying site. These properties are zoned R5 Large Lot residential under the LEP and generally range in size from 2 hectares to 4 hectares and contain residential dwellings and associated shedding and ancillary structures.

The subject land adjoins Gerogery Road to the east, as well as the remainder of the Nile Mile Hill ridgeline, which is a Crown Land owned environmental reserve. This area is heavily vegetated and is a bushfire source.

To the south and south-east is industrially zoned land, which forms part of the NEXUS Industrial Hub. Contained within this industrial area are a number of large-scale industrial operators including the Norske Skog Newsprint Mill, Overall Forge, as well as, the Ettamogah Intermodal Hub given the areas' location alongside the Hume Highway and the main Melbourne-Sydney railway line. Land located immediately to the south is currently under construction for a council-owned industrial subdivision ('NEXUS').

Land to the south-west is currently being used by the Twin Cities Model Aero Club for recreational activities, whilst land further to the south-west is also being used for the purposes of an extractive industry (Burgess' Quarry).

It is noted that this extractive industry is operating at a much more intensive scale as compared to the current operations being undertaken on the subject land and is used in association with another similar operation in Wagga Wagga, which has an average approximate output of 400,000 tonnes per annum.

Products produced from this site include aggregate suitable for concrete sealing applications, as well as roadbase material for road and bridge constructions. At present, this quarry supplies quarry products to Wagga Wagga City Council, Albury City Council, Lockhart Shire Council, Greater Hume Shire Council, Indigo Shire Council and Corowa Shire Council.

Land to the west of the subject land is rural-zoned and generally limited to the broadacre grazing of cattle. Notwithstanding, a small parcel of land located only approximately 500m to the west of current quarrying operations (Pit 3) is used by the Albury Wodonga Clay Target Club for recreational activities.

It is noted that this facility is accessed via a Right of Way over the subject land and shares the same internal driveway accessway used by the existing quarry. This facility has been operating from this location for over 10 years with little to no incidents of conflicts with the existing operating quarry.

7.12.2 Impacts of the Proposal

The operation and use of the subject land as a quarry and associated works, including the crushing of recycled concrete has the potential to create a number of impacts for surrounding land uses including:

- Noise and vibrations from blasting, material extraction, vehicles and machinery;
- Traffic and road safety as a result of large heavy vehicles utilising public roads;
- Visual impacts associated with extraction areas on surrounding land;
- Air quality impacts including dust generation from quarrying activities, road haulage and odour impacts; and
- Environmental impacts on local flora and fauna.

Notwithstanding the above, it is reiterated that the subject land has continued to operate for the purposes of an extractive industry and associated works, including the crushing of recycled concrete and disposal of biosolid waste for over 45 years with little or no complaint.

Accordingly, the continued operation of the subject land as a quarry and associated works will not adversely affect the surrounding land uses and will act as an appropriate transition/buffer between proposed large scale heavy industrial developments located to the south and large lot residential properties located to the north.

7.12.3 Mitigation and Monitoring Measures

Although the subject land has continued to operate generally without incident or complaint for over 45 years, it is still considered necessary that a number of mitigation and monitoring measures be implemented as part of the Project including:

- Maintain and improve the entrance to the property from Gerogery Road to ensure traffic safety and function is not compromised;
- Implement dust suppression measures as outlined under the air quality section;
- Implement noise reduction measures as outlined under the noise, blasting and vibrations section of this report;
- Implement and maintain existing environment protection measures for the disposal of waste;
- Maintain existing landscape screenings to road access areas;
- Hours of operation to be limited to 7am to 6pm Monday to Saturday with no activities to occur on Sundays or public holidays;
- Areas of extraction shall continue to be located below the ridgeline and screened from adjoining residential neighbours;
- Revegetate the site with local indigenous plant species during the rehabilitation stages of the project. This includes planting overstorey, understorey and ground-layer species;
- Undertake staged and ongoing site rehabilitation works ('retreat method') once an area has been exhausted in accordance with a rehabilitation management plan; and
- Upon exhaustion of all extractive materials, rehabilitate the entire site back to pre-development conditions (i.e. rural paddocks and grasslands).

7.13 Work, Health and Safety

The operation and use of the subject land as an extractive industry and associated works including; the crushing of recycled concrete and disposal of biosolid waste has the potential to create a public safety risk for adjoining neighbours and road users and therefore consideration of the public safety risk must be undertaken as part of this EIS.

7.13.1 Existing Public Safety Conditions

It is reiterated that the subject land has continued to operate for the purposes of an extractive industry and associated works including the crushing of concrete and disposal of biosolid waste for over 45 years with little or no incident or complaint.

There are a number of factors that have contributed to this level of compliance including;

- the generally isolated location of the proposed works and setbacks from adjoining land uses;
- the relatively small-scale nature and operation of the quarry;
- the fact that the site is secured via fences and gates ensuring that the site is not publicly accessible;
- matters regarding noise and dust generation have been appropriately monitored and mitigated so as to minimise any impacts on public health;
- implementation and maintenance of existing environmental protection measures associated with existing quarrying activities, recycling of concrete and disposal of biosolid waste;
- the development does not store any hazardous chemicals; and
- appropriate site management, work, health and safety practices have been implemented including a requirement for at least 3 staff to be present on-site at all times when undertaking quarrying activities.

Consequently, the existing quarry does not currently pose a significant public health or safety risk.

7.13.2 Impacts of the Proposal

Despite the general lack of incidents or public and worker safety concerns that have occurred on site, the use and operation of the subject land as a quarry and associated works, does still have the potential to create public safety risks, including road safety issues, work, health and safety risks, as well as environmental health issues (odour, noise, dust).

Whilst this has the potential to create public/worker health and safety concerns, this is considered satisfactory in this instance as:

- The current operations are already subject to a number of existing environmental protection measures to ensure the development operates without any public safety risks or environmental harm;
- The subject land is not publicly accessible and is secured via fencing and access gates. In addition the main access gates have been fitted with a motion-censored infra-red security camera that monitors people entering and exiting the site;

- The development does not involve the storage, handling or transport of any hazardous or dangerous goods that require waste tracking, which is classified as special or hazardous waste;
- Public safety measures and operational management measures have been established and implemented over the life of the quarry, including a requirement for a minimum of three (3) staff to be present on-site at all times and the installation of security cameras on screening and crushing plant to monitor quarrying operations;
- Current and proposed activities, including blasting works will be undertaken in accordance with relevant work, health and safety requirements, including the requirements of:
 - o Work Health and Safety Act 2011;
 - o Work Health and Safety Regulation 2011;
 - o Work Health and Safety (Mine and Petroleum Sites) Act 2013;
 - o Work Health and Safety (Mine and Petroleum Sites) Regulation 2014
 - o Explosives Act 2003; and
 - o Explosives Regulation 2013.

Furthermore, matters regarding public safety associated with existing bushfire risks have also been assessed in accordance with the requirements of the NSW Rural Fire Services (RFS) Guideline *Planning for Bush Fire Protection, 2006* (PBP) as the property is partly classified as bush fire prone.

In accordance with the SEARs an assessment against the general aims and objectives contained within Clause 1.2 of PBP has been undertaken, which outlines:

The aim of PBP is to use the NSW development assessment system to provide for the protection of human life (including fire-fighters) and to minimise impacts on property from the threat of bush fire, while having due regard to development potential, on-site amenity and protection of the environment.

More specifically, the objectives are to:

- (i) *Afford occupants of any building adequate protection from exposure to a bush fire;*
- (ii) *Provide for a defensible space to be located around buildings;*
- (iii) *Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;*
- (iv) *Ensure that safe operational access and egress for emergency service personnel and residents is available;*
- (v) *Provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ); and*
- (vi) *Ensure that utility services are adequate to meet the needs of fire fighters (and other assisting in bush fire fighting).*

Following a review of the subject land, the proposed development does not depart from the aims or objectives of PBP. In particular, it is noted that the proposed development does not involve a habitable building or use and will continue to be used for extractive industry purposes.

Furthermore, only a very small portion of the subject land is actually classified as being bushfire prone and the development site is well separated from surrounding and adjoining land uses and already has access to two access points that could be accessed and utilised during times of a fire.

The development is also not classified as a 'Special Fire Protection Purpose' as per Section 100B of the *Rural Fires Act 1993*.

7.13.3 Mitigation and Monitoring Measures

Notwithstanding the above, it is still considered necessary to implement a number of mitigation and monitoring measures as part of the Project including:

- Maintain and monitor existing environmental protection measures around quarrying areas and waste disposal areas (in accordance with a previously issued development consent and EPA license);
- Maintain and where necessary, undertake improvement works to the intersection of Gerogery Road and Winchester Lane to ensure traffic safety and function is not compromised;
- Maintain existing speed restrictions, warning signals and communication methods for both heavy vehicles and domestic vehicles utilising Winchester Lane;
- Continue to restrict and limit the amount of biosolid waste that is received and disposed of on-site; and
- Undertake blasting and site operation works in accordance with relevant works health and safety guidelines, Work Cover and Australian Standards.

7.14 Utilities & Services

An assessment of the proposed demands on utilities and services from the use of the subject land as an extractive industry and associated works has been undertaken as part of the preparation of this EIS.

7.14.1 Existing Conditions

The subject land is located on the fringe of the urban area of Albury and is currently used for the purposes of an extractive industry, crushing of concrete and disposal of biosolid waste from the adjoining Norske Skog Paper Mill.

Accordingly, the subject land is connected to the existing road network and reticulated water (not for drinking purposes). No other services are currently provided to the subject land given its use as an extractive industry and associated works.

In addition, a number of easements currently traverse the subject land including:

- Right of Carriageway – 20m wide.

This easement currently protects Winchester Lane and provides legal access to the residential dwelling at 96 Winchester Lane, as well as the Albury Wodonga Clay Target Club. Pit 3 is also accessed via this existing Right of Way.

- Electricity – 20m wide

An electricity easement currently traverses the subject land in a general north-east and south-west direction and provides an electrical supply to the residential dwelling at 96 Winchester Lane, as well as the crushing plant contained in Pit 3; and

- Water supply – variable and 4m wide.

An easement for water supply currently exists within the subject land and is generally located on the northern side of Winchester Lane, which services the residential dwelling at 96 Winchester Lane. A second easement for water supply is also provided over the subject land as it applies to an existing farm dam, which also benefits this residential dwelling.

Sewerage generated from the staff amenities building is disposed of onsite via a septic tank, which is located approximately 40 metres south of this existing building.

7.14.2 Impacts of the Proposal

The proposed ongoing use and expansion of the subject land as an extractive industry is not expected to generate any additional demands for infrastructure and services over and above the existing operations on-site.

Furthermore, the proposed development will not adversely affect the existing right of carriageway and water supply easements that currently traverse the subject land.

It is noted however, that the existing electrical easement that traverses the site will need to be realigned as this easement is located within the proposed quarry expansion area (stages 4-6). In response, this infrastructure will be relocated prior to development occurring in stages 4-6 of the

quarry expansion area and will be realigned through the current extraction pit and proposed stage 2-3 expansion areas, which will have been exhausted and rehabilitated back to its natural state.

A site plan showing the current and proposed realignment of this electrical easement is provided in **Attachment B**.

Matters regarding on-site effluent disposal have also been considered and are appropriate in this instance as there is ample capacity within the current septic disposal system to accommodate the ongoing use of this site.

7.14.3 Mitigation and Monitoring Measures

A number of mitigation and monitoring measures in relation to utilities and services are recommended as part of the Project including:

- Protect existing easements and infrastructure that currently traverse the subject land from works;
- Realign the existing electrical easement prior to works commencing on Stages 4-6 of the development in consultation with the responsible electricity provider;
- Undertaken routine monitoring and maintenance of the existing septic tank system to ensure that it is operating efficiently and not causing any environmental harm;
- Maintain and where necessary, improve the entrance to the property from Gerogery Road to ensure traffic safety and function is not compromised; and
- Reinstate road surfaces damaged by the movement of heavy vehicles and/or machinery associated with the proposed works.

7.15 Rehabilitation & Future Land Use

AP Delaney & Co are committed to the effective rehabilitation and eventual closure of Rockwood Quarry once all resources have been exhausted from the site. This will be achieved through progressive rehabilitation and management of the quarry operations to work progressively towards the eventual final rehabilitation and closure of the site.

The following sections discuss AP Delaney & Co's approach to rehabilitation of the site and approach to quarry closure, as well as a summary of key recommendations and actions as part of the long-term rehabilitation of this site. Further details regarding rehabilitation works are contained in a Quarry Closure and Rehabilitation Plan (see **Attachment L**), which has been prepared for the site.

A plan showing the site rehabilitation works is provided in **Figures 47 and 48**.

7.15.1 Proposed Final Land Use

At the completion of extraction works on-site, AP Delaney & Co proposes to rehabilitate the entire site back to its natural state and pre-development conditions, being rural paddocks and grasslands consistent with a number of adjoining lands.

Given the proximity of the subject land to adjoining industrial developments and larger extractive industries, the land will most likely remain rural in nature and will serve as a transition or buffer between adjoining industrial lands to the south and rural residential dwellings to the north.

It is noted however that the southern portion of the subject land adjacent to Gerogery Road has been identified in the Albury Industrial Hub Master Plan for future industrial purposes (see **Figure 22**); however this will need to be further investigated to determine whether it is appropriate.

A plan showing the future land uses is provided in **Figure 48**.

7.15.2 Closure and Rehabilitation Objectives

Rehabilitation of the existing quarry pit and proposed pit extension will be undertaken in accordance with the following objectives:

- Undertake ongoing and staged rehabilitation works to limit the area of disturbance at any given time;
- Establish a sustainable native ecosystem, commensurate with adjacent land use types;
- Provide a safe and stable landform compatible with the intended final use;
- Re-establish habitat for local flora and fauna;
- Comply with relevant regulatory requirements and attain regulatory consensus on the successful closure and rehabilitation of the Project area;
- Reduce the need for long term monitoring and maintenance by achieving effective rehabilitation;
- Complete the closure, decommissioning and rehabilitation works as quickly and cost effectively as possible whilst achieving primary objectives;
- Provide a sustainable plant/groundcover through rehabilitation of disturbed areas; and

- Ensure that the design periods and factors of safety for all site works take into account extreme events and other natural processes such as erosion.
- Minimise visual impact of the operation during the operational phase as well as post-quarrying; and
- Produce a final “walk away” landform that is geotechnically stable that blends aesthetically into the surrounding landforms, yet as far as possible does not limit possible future land uses.

7.15.3 Closure and Rehabilitation Criteria

Completion criteria will be utilised to demonstrate achievement of rehabilitation objectives. The closure and rehabilitation criteria for the Project are outlined in **Table 28**:

Table 28: Closure and Rehabilitation Criteria

Performance Indicator	Rehabilitation Performance
Safety	
▪ Access and public safety to be managed during operations and at the closure of the quarry.	▪ Access to the site post closure will be restricted via fencing, access gates and security cameras.
Native Vegetation	
▪ Rehabilitated quarry areas contain flora species characteristic of the desired native vegetation communities in the landscape; ▪ Monitoring indicates that natural regeneration is occurring. ▪ The majority of trees are healthy and growing in rehabilitated areas. ▪ There is no significant weed infestation.	▪ More than 75 per cent of trees are healthy and growing. ▪ Second generation tree seedlings are present or likely to be, based on monitoring in comparable older rehabilitation sites (i.e. evidence of fruiting of native species observed). ▪ There is no significant weed infestation such that weeds do not comprise a significant proportion of species in any stratum.
Landform	
▪ No significant erosion or runoff impacts are present. ▪ Rehabilitation activities are undertaken as soon as reasonably possible to minimise unnecessary dust generation from cleared areas. ▪ No significant visual impacts from the quarry.	▪ Final void areas have been partially backfilled with materials and stabilised to achieve a 4:1 batter. ▪ Rehabilitated slopes on overburden dumps are stabilised. ▪ No significant erosion is present that would constitute a safety hazard or compromise the capability of supporting the end land use. ▪ Contour banks are stable and there is no evidence of overtopping or significant scouring as a result of runoff. ▪ Visually prominent locations are immediately rehabilitated.
Decommissioning	
▪ All surface infrastructure to be decommissioned and removed, including the removal of services (roads, power, water and communications).	▪ All surface infrastructure which does not have a potential future use associated with the post quarrying land use will be removed, unless such removal has a greater environmental impact than rehabilitating the area with the infrastructure remaining in place. ▪ Removal of all services (power, water, communications) that are not needed as part of the future development of the land. ▪ All infrastructure that is to remain as part of the future land

Performance Indicator	Rehabilitation Performance
	use have been assessed by an appropriately qualified person and determined to be suitable for the intended use and do not pose any hazard to the community.
Soil	
- Revegetated areas to be top dressed with topsoil. - Soils pH to be within an appropriate pH range. - The land is to be free of land contamination or hazardous materials.	- Topsoil or a suitable alternative has been spread uniformly over the rehabilitation surface. - Soil pH to be within acceptable range of 5-9. - Monitoring demonstrates soil profile development in rehabilitated areas (e.g. development of organic layer, litter layer). - Surface layer is free of any hazardous materials. - Any contamination will be appropriately remediated so that appropriate guidelines for land use are met.
Water	
- Existing dams to be inspected to ensure they are structurally sound following closure of the quarry. - No evidence of excessive run-off or contamination (namely silt) into downstream waterways. - Cut off drains to be removed and/or retained for water quality control.	- Inspection of downstream waterways to ensure that the development site is not causing excessive run-off. - Dams to be retained on-site are structurally sound and show no signs of leaks. - Dams to be de-silted where required to ensure efficiency. - Water control measures (where remaining) are stabilised and working effectively.

The preliminary closure criteria will be revised through the Project life and used as the basis for further refinement following the commencement of rehabilitation activities, consideration of the results of the rehabilitation monitoring programs and consideration of any stakeholder feedback.

7.15.4 Rehabilitation Method

In order to achieve the closure and rehabilitation objectives and criteria, a number of rehabilitation activities are proposed as follows:

- Undertake staged and ongoing site rehabilitation works via a 'retreat method' once an area has been fully exhausted including the removal of surface and ground infrastructure no longer required;
- Utilise topsoil and vegetation that has been ripped and stockpiled on-site for use in rehabilitation works and where necessary, import additional local topsoil containing native plant seeds to build up the groundcover and encourage regeneration;
- Ensure that areas of disturbance have been stabilised and leveled with appropriate batters;
- Where necessary, areas of disturbance will be stabilised using matting or mulching as necessary to prevent erosion and sown with seed of locally native grasses and shrubs;
- Re-vegetate disturbed areas with local indigenous plant species, including ground covers, understorey and overstorey species;
- Prevent stock access to areas that have been rehabilitated to allow native re-growth; and
- Monitor rehabilitated areas ongoing to ensure that they are stable, re-vegetated and self-sustaining.

In accordance with the above, it is noted that rehabilitation works have been undertaken ongoing over the life of the quarry with Pit 2 already rehabilitated and Pit 1 partially rehabilitated with works remaining ongoing.

7.15.5 Quarry Records

Throughout the life of the Project, active records will be maintained in relation to processes that may impact upon rehabilitation of the Project area. This will provide the basis for interpretation of subsequent rehabilitation monitoring outcomes. Amongst these records to be maintained include:

- detailed rehabilitation procedures;
- identification of any potentially contaminated sites (e.g. fuel/oil facilities);
- environmental monitoring records;
- records of topsoil stockpiles, including information such as the date in which they were formed and maintenance works undertaken (e.g. weed control, planting with native legumes to maintain microbes etc.); and
- environmental incident records.

7.15.6 Rehabilitation Monitoring

Annual inspections of rehabilitated areas will be undertaken over the life of the Project to assess soil conditions and erosion, drainage and sediment control structures, runoff water quality, revegetation germination rates, plant health and weed infestation. Any required management actions that are identified as part of the inspection are implemented as soon as practical. Where necessary, rehabilitation procedures will be amended accordingly with the aim of continually improving rehabilitation standards.

The objective of this monitoring is to evaluate the progress of rehabilitation towards fulfilling long term land use objectives and criteria. The monitoring program will be continued until it can be demonstrated that rehabilitation has satisfied the closure criteria. Information from this monitoring program will also be used to refine closure criteria as required.

7.15.7 Rehabilitation Care and Maintenance

Dependent upon the outcomes of the rehabilitation monitoring as outlined above, the scope of the rehabilitation care and maintenance may include the following:

- weed and feral animal control of rehabilitation;
- erosion and sediment control works;
- re-seeding/planting of rehabilitation areas that may have failed;
- maintenance fertilising; and
- repair of fence lines, access tracks and other general related land management activities.

7.15.8 Decommissioning

Decommissioning will occur at the completion of quarrying and rehabilitation within Pits 1 and 3, including the proposed extension area. This will occur once the resource within the Project area has been exhausted and will involve the decommissioning of plant and infrastructure, as well as the finalisation of rehabilitation works consistent with the intended final land use.

A summary of the general decommissioning activities that will be undertaken as part of the closure and rehabilitation of the Project area is outlined below:

- The plant and equipment will be decommissioned, transferred or sold, either for use at another quarry or industrial operation, or for scrap metal. All surface infrastructure including the crushing and screening plant will be removed and the areas containing this infrastructure rehabilitated.

It is noted however that the existing accessway (Winchester Lane) will remain as it will still be required to service the existing dwelling at 96 Winchester Lane, as well as the Albury Wodonga Clay Target Club.

- It is envisaged that electricity services to any remaining infrastructure will be removed prior to the commencement of building demolition works. Other services such as telecommunication and water supply will also be disconnected and removed where practical.
- Provided that it does not pose a constraint to the proposed final land use, there may be circumstances where structures such as footings, underground water pipelines and disconnected power cables are left in situ. Such circumstances may include where it is not practical to retrieve the structures or where their removal may lead to environmental damage (e.g. erosion or loss of vegetation through clearing).

In such circumstances, the location of these remaining structures will be surveyed and recorded on a plan and provided to the landowner.

- Where potential contamination may have occurred as a result of activities (e.g. re-fuelling areas, workshops, etc.), appropriate investigations will be undertaken to determine the presence and extent of any contamination.

Where it is identified, contaminated material will be managed in accordance with relevant legislative requirements. Further investigations involving sampling will be undertaken to validate that contamination has been remediated to acceptable levels.

As discussed above, a detailed quarry closure planning process resulting in the development of a Quarry Closure Plan will be developed approximately three years prior to cessation of quarrying activities. This plan will formalise the approach to decommissioning and closure of Rockwood Quarry.

7.15.9 Summary of Rehabilitation Measures

In response to the likely impacts of the proposal, a number of mitigation and monitoring measures are recommended as part of the Project including:

- Undertake staged and ongoing site rehabilitation works ('retreat method') once an area has been exhausted in accordance with a rehabilitation management plan;
- Utilise topsoil that has been ripped and stockpiled on-site for use in rehabilitation works;
- Re-vegetate the site with local indigenous plant species during the rehabilitation stages of the project. This includes planting overstorey, understorey and ground-layer species;
- Upon exhaustion of all extractive materials, rehabilitate the entire site back to pre-development conditions (i.e. rural paddocks and grasslands); and
- Prevent stock access to the site after rehabilitation to allow for native re-growth.

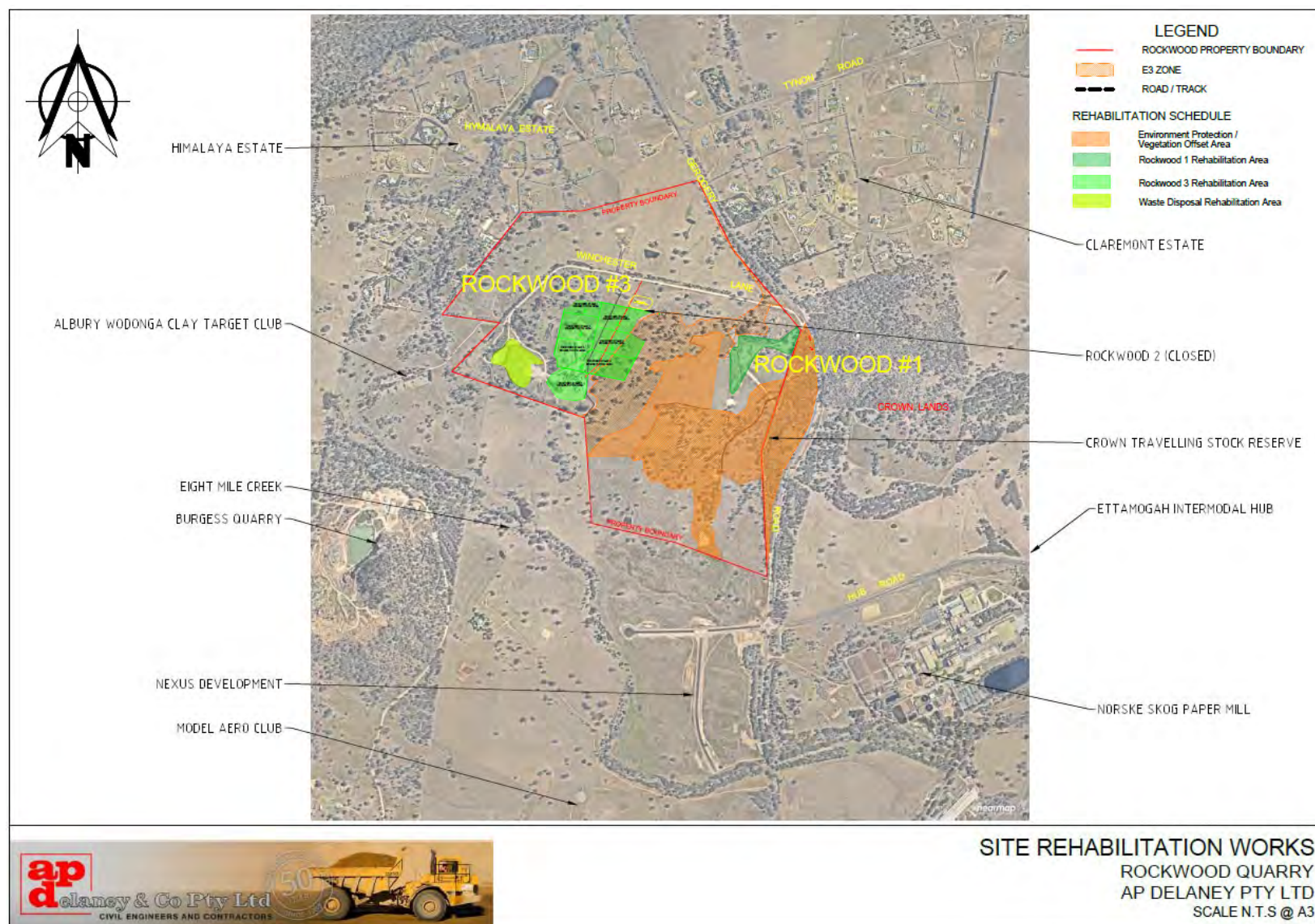


Figure 47 Rehabilitation Site Works Plan

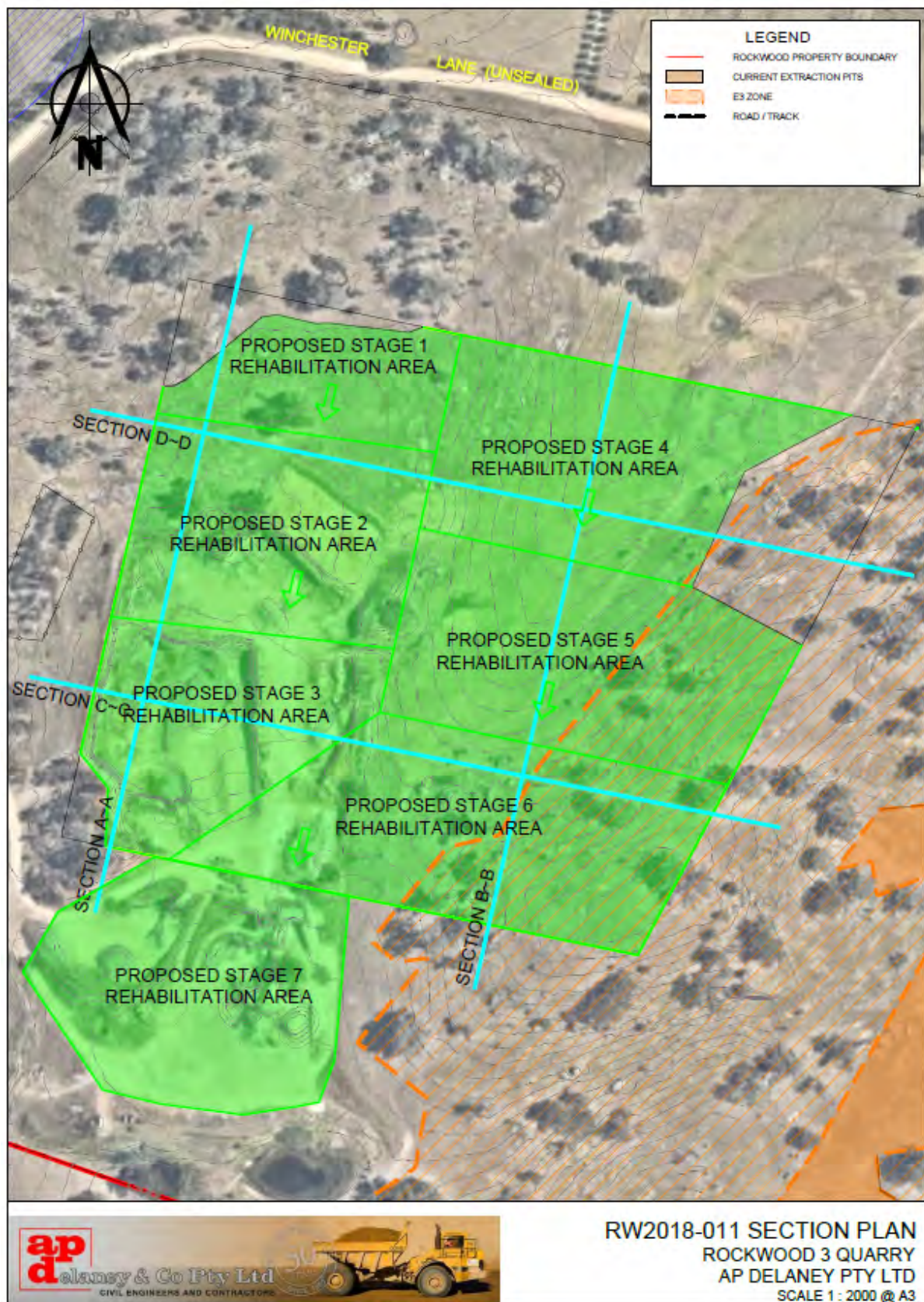


Figure 48 Rockwood 3 – Proposed Rehabilitation Staging

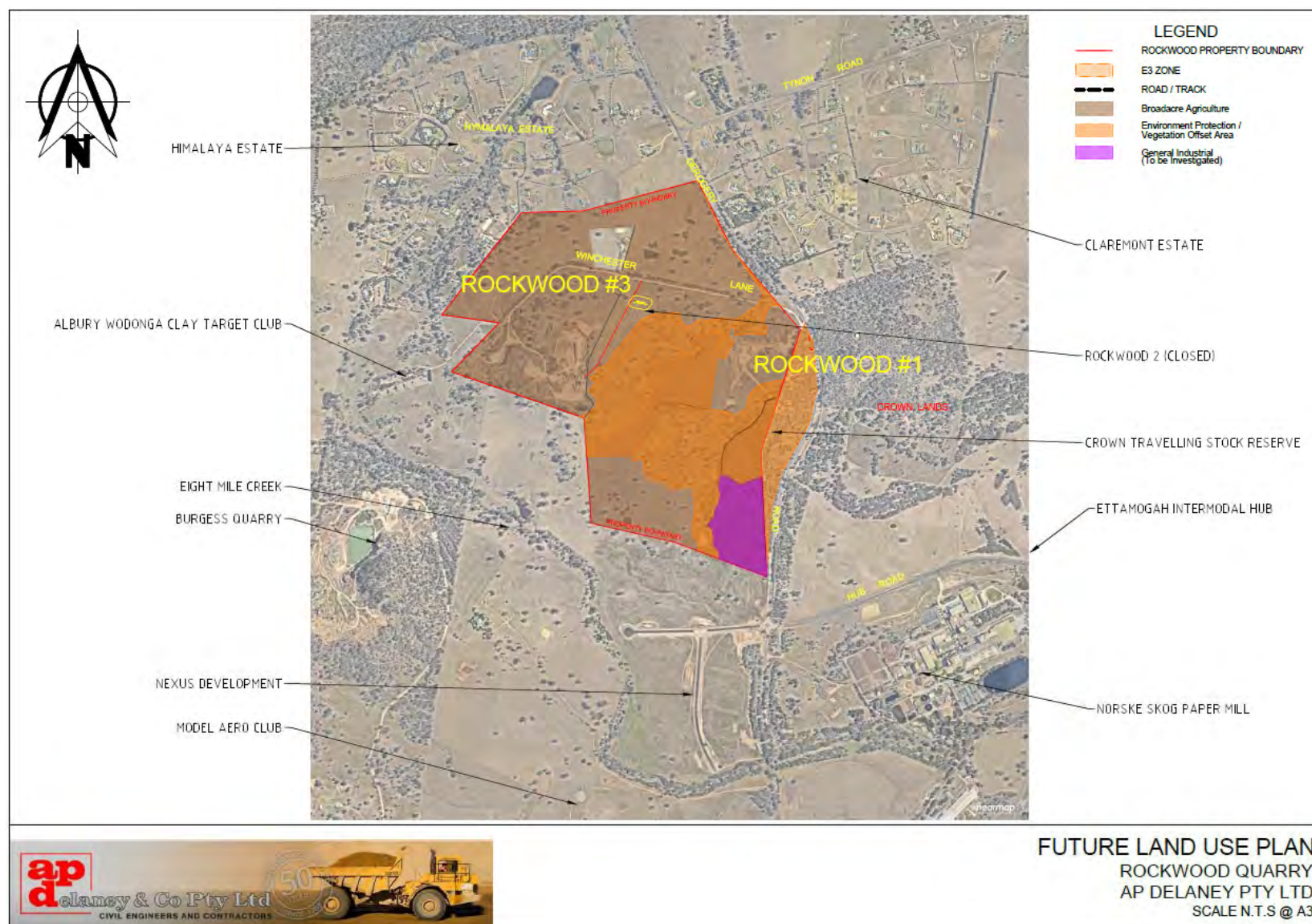


Figure 49 Future Land Use Plan

8 Summary of Mitigation and Monitoring Measures

Table 29 provides a summary of all the currently adopted and recommended mitigation and monitoring measures proposed within this EIS in relation to the development:

Table 29: Summary of Mitigation and Monitoring Measures

Risk Type	Mitigation Measures
Transport & traffic	▪ Maintain the entrance to the property from Gerogery Road to ensure traffic safety and function is not compromised; ▪ Remove several small trees and branches on the Gerogery Road road verge to improve existing sight line issues looking south; ▪ Investigate future options to improve existing sight lines for northbound traffic, including undertaken road embankment works; ▪ Avoid movement of heavy vehicles on wet unsealed roads; ▪ Heavy vehicles shall be driven at moderate to low speeds in accordance with existing self-imposed speed restrictions; ▪ Maintain existing warning signals and communication methods for both heavy vehicles and domestic vehicles utilising Winchester Lane; ▪ Avoid the trafficking of mud and other spoil by heavy vehicles onto sealed roads; ▪ Liaise with Council and/or the RMS in regards to traffic management; and ▪ Reinstate any road surfaces damage by the movement of heavy vehicles and/or machinery associated with the proposed works.
Air Quality (dust)	▪ Regular watering of unsealed haulage roads, working areas and stockpiles, particularly on dry, hot windy days; ▪ Water sprays on conveyors, stockpiles and areas of disturbance or loose soil; ▪ Progressive stabilisation/rehabilitation of exposed areas no longer needed for operational purposes; ▪ Covering of all laden trucks leaving the site when transporting materials, particularly on public roads; ▪ Regular machinery maintenance to ensure that machinery is working efficiently; and ▪ Limiting the disturbance of waste disposal areas and the covering of these areas with clean virgin fill. ▪ Maintain and manage existing landscape screen plantings along the existing accessway and boundaries of the site; ▪ Maintain and locate existing quarrying activities below ridgelines, which will screen adjoining residential dwellings to the north; ▪ Application of fine water sprays and implementation of adequate dust control mechanisms on mobile crushing and screening plant; ▪ Imposition of speed limits on all internal roads; ▪ Minimisation of the total disturbed/working area at any one time; ▪ Designing of blasts to minimise dust (underground blasting); ▪ Consideration of current weather conditions prior to blasting. This includes visual observations of wind speed and wind direction to determine whether any dust emissions from the blast will be carried in the direction of nearest sensitive receptors; ▪ Awareness training regarding air quality management for employees and contractors, where relevant;

Risk Type	Mitigation Measures
Air Quality (dust) Cont.	▪ Generally undertake crushing works after watering down of raw materials to be processed; ▪ Ongoing management and monitoring of deposition dust in the area surrounding the quarry; ▪ Continued rehabilitation and backfilling of waste disposal areas with clean virgin fill.
Aboriginal Cultural Heritage	▪ If any suspected human remains are discovered during any activity works, all works in the vicinity must stop and the remains must be left in place. The NSW Police and Coroner's Office must be notified immediately and if the human remains are likely to be Aboriginal in origin, the find needs to be reported to the Aboriginal parties and OEHL; ▪ Continue to monitor the site and if any known artefacts or objects are discovered during works immediately stop works and contact the local OEHL office; ▪ Operators of extraction equipment to be briefed on the requirements relating to the unearthing of potential archaeological relics or items.
Biodiversity	▪ Avoid disturbance to any native vegetation surrounding the expansion area by fencing off all retained vegetation; ▪ Undertake staged tree removal works and only remove those trees necessary for that stage of the development; ▪ Any trees to be retained to be protected in accordance with Australian Standard AS4970 – 2009 Protection of trees on development sites, during construction, operation and decommissioning of the site compound; ▪ In the unlikely event that unexpected threatened species (e.g. Pink-tailed Worm-lizard) are identified during the project, works should cease and an ecologist contacted; ▪ Implement a sediment and erosion control plan to avoid indirect impacts to surrounding biodiversity values; ▪ Implement a site management plan (EMP); ▪ Hollow-bearing trees to be removed in a two-stage process; - o Stage 1: All surrounding vegetation to be cleared and grubbed; - o Stage 2: 24 to 48 hours later (or in accordance with approval docs) the hollow-bearing trees to be inspected by an ecologist. If resident fauna is observed, the hollow section is to be lowered to the ground and the animal allowed to move on of its own volition. If injured, the fauna to be taken to a WIRES carer or appropriate veterinarian for care; ▪ Remove any noxious weed material, including checking and cleaning earthmoving equipment prior to moving to another site; ▪ Install a transect line of 40 roofing tiles in clusters of four extending every 40 metres along the north-west facing rocky slope of the proposed expansion site. These tiles should be checked for host ant species and sheltering Pink Tailed Worm Lizards on a monthly basis between August and November for a minimum of three years, in conjunction with searches of suitable rocks; ▪ Undertake infill revegetation of proposed offset area in accordance with the guidelines set out in the Vegetation Management Plan (see Attachment I); ▪ Undertake staged and ongoing site rehabilitation works ('retreat method') once an area has been exhausted; ▪ Upon exhaustion of all extractive materials, rehabilitate the entire site back to pre-development conditions (i.e. rural paddocks and grasslands); and ▪ Prevent stock access to the site after rehabilitation to allow for native re-growth.

Risk Type	Mitigation Measures
Noise & Vibrations	▪ Limit blasting to avoid impacts of noise and vibrations; ▪ Notify neighbours via letterbox drop prior to any blasting event; ▪ Any noise from extractive industry operations must not exceed 35dBA at any residence off the site; ▪ Hours of operation to be limited to 7am to 6pm Monday to Saturday with no activities to occur on Sundays or public holidays outside of the disposal of biosolids; ▪ Scheduling the use of noisy equipment at the least sensitive time of the day; ▪ Orientate heavy equipment away from any sensitive areas, to achieve the maximum attenuation of noise; ▪ Undertake regular and routine maintenance of machinery and other vehicles to ensure optimum running capacity so as to limit noise and ▪ AP Delaney and Co will manage the design and size of blasts to meet relevant ANZECC and OEH ground vibration and air blast criteria at all sensitive residential receiver locations.
Water	▪ Establishment, maintenance and monitoring of existing spillways, diversion banks and cut-off drains around quarrying and associated activities (particularly waste disposal areas) to prevent stormwater run-off from becoming polluted; ▪ Collection and filtering/treatment of all stormwater run-off generated from the site via a series of existing detention dams; ▪ Maintenance of existing discharge points preventing erosion; ▪ Monitor diversion drains in the winter and spring months when rainfall is at its highest; ▪ Staging quarrying activities and rehabilitation works on-site to minimise the area of disturbance; ▪ Regularly maintain and monitor all erosion and sediment control measures (such as cleaning out silt fencing) and sediment collection dams to ensure they are effectively functioning; ▪ Inspection of leachate dams and cut off drains to ensure that they are structurally sound and are not subject to leaking; ▪ Limiting the irrigation of leachate run-off to summer months; and ▪ Continue to undertake periodic monitoring and environmental audits of the waste disposal area in relation to surface water and groundwater, including reviewing existing piezometers and bores on-site. Continue to provide these results to the EPA in accordance with current license conditions.
Soil & Land Resources	▪ Continue to test the quality of the excavated material to ensure it is appropriate for its intended application; ▪ Erosion and sediment controls to be implemented and maintained continuously throughout the period of operation of the quarry and maintained until a rehabilitated program is completed; ▪ Topsoil (biomass) shall be stockpiled for use as part of rehabilitation works; ▪ All chemical storage and re-fuelling of vehicles to only occur in bunded areas; ▪ Site remediation/rehabilitation works to be undertaken to restore the land back to its natural state at the completion of works.

Risk Type	Mitigation Measures
Erosion & sediment control	▪ Erosion and sediment controls to be maintained and periodically reviewed until an area has been rehabilitated back to its natural state; ▪ Stage works on-site to minimise the area of disturbance. Where works have been completed within an area undertake rehabilitation works; ▪ Sediment traps or filters to be located and placed near all disturbed areas where potential water run-off may occur. Install hay bales along run-off areas or rock beaching at outfall pipes to help filter storm-water run-off; ▪ Locate silt fences at strategic positions (downslope) to trap sediments; ▪ Provide stockpiles with adequate batters to prevent sediment transportation; ▪ Regularly maintain and monitor all erosion and sediment control measures (such as cleaning out silt fencing) to ensure they are effectively functioning; ▪ Ensure that areas of disturbance are minimised and rehabilitated as soon as works are finished; ▪ Before excavation, the works areas are to be protected from surface water flow by soil berms constructed on the perimeter of the pits and diversion banks that divert surface flow around the excavation site; ▪ Topsoil (biomass) shall be stockpiled for use elsewhere on-site or as part of future rehabilitation works and diversion banks constructed around the piles; ▪ Ongoing maintenance and cleaning of sediment collection dams; ▪ Following completion of rehabilitation works, ensure that livestock access to the quarry and re-vegetated areas is prevented as vegetation can be trampled on and soil exposed.
Hazards & Wastes	▪ Ensure that all work areas are maintained in a neat and tidy manner and prevent the accumulation of waste on-site including; recycling most materials and disposal of waste as appropriate to the Albury Regional Waste Management Centre; ▪ All waste oil will be collected and stored in containers within a covered and bunded area and will be removed from the site by an appropriately licensed contractor including any EPA requirements with respect to the tracking of waste; ▪ All refueling on-site will be undertaken via off-site storage vehicles in bunded areas; ▪ All oil filters will be separately stored and returned to the manufacturer for re-use; ▪ Silt will be periodically removed from the various silt control structures and placed/stored in the product stockpiles or overburden materials for use in progressive rehabilitation; ▪ Waste water from amenities buildings will be treated and disposed of via an on-site septic disposal system; ▪ All waste tyres will be removed by the supplier of replacement tyres; ▪ Waste disposal to be undertaken in accordance with previously issued development consents and EPA licenses; and ▪ Rehabilitated areas to be top dressed, re-vegetated and screened off from access by stock.
Visual	▪ Locate and position future works below the existing ridgeline of Nine Mile Hill to screen areas of extraction and waste disposal away from sensitive receptors (rural residential dwellings); ▪ Undertake ongoing rehabilitation works on site to minimise the area of disturbance and maintain the natural setting of the land; ▪ Maintain existing landscape screen plantings and where appropriate, undertake additional landscape plantings; and ▪ Upon exhaustion of all extractive materials, rehabilitate the entire site back to pre-development conditions (i.e. rural paddocks and grasslands).

Risk Type	Mitigation Measures
Utilities and Services	▪ Protect existing easements and infrastructure that currently traverse the subject land from works; ▪ Realign the existing electrical easement prior to works commencing on Stages 4-6 of the development in consultation with the responsible electricity provider; ▪ Undertaken routine monitoring and maintenance of the existing septic tank system to ensure that it is operating efficiently and not causing any environmental harm; ▪ Maintain and where necessary, improve the entrance to the property from Gerogery Road to ensure traffic safety and function is not compromised; and ▪ Reinstate road surfaces damaged by the movement of heavy vehicles and/or machinery associated with the proposed works.
Social Economic Impact	▪ Maintain and improve, where necessary, existing site access points with Gerogery Road from a traffic safety and efficiency perspective; ▪ Implement dust suppression measures as outlined under the air quality section of this report; ▪ Implement noise reduction measures as outlined under the noise, blasting and vibrations section of this report; ▪ Implement and maintain existing environment protection measures for the disposal of waste in accordance with previously issued development consents and EPA licenses; ▪ Maintain existing landscape screenings to haulage roads and property boundaries; ▪ Hours of operation to be limited to 7am to 6pm Monday to Saturday with no activities to occur on Sundays or public holidays; ▪ Areas of extraction shall continue to be located below the ridgeline and screened from adjoining residential neighbours; ▪ Undertake staged and ongoing site rehabilitation works ('retreat method') once an area has been exhausted in accordance with a rehabilitation management plan; and ▪ Upon exhaustion of all extractive materials, rehabilitate the entire site back to pre-development conditions (i.e. rural paddocks and grasslands).
Surrounding Land Uses	▪ Maintain and improve the entrance to the property from Gerogery Road to ensure traffic safety and function is not compromised; ▪ Implement dust suppression measures as outlined under the air quality section; ▪ Implement noise reduction measures as outlined under the noise, blasting and vibrations section of this report; ▪ Implement and maintain existing environment protection measures for the disposal of waste; ▪ Maintain existing landscape screenings to road access areas; ▪ Hours of operation to be limited to 7am to 6pm Monday to Saturday with no activities to occur on Sundays or public holidays outside of the intermittent disposal of biosolids; ▪ Areas of extraction shall continue to be located below the ridgeline and screened from adjoining residential neighbours; ▪ Revegetate the site with local indigenous plant species during the rehabilitation stages of the project. This includes planting overstorey, understorey and ground-layer species; ▪ Undertake staged and ongoing site rehabilitation works ('retreat method') once an area has been exhausted in accordance with a rehabilitation management plan; and ▪ Upon exhaustion of all extractive materials, rehabilitate the entire site back to pre-development conditions (i.e. rural paddocks and grasslands).

Risk Type	Mitigation Measures
Public Safety	▪ Maintain and monitor existing environmental protection measures around quarrying areas and waste disposal areas; ▪ Maintain and where necessary, undertake improvement works to the intersection of Gerogery Road and Winchester Lane to ensure traffic safety and function is not compromised; ▪ Maintain existing speed restrictions, warning signals and communication methods for both heavy vehicles and domestic vehicles utilising Winchester Lane; ▪ Undertake blasting and site operation works in accordance with relevant works health and safety guidelines, Work Cover and Australian Standards.
Rehabilitation & Future Land Use	▪ Undertake staged and ongoing site rehabilitation works ('retreat method') once an area has been exhausted in accordance with a rehabilitation management plan; ▪ Utilise topsoil that has been ripped and stockpiled on-site for use in rehabilitation works; ▪ Revegetation the site with local indigenous plant species during the rehabilitation stages of the project. This includes planting overstorey, understorey and ground-layer species; ▪ Upon exhaustion of all extractive materials, rehabilitate the entire site back to pre-development conditions (i.e. rural paddocks and grasslands); ▪ Prevent stock access to the site after rehabilitation to allow for native regrowth.
Ongoing Site Operations	▪ Maintain a complaints register and hotline for the quarry; ▪ Continue ongoing consultation with neighbours, particularly prior to any blasting occurring on-site; ▪ Undertake regular maintenance and monitoring of the site to ensure compliance with the Environmental Management Plan recommendations including sediment and erosion control measures and water management recommendations; ▪ Limit the area of extraction and annual extraction rates to those outlined in this EIS; ▪ Hours of operation to be limited to 7am to 6pm Monday to Saturday with no activities to occur on Sundays or public holidays; ▪ Maintain a register of annual extraction rates.

9 Conclusion

The proposed Environmental Impact Statement has been prepared to consider the environmental, social and economic impacts for an extractive industry, the crushing or recycled concrete and associated works at 208 Winchester Lane, Table Top, more commonly known as 'Rockwood Quarry'.

The EIS has addressed the issues outlined in the SEARs and accords with Schedule 2 of the EP&A Regulation with regards to consideration of relevant environmental planning instruments, built form, social and environmental impacts including traffic, noise, construction impacts and stormwater.

The Project will allow for the ongoing supply of construction and road building materials to the local and regional markets for up to 30 years, providing a valuable and necessary resource to the local economy. The Project will continue to have an economic benefit to the local area and region by securing the supply of high quality quarry products, ongoing and increased employment, capital expenditure and ongoing operational expenditure. These benefits will have flow on effects within the local and regional economies.

The Project has been designed with consideration to the environmental values of the Project area and potential impacts of the Project have been minimised through appropriate project design and control measures. The potential environmental impacts of the Project have been thoroughly assessed and, where potential impacts have been identified, mitigation measures and environmental safeguards have been recommended and incorporated into the project design and operational management. Wherever possible, these mitigation measures have been built into the design of the Project to minimise the need for ongoing management throughout the life of the Project such as a reduction in the overall development footprint to avoid areas of environmental sensitivity, or the establishment and protection of vegetation off-set areas.

It is considered that the Project has identified and mitigated potential environmental impacts. Given the planning merits described above, it is requested that the Minister (or delegate) approve the application.

Attachment A

Secretary's Environmental Assessment
Requirements (SEARs) dated 5 September 2016
and correspondence received from NSW
Department of Planning & Environment

Attachment B

Plans

Attachment C

Copy of Previously Approved Development Consents

Attachment D

Environment Protection Licence No. 10069 –
“Rockwood” Winchester Lane, Table Top

Attachment E

Aboriginal Cultural Heritage Assessment Reports, Biosis

Attachment F

Traffic Impact Assessment, Peter Meredith
Consulting

Attachment G

Noise Impact Assessment, Ray Walsh Acoustics,
Noise and Sound

Attachment H

Air Quality Impact Assessment, GHD

Attachment I

Biodiversity Assessment and Vegetation Management Plan, Biosis

Attachment J

Survey & Habitat Assessment for Pink-tailed Work-Lizard, Eco-tone Wildlife & Habitat Assessments

Attachment K

EPBC Referral and Approval

Attachment L

Quarry Closure and Rehabilitation Plan

Attachment M

Hydro-geological Assessment & Borehole Logs, GHD

Attachment N

Australian Newsprint Mills Waste Water Management Plan, NSW Land and Water Conservation

Attachment O

Groundwater Monitoring Results – Biosolid Waste, Nolan-ITU

Attachment P

Product Material Testing Results

Attachment Q

Copy of Neighbour Notification Letter and
Responses to Community Consultation