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Karuah East Quarry

Environmental Assessment Section 75W Application (MOD 1) to amend Part 3A Project Approval 09_0175 Minor Increase to Approved Disturbance Area

Property:

Various Lots
Pacific Highway, Karuah

Applicant:

Karuah East Quarry Pty Ltd

Date:

January 2018

Document Control Sheet

Issue No.	Amendment	Date	Prepared By	Checked By
A	Draft	15 November 2017	MR	ML
B	Final	18 January 2018	MR	ML

Limitations Statement

This report has been prepared in accordance with and for the purposes outlined in the scope of services agreed between ADW Johnson Pty Ltd and the Client. It has been prepared based on the information supplied by the Client, as well as investigation undertaken by ADW Johnson and the sub-consultants engaged by the Client for the project.

Unless otherwise specified in this report, information and advice received from external parties during the course of this project was not independently verified. However, any such information was, in our opinion, deemed to be current and relevant prior to its use. Whilst all reasonable skill, diligence and care have been taken to provide accurate information and appropriate recommendations, it is not warranted or guaranteed and no responsibility or liability for any information, opinion or commentary contained herein or for any consequences of its use will be accepted by ADW Johnson or by any person involved in the preparation of this assessment and report.

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Table of Contents

1.0	INTRODUCTION	5
1.1	PROJECT DETAILS	5
1.2	BACKGROUND AND ENVIRONMENTAL ASSESSMENT OVERVIEW.....	5
1.3	DEVELOPMENT HISTORY	6
1.4	STRUCTURE OF REPORT	6
2.0	CONSULTATION.....	8
2.1	NSW DEPARTMENT OF PLANNING & ENVIRONMENT	8
2.2	KARUAH EAST QUARRY COMMUNITY CONSULTATIVE COMMITTEE.....	9
3.0	DESCRIPTION OF PROPOSAL.....	10
3.1	ALTERNATIVES TO THE PROPOSED MODIFICATION	13
3.1.1	<i>Alternate Location of Additional Disturbance Area</i>	<i>13</i>
3.1.2	<i>Do Nothing Option.....</i>	<i>13</i>
4.0	SITE DESCRIPTION & LOCATION.....	14
4.1	PROPERTY DESCRIPTION & LAND OWNERSHIP	14
4.2	THE LOCALITY & SITE.....	14
4.3	EXISTING SITE IMPROVEMENTS	16
4.4	ACCESS, ROAD NETWORK & TRAFFIC.....	16
4.5	TOPOGRAPHY, DRAINAGE & FLOODING.....	17
4.6	SOILS & GEOTECHNICAL.....	17
4.7	BUSHFIRE	17
4.8	EASEMENTS.....	17
5.0	PLANNING CONTEXT	18
5.1	ENVIRONMENT PROTECTION & BIODIVERSITY CONSERVATION ACT 1999	18
5.2	ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979.....	18
5.3	WATER MANAGEMENT ACT 2000	20
5.4	PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997	20
5.5	NATIONAL PARKS & WILDLIFE ACT 1974	20
5.6	NSW HERITAGE ACT 1977	20
5.7	BIODIVERSITY CONSERVATION ACT 2016 & BIODIVERSITY CONSERVATION (SAVINGS & TRANSITIONAL) REGULATION 2017	21
5.8	THREATENED SPECIES CONSERVATION ACT 1995	21
5.9	NATIONAL GREENHOUSE & ENERGY REPORTING ACT.....	22
5.10	STATE ENVIRONMENTAL PLANNING POLICIES.....	22
5.10.1	<i>SEPP (Major Development) 2005.....</i>	<i>22</i>
5.10.2	<i>SEPP (Infrastructure) 2007</i>	<i>22</i>
5.10.3	<i>SEPP (Mining, Petroleum Production and Extractive Industries) 2007.....</i>	<i>22</i>
5.10.4	<i>SEPP 14 (Coastal Wetlands)</i>	<i>23</i>
5.10.5	<i>SEPP 44 (Koala Habitat Protection).....</i>	<i>23</i>
5.10.6	<i>SEPP 33 (Hazardous & Offensive Development)</i>	<i>23</i>
5.11	HUNTER REGIONAL PLAN 2036.....	24
5.12	LOCAL ENVIRONMENTAL PLANS	25
5.12.1	<i>Great Lakes Local Environmental Plan 1996 (superseded).....</i>	<i>25</i>
5.12.2	<i>Great Lakes Local Environmental Plan 2014.....</i>	<i>25</i>
6.0	ENVIRONMENTAL ASSESSMENT OF MOD 1	27

6.1	FLORA & FAUNA	27
6.1.1	<i>Introduction & Methodology</i>	27
6.1.2	<i>Results & Impact Assessment</i>	27
6.1.3	<i>Biodiversity Offsets</i>	31
6.1.4	<i>Conclusion and Recommended Mitigation Measures</i>	33
6.2	SURFACE WATER MANAGEMENT	34
6.2.1	<i>Existing Environment</i>	34
6.2.2	<i>Assessment of Impacts</i>	34
6.2.3	<i>Summary of Mitigation Measures</i>	35
6.3	GROUNDWATER	36
6.3.1	<i>Existing Environment</i>	36
6.3.2	<i>Assessment of Impacts</i>	37
6.3.3	<i>Summary of Mitigation Measures</i>	37
6.4	NOISE IMPACT ASSESSMENT	37
6.4.1	<i>Existing Environment</i>	37
6.4.2	<i>Assessment of Impacts</i>	37
6.4.3	<i>Summary of Mitigation Measures</i>	38
6.5	AIR QUALITY IMPACT ASSESSMENT	39
6.5.1	<i>Existing Environment</i>	39
6.5.2	<i>Assessment of Impacts</i>	39
6.5.3	<i>Summary of Mitigation Measures</i>	40
6.6	VISUAL IMPACT ASSESSMENT	40
6.7	SOIL & LAND RESOURCES	41
6.8	REHABILITATION	41
6.9	HERITAGE	41
6.9.1	<i>Aboriginal Archaeology</i>	41
6.9.2	<i>European Heritage</i>	42
6.10	OTHER MATTERS	43
7.0	STATEMENT OF COMMITMENTS RELATIVE TO MOD 1	44
7.1	PLANS, DOCUMENTS AND APPROVALS	44
7.2	REVISION OF MANAGEMENT PLANS	44
7.3	FLORA AND FAUNA	44
7.4	SURFACE WATER MANAGEMENT	45
7.5	GROUNDWATER MANAGEMENT	46
7.6	NOISE MANAGEMENT	46
7.7	AIR QUALITY MANAGEMENT	47
7.8	REHABILITATION	48
7.9	HERITAGE	48
7.9.1	<i>Aboriginal Archaeology</i>	48
7.9.2	<i>European Heritage</i>	48
8.0	CONCLUSION	49

APPENDIX A

APPROVED DEVELOPMENT PLANS (MP 09-0175)

APPENDIX B

PROPOSED MODIFICATION TO SITE LAYOUT

APPENDIX C

FLORA & FAUNA ASSESSMENT - KLEINFELDER

APPENDIX D

ENVIRONMENTAL ASPECTS & CONTROLS ASSESSMENT – SLR GLOBAL ENVIRONMENTAL SOLUTIONS

APPENDIX E

CULTURAL HERITAGE ASSESSMENT – KARUAH LOCAL ABORIGINAL LAND COUNCIL

LIST OF FIGURES

Figure 1: Proposed Additional Area of Disturbance (in Pink) and its Relationship to the Approved Quarry.

Figure 2: Proposed Additional Area of Disturbance.

Figure 3: Location Plan Showing Site in a Broad Regional Context.

Figure 4: Aerial Photograph of Site and Surrounds.

Figure 5: Existing & Approved Road Network.

Figure 6: Zoning Plan.

Figure 7: Vegetation Communities, Threatened Species and Habitat Features within the Study Area.

Figure 8: Erosion & Sediment Control Measures for Proposed MOD 1 Additional Disturbance Area.

Figure 9: Erosion & Sediment Control Measures for MOD 1 Additional Disturbance Area.

1.0 Introduction

1.1 PROJECT DETAILS

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PROJECT DETAILS:	
Description of Proposal:	Modification under Section 75W of the Environmental Planning and Assessment Act 1979 to Project Approval 09_0175, dated 17 June 2014. Proposal to increase the approved area of disturbance by 2,500m ² .
Applicant Name:	Karuah East Quarry Pty Limited
Applicant Address:	Karuah East Quarry Pty Limited C/- ADW Johnson Pty Ltd Unit 7, 335 Hillsborough Road WARNERS BAY NSW 2282
Property Description:	Lot 12 DP 1024564 (Karuah East Quarry site). This is the only land affected by the proposed modification. Lot 13 DP1024564 (Karuah East Quarry site). Lot 202 DP1042537 (approved roadworks). Lots 26 and 27 DP1024341 (approved roadworks). Lots 16 and 17 DP 1024564 (approved roadworks).

1.2 BACKGROUND AND ENVIRONMENTAL ASSESSMENT OVERVIEW

On 12 July 2017 a Modification Application (MOD 1) under Section 75W of the *Environmental Planning & Assessment Act 1979* (EP&A Act 1979) was lodged with the NSW Department of Planning and Environment (NSW DPE). The application was lodged by ADW Johnson on behalf of the proponent Karuah East Quarry Pty Ltd to modify Project Approval 09_0175 for the Karuah East Quarry.

MOD 1 proposes to amend the existing Project Approval to nominally expand the area of disturbance of the approved Karuah East Quarry. Following detailed quarry plant design, it has been identified that a minor extension to the approved disturbance area will allow for improved operational efficiencies associated with plant infrastructure within the quarry by reducing internal truck movements, allowing for better vehicle manoeuvrability and improving site security.

MOD 1 is minor in nature and seeks a nominal expansion to the approved area of disturbance (31.63ha) by an additional 2,500m² as shown on the plan provided within **Appendix B** of this document. The resulting new total area of disturbance of the Karuah East Quarry is 31.88ha. The proposed modification represents less than a 1% increase in disturbance area when compared with the existing approval.

The Project Approval as it relates to extraction rates, quarrying, processing, operational activity and rehabilitation will not be affected by the proposed amendment.

Following review of the documentation lodged as part of the MOD 1 application, NSW DPE assessment staff has confirmed that additional information relevant to the proposed additional disturbance area is required to be lodged to allow assessment of the application to progress. This is summarised as follows:

- Flora and fauna assessment and consideration of biodiversity offsets;
- Surface water management;
- Noise impact assessment;
- Air quality impact assessment;
- Visual impact assessment; and
- Heritage (Aboriginal Archaeology and European Heritage).

This Environmental Assessment (EA) Report addresses each of the above matters.

1.3 DEVELOPMENT HISTORY

Project Approval 09_0175 was granted for the Karuah East Quarry Project on 17 June 2014 under the provisions of Section 75J of the *EP&A Act 1979*.

Key features of the approval include:

- Quarrying operation is permitted on the site until 31 December 2034;
- The extraction (excluding overburden), processing and transport of quarry products is limited to 1.5 million tonnes in any calendar year;
- Hours of operation are specified in Condition 7 and apply to quarrying operations, construction activities and maintenance activities; and
- Conditions apply to manage / mitigate potential impacts associated with a range of environmental conditions including noise; blasting; air quality; soil and water; transport; biodiversity; heritage; emergency and hazards management and waste.

Construction works are well advanced.

1.4 STRUCTURE OF REPORT

This Environmental Assessment Report has been prepared to address the specific items requested by NSW DPE assessment staff. The format is as follows:

- Chapter 1 provides an introduction to this Environmental Assessment and the MOD 1 documentation previously lodged with the NSW DPE on 12 July 2017;
- Chapter 2 details key consultation undertaken with:
 - NSW DPE assessment staff since lodgement of MOD 1 on 12 July 2017 to confirm EA inputs; and
 - The Community Consultative Committee (CCC) for the Karuah East Quarry established in accordance with the Project Approval;
- Chapter 3 details the proposed development;
- Chapter 4 provides a site description;
- Chapter 5 considers relevant planning legislation;

- Chapter 6 undertakes an environmental assessment of the proposed modification, in particular:
 - Chapter 6.1 flora and fauna assessment and consideration of biodiversity offsets;
 - Chapter 6.2 surface water assessment;
 - Chapter 6.3 assessment of groundwater;
 - Chapter 6.4 noise impact assessment;
 - Chapter 6.5 air quality impact assessment;
 - Chapter 6.6 visual impact assessment;
 - Chapter 6.7 assessment of soil and land resources;
 - Chapter 6.8 assessment of rehabilitation;
 - Chapter 6.9 heritage impact assessment; and
 - Chapter 6.10 other matters not relevant to the proposed modification.
- Chapter 7 provides a Statement of Commitments specifically relevant to the proposed modification; and
- Chapter 8 provides a conclusion.

2.0 Consultation

2.1 NSW DEPARTMENT OF PLANNING & ENVIRONMENT

Following lodgement of MOD 1 on 12 July 2017, the following key matters have been discussed with NSW DPE assessment staff:

Table 1: Key Matters Discussed

Item	Comment
Enquiry should be made with the Federal Department of the Environment and Energy (DoEE) to determine if a modification to EPBC Approval 2014/7282 is necessary and if so if this needs to be assessed concurrently with the MOD 1 application.	<p>The proponent is fully aware of its obligations under EPBC Approval 2014/7282 and has maintained contact with DoEE staff during the construction phase of the Karuah East Quarry to date. As requested, contact has been made with the DoEE (post approvals department) via the proponent's project ecologist Kleinfelder to determine the process. At the time of preparation of this EA report the following has been confirmed:</p> <ul style="list-style-type: none"> The DoEE will review seasonal flora survey results and advise if a modification to the EPBC approval is necessary. Given the minor nature of the proposal, requirement for a modification is unlikely. If a modification is necessary, there is no statutory requirement that MOD 1 be assessed concurrently with a proposed amendment to EPBC approval 2014/7282. <p>The proponent is aware that if a modification to EPBC approval 2014/7282 is necessary, that no works are to be undertaken within the area subject to the modification proposal until EPBC approval has been obtained. It is the proponent's intention to progress this matter separately to the MOD 1 assessment by NSW DPE.</p>
Landowners consent is required to be provided for lands owned by the proponent as well as lands owned by RMS, given that the RMS lands were contained in the original Project Approval.	<p>The lands owned by RMS contain the Blue Rock Close access road and are well separated from the area subject to the proposed modification. Notwithstanding, as directed, land owners consent for all of the lands subject to the Karuah East Quarry Project Approval will be provided to the NSW DPE under separate cover, including:</p> <ul style="list-style-type: none"> Lot 12 DP 1024564 – Landowner: Branch Land Pty Ltd (note that this is the only parcel of land affected by MOD 1); Lot 13 DP 1024564 – Landowners: Hilton Ross Grugeon and Beverly Clare Grugeon; and Lot 202 DP 1042537; Lot 26 DP 1024341; Lot 27 DP 1024341; Lot 16 DP 1024564; and Lot 17 DP 1024564 – Landowner NSW RMS.

Modifications of this scale do not require the issue of Secretary's Environmental Assessment Requirements (SEARs).	As no SEARs were required to be issued, EA inputs have been confirmed in consultation with NSW DPE staff (refer to Section 1.2 of this report).
Flora and fauna assessment including consideration of biodiversity offsets required relevant to proposed additional disturbance area.	Refer to Section 6.1 of this EA report.
Surface water assessment required relevant to proposed additional disturbance area.	Refer to Section 6.2 of this EA report.
Noise impact assessment relevant to proposed additional disturbance area.	Refer to Section 6.4 of this EA report.
Air quality impact assessment required relevant to proposed additional disturbance area.	Refer to Section 6.5 of this EA report.
Visual impact assessment required relevant to proposed additional disturbance area.	Refer to Section 6.6 of this EA report.
Aboriginal archaeological assessment and European heritage assessment relevant to proposed additional disturbance area.	Refer to Section 6.9 of this EA report.

2.2 KARUAH EAST QUARRY COMMUNITY CONSULTATIVE COMMITTEE

The Community Consultative Committee (CCC) established for the Karuah East Quarry (required by Condition 6 of Schedule 5 of the Project Approval) were provided with a brief on the proposed modification by the proponent at CCC meetings held on the 14th August 2017 and 4th December 2017.

The briefings included:

- Details of the proposal;
- Justification for the proposal;
- Confirmation of the EA inputs; and
- Confirmation that the NSW DPE advised that the issue of SEARs was not necessary given the minor nature of the proposal. EA inputs were determined in consultation with NSW DPE staff.

No issues were raised by CCC members, other than clarification was sought regarding exhibition and consultation with other authorities.

The proponent will continue to inform the CCC of MOD 1 as the application progresses.

3.0 Description of Proposal

The details of the proposed amendment remain entirely the same as proposed in the Section 75W Modification application (MOD 1) documentation submitted to the NSW DPE on 12 July 2017.

The proposed amendment is minor in nature and seeks consent to expand the approved area of disturbance (31.63ha) by an additional 2,500m², which will result in the removal of existing vegetation adjacent to the quarry crushing plant. The resulting new total area of disturbance of the Karuah East Quarry will be 31.88ha. The proposal represents less than a 1% increase in disturbance area when compared with existing project approval.

The additional area will allow for substantially improved vehicle maneuvering associated with the plant infrastructure and will reduce the length of internal vehicle movements required for the operation of the quarry which will result in improved operational efficiencies. The use of the additional disturbance area will also allow for potential dust and noise generated by the haul trucks to be refined in a smaller area of the quarry site, further separated from previously identified receivers to the east and south. This opportunity was identified during detailed design of the quarry plant following Project Approval.

Water management and erosion & sediment control measures will be implemented to direct drainage of water from the proposed MOD 1 additional disturbance area into the water management system of the approved Karuah East Quarry. The additional disturbance area will be gravel sealed to be consistent with other internal roads and disturbance areas within the approved quarry.

The proposed additional area of disturbance is shown in pink in **Figures 1** and **2** below and within **Appendix B**.

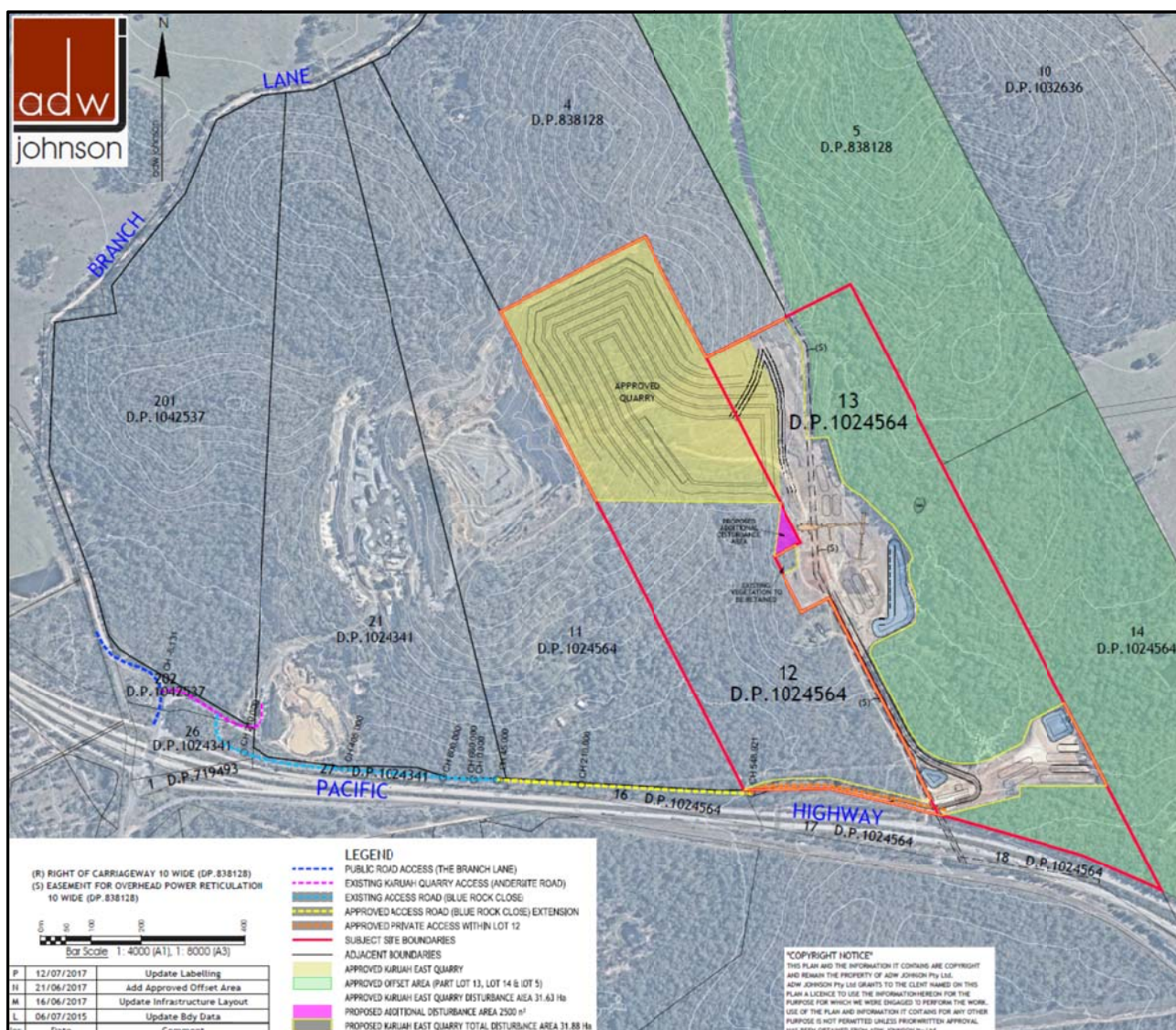


Figure 1: Proposed Additional Area of Disturbance (in Pink) and its Relationship to the Approved Quarry.



Figure 2: Proposed Additional Area of Disturbance.

3.1 ALTERNATIVES TO THE PROPOSED MODIFICATION

3.1.1 Alternate Location of Additional Disturbance Area

The minor additional area of disturbance proposed has been identified through the detailed quarry plant design process, which sited the plant in the most appropriate position within the approved disturbance area relevant to a range of considerations including topography, quarry operational functionality and civil design considerations.

Construction of the quarry plant is well advanced.

Noting the siting of the quarry plant, the only available option to locate the additional disturbance area to achieve improvements in operational efficiency relevant to internal vehicle movements around the plant is to the west as proposed (Refer to **Figures 1 and 2** above). Areas to the north (quarry pit) and east (quarry plant) of the plant are already approved for disturbance under the existing project approval and land to the south is inappropriately located (it is too far away from the plant) to achieve the identified operational efficiencies as well as being already approved for disturbance.

3.1.2 Do Nothing Option

The impact of not proceeding with the proposed modification would result in the Karuah East Quarry operating in a less efficient manner than would be possible if the proposed minor additional disturbance area was able to be utilised. Opportunity for improved operational efficiencies associated with reduced internal truck movements and better internal vehicle manoeuvrability would be lost.

4.0 Site Description & Location

4.1 PROPERTY DESCRIPTION & LAND OWNERSHIP

Key details relevant to the land subject to Project Approval 09_0175 is described in the table below. The only parcel of land that is affected by the MOD 1 application is Lot 12 DP 1024564.

Table 2: Key Project Details

Description of Subject Land				
	Lot and Deposited Plan	Address	Total Site Area (Approximate)*	Land Owner
Quarry and Operations	Lot 12 DP 1024564	5887 Pacific Highway Karuah	36.4ha	Branch Land Pty Ltd
	Lot 13 DP 1024564	5893 Pacific Highway Karuah	37.91ha	Hilton Ross Grugeon and Beverley Clare Grugeon
Quarry Access	Lot 202 DP 1042537	N/A	1.289ha	Roads and Maritime Services
	Lot 26 DP 1024341	N/A	2.743ha	Roads and Maritime Services
	Lot 27 DP 1024341	N/A	1.195ha	Roads and Maritime Services
	Lot 16 DP 1024564	N/A	2.21ha	Roads and Maritime Services
	Lot 17 DP 1024564	N/A	3.597ha	Roads and Maritime Services

* Areas have been derived from registered Deposited Plan information.

Landowners consent for this modification application will be issued to the NSW DPE under separate cover.

4.2 THE LOCALITY & SITE

The Karuah East Quarry is located north east of Raymond Terrace, south east of Dungog, south-west of Bulahdelah and west of Hawks Nest. Travel time to the site from Newcastle via the Pacific Highway is approximately 45 minutes.

The operational area of the approved quarry is described as Lots 12 and 13 DP 1024564 and is located off the Pacific Highway, Karuah. The Karuah East Quarry is accessed via an extension of Blue Rock Close which was approved as part of Project Approval 09_0175 (construction recently completed).

The proposed additional disturbance area subject to MOD 1 is located to the west of the approved infrastructure plant and south of the approved quarry pit (refer to **Figures 1 and 2**).

The site is well located relative to the Pacific Highway, providing excellent connectivity to Newcastle, and the broader Hunter and Mid North Coast Regions. The Karuah East Quarry

site is separated from substantial residential areas, and is located adjacent to an existing quarry operation (the Karuah Quarry). The Karuah Nature Reserve is located to the south west of the site on the opposite side of the Pacific Highway. **Figures 3 and 4** show the location of the site.

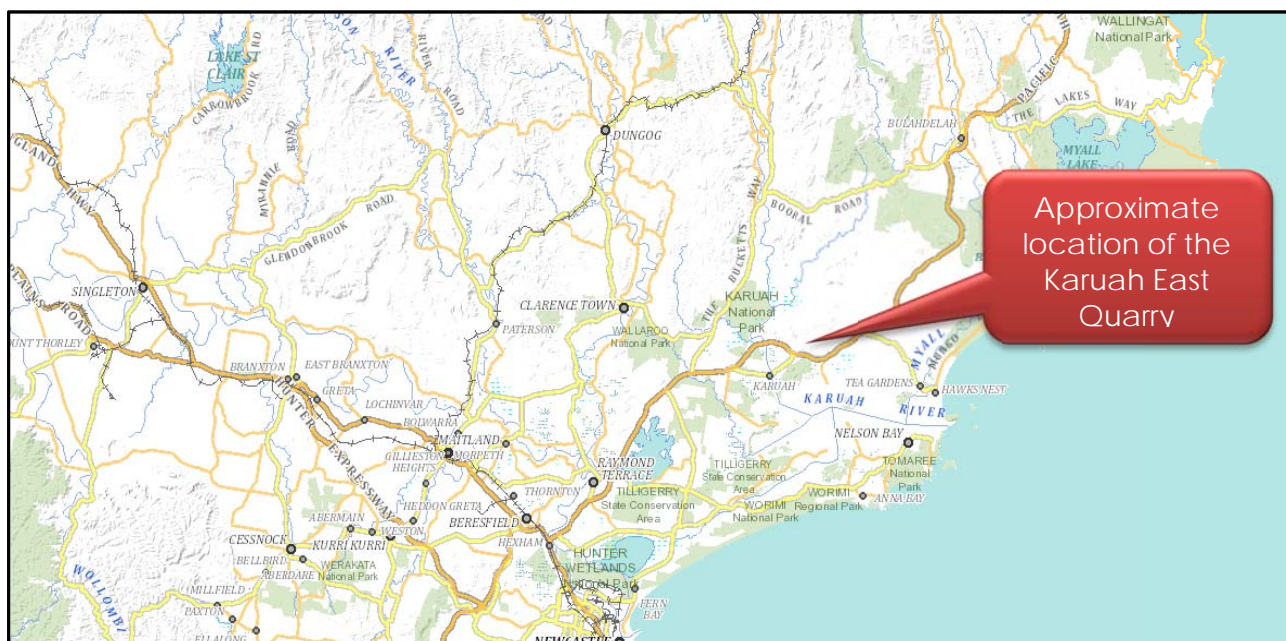


Figure 3: Location Plan Showing Site in a Broad Regional Context.

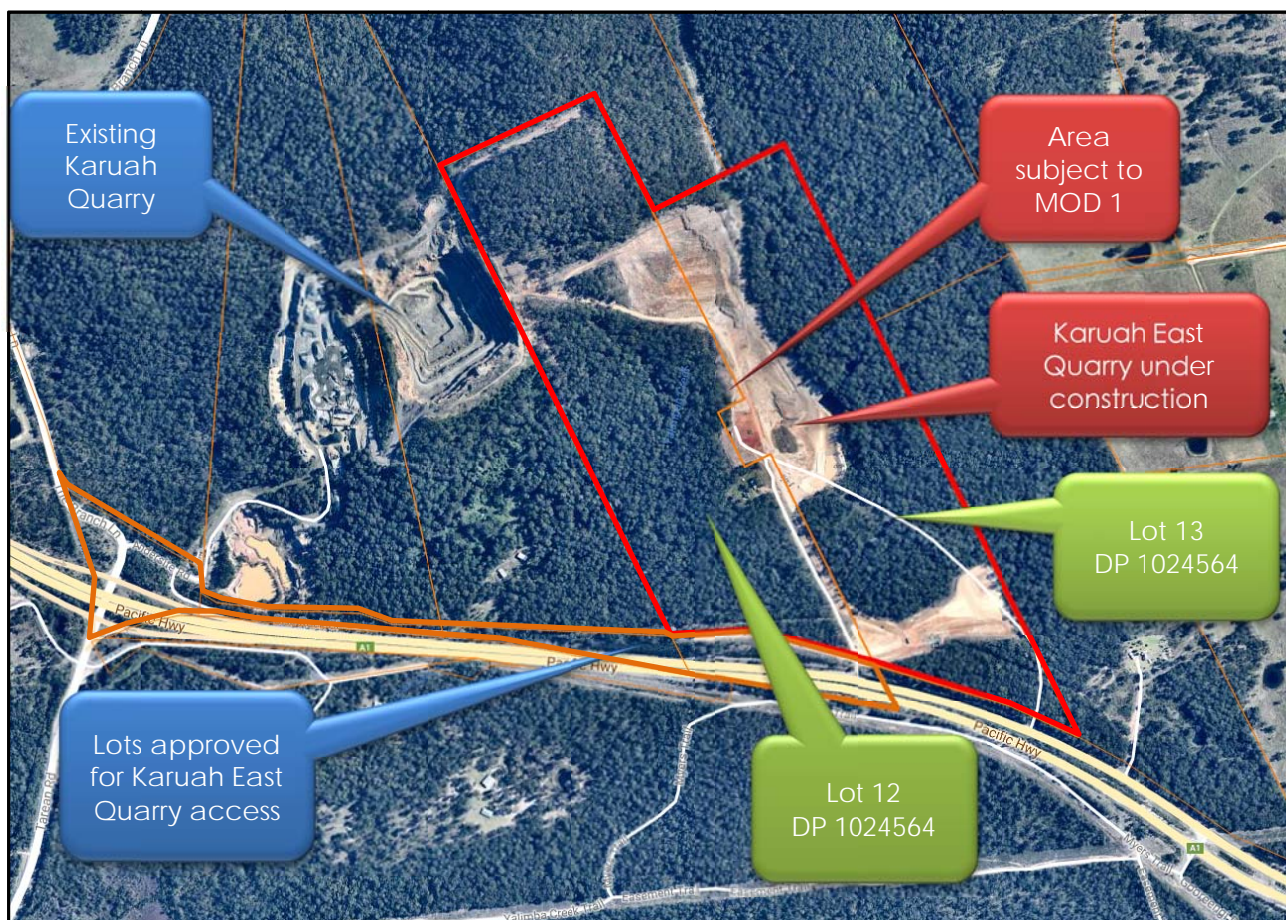


Figure 4: Aerial Photograph of Site and Surrounds.

4.3 EXISTING SITE IMPROVEMENTS

Construction works for the approved Karuah East Quarry are well advanced in accordance with Project Approval 09_0175. This can be seen in the aerial image shown in Figure 4.

Areas of the site not affected by the project approval remain predominately well vegetated, comprising uncleared bushland.

An existing dwelling is located on Lot 12, and is accessed via the quarry access road.

4.4 ACCESS, ROAD NETWORK & TRAFFIC

Access to the Karuah East Quarry site is provided from the approved quarry access, which comprises an extension to Blue Rock Close, which runs parallel with the Pacific Highway.

Blue Rock Close is a sealed road that extends off Andersite Road in an easterly direction. Andersite Road is a sealed road that provides access to the existing Karuah Quarry off the Branch Lane.

Branch Lane to the north of the Andersite Road intersection reverts to a gravel road. Branch Lane links at grade to the Old Pacific Highway corridor into the Karuah Township to the south of the Karuah Interchange.

The existing and approved access road network is shown in Figure 5.

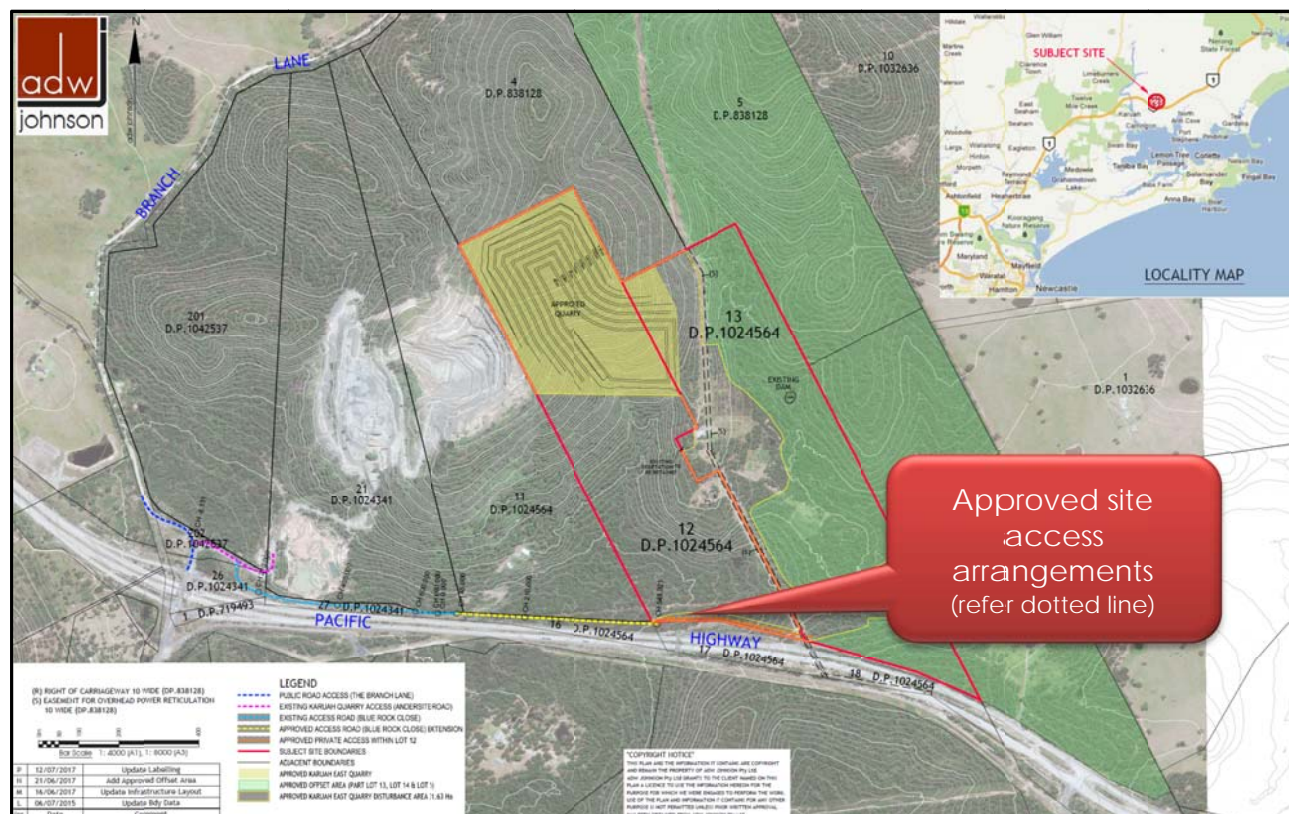


Figure 5: Existing & Approved Road Network.

The proposal does not involve any changes to access or the approved Karuah East Quarry extraction rate and accordingly the proposal will have no impact on traffic or access.

4.5 TOPOGRAPHY, DRAINAGE & FLOODING

The approved Karuah East Quarry site and proposed area of additional disturbance is characterised by a mostly steep landscape. The majority of this area lies within the Yalimbah Creek catchment draining to the south west, with only a small portion of the area draining to the east into the stormwater management system of the Karuah East Quarry.

Surface water management is discussed in Section 6.2 of this EA Report and **Appendix D**.

The site is not affected by flooding.

4.6 SOILS & GEOTECHNICAL

The geology and soils of the locality have previously undergone assessment to confirm suitability for quarrying.

A Soil Survey and Land Resource Assessment and Groundwater Impact Assessment formed part of the package of information supplied and approved as part of the Project Approval (09_0175). The assessments confirmed the suitability of the Karuah East Quarry site for quarrying activities and that the site is not affected by potential acid sulfate soils.

It is important to note that the proposed additional disturbance area is small in size (ie. less than 1% of the total approved disturbance area) and will not incorporate an extension to the quarry pit itself, but rather an area for improved internal vehicle maneuvering adjacent to the quarry plant. The land subject to the MOD 1 application is acceptable for the purpose proposed and this is confirmed in Sections 6.3 and 6.7 of this EA.

4.7 BUSHFIRE

The area subject to MOD 1 is mapped as bushfire prone land on Mid Coast Council's mapping. The proposed development is not identified as being a '*special fire protection purpose*' as defined by the *Rural Fires Act 1997*.

The proposed additional clearing associated with MOD 1 is likely to provide additional mitigation against bushfire threat to the approved Karuah East Quarry development site.

A Bushfire Safety Authority is not required having regard to the operation of Part 3A of the EP&A Act 1979.

4.8 EASEMENTS

An easement for overhead power reticulation extends through the approved Karuah East Quarry site (on Lot 12 and 13 DP 1024564). This easement does not extend through or impact on the proposed additional area of disturbance.

5.0 Planning Context

Compliance with all relevant legislation as identified in the approved Environmental Assessment Report (31 January 2013) and Preferred Project Report (30 July 2013) remains applicable to the proposed area of additional disturbance.

Additional comment is provided below where appropriate.

5.1 ENVIRONMENT PROTECTION & BIODIVERSITY CONSERVATION ACT 1999

EPBC Approval 2014/7282 for the Karuah East Quarry was granted on 20 March 2015.

The proponent is fully aware of its obligations under EPBC Approval 2014/7282 and has maintained contact with Federal Department of Environment and Energy (DoEE) staff during the construction phase of the Karuah East Quarry to date.

Contact has been made with the DoEE (post approvals department) via the proponent's project ecologist Kleinfelder to determine if an amendment to the EPBC approval is necessary. Kleinfelder have formed the position that the proposed additional disturbance area of 2,500m² will not have a significant impact on any Matter of National Environmental Significance (MNES) and accordingly no further action is needed.

At the time of preparation of this EA Report the following has been confirmed:

- The DoEE will review seasonal flora survey results and advise if a modification to the EPBC approval is necessary. Given the minor nature of the proposal, it is considered unlikely that a modification will be necessary; and
- If a modification is necessary, there is no statutory requirement that MOD 1 be assessed concurrently with a proposed amendment to EPBC approval 2014/7282.

The proponent is aware that if a modification to EPBC approval 2014/7282 is necessary, that no works are to be undertaken within the area subject to the modification proposal until EPBC approval has been obtained. If a modification to EPBC approval 2014/7282 is necessary, it is the proponent's intention to progress this matter separately to the MOD 1 assessment by NSW DPE.

5.2 ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979

This application to extend the development footprint by 2,500m² is lodged in accordance with Section 75W of the EP&A Act 1979. Section 75W of the EP&A Act 1979 remains applicable under the transitional provisions identified in Schedule 6A of the EP&A Act 1979.

On 1st October 2011, Part 3A of the EP&A Act 1979 was repealed by the *Environmental Planning & Assessment (Part 3A Repeal) Act 2011 No. 22*. Despite this, Part 3A continues to apply to the development based on the transitional provisions identified in Schedule 6A of the EP&A Act 1979 as follows:

'Schedule 6A Transitional Arrangements – Repeal of Part 3A'

'2 Transitional Part 3A projects'

(1) The following are, subject to this Schedule, transitional Part 3A projects:

Section 75W Application – Karuah East Quarry – MP 09_0175

Minor Increase to Disturbance Area

(Ref: N:\11819\Worddocs\Report\75W Amendment No. 1 July 2017\Section 75W EA Report January 2018\75W EA Report 180118.docx)

(a) an approved project (whether approved before or after the repeal of Part 3A),

Clause 3 of Schedule 6A of the EP&A Act 1979 states that the provisions of any State Environmental Planning Policy (SEPP) or other instrument implemented under Part 3A continue to apply in respect of a transitional Part 3A project:

'3 Continuation of Part 3A—transitional Part 3A projects

Part 3A of this Act (as in force immediately before the repeal of that Part and as modified under this Schedule after that repeal) continues to apply to and in respect of a transitional Part 3A project'

(2) For that purpose:

(a) any State environmental planning policy or other instrument made under or for the purposes of Part 3A, as in force on the repeal of that Part and as amended after that repeal, continues to apply to and in respect of a transitional Part 3A project,'

Based on the above legislation, it is established that MOD 1 (minor increase to the approved disturbance area of the approved Karuah East Quarry) can be assessed as a Section 75W application. Section 75W of the EP&A Act is addressed further below.

75W Modification of Minister's approval

In this section:

Minister's approval means an approval to carry out a project under this Part, and includes an approval of a concept plan.

modification of approval means changing the terms of a Minister's approval, including:

(a) revoking or varying a condition of the approval or imposing an additional condition of the approval, and

(b) changing the terms of any determination made by the Minister under Division 3 in connection with the approval.

(2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.

(3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.

(4) The Minister may modify the approval (with or without conditions) or disapprove of the modification.

(5) The proponent of a project to which section 75K applies who is dissatisfied with the determination of a request under this section with respect to the project (or with the failure of the Minister to determine the request within 40 days after it is made)

may, within the time prescribed by the regulations, appeal to the Court. The Court may determine any such appeal.

(6) Subsection (5) does not apply to a request to modify:

- (a) an approval granted by or as directed by the Court on appeal, or*
- (b) a determination made by the Minister under Division 3 in connection with the approval of a concept plan.*

(7) This section does not limit the circumstances in which the Minister may modify a determination made by the Minister under Division 3 in connection with the approval of a concept plan

No provisions of Section 75W prohibit or restrict the proposed modification to the Project Approval. It is considered that MOD 1 remains consistent with this section of the EP&A Act 1979.

5.3 WATER MANAGEMENT ACT 2000

The *Water Management Act 2000* (WM Act 2000) contains provisions for the licensing of water capture and use.

MOD 1 does not propose the construction of any new dams, nor will it require any modification to any existing / approved dams.

The currently Karuah East Quarry project did not require any separate approvals under the provisions of the WM Act 2000. It is anticipated that MOD 1 will not require any additional approval under this act.

5.4 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

An Environmental Protection License (EPL) (No. 20611) has been obtained for the Karuah East Quarry.

The proposed amendment will not impact on the approved quarry operations or extraction volumes.

Any variation to the EPL (if required) will be undertaken in consultation with the NSW Environment Protection Authority.

5.5 NATIONAL PARKS & WILDLIFE ACT 1974

The primary state legislation relating to Aboriginal cultural heritage in NSW is the *National Parks and Wildlife Act 1974*.

A Cultural Heritage Assessment relevant to the proposed additional disturbance area has been prepared as part of this EA, refer to Section 6.9 and **Appendix E**.

5.6 NSW HERITAGE ACT 1977

Historical archaeological relics, buildings, structures, archaeological deposits and features are protected under the *Heritage Act 1977* and may be identified on the State Heritage Register (SHR) or by an active Interim Heritage Order.

A Cultural Heritage Assessment was completed by RPS HSO and was submitted as part of the approved EA for the Karuah East Quarry. The area subject to MOD 1 is comprised of bushland and is free from any structures. No additional impacts are envisaged as a result of the proposed additional disturbance area. This matter is addressed further in Section 6.9 of this EA.

5.7 BIODIVERSITY CONSERVATION ACT 2016 & BIODIVERSITY CONSERVATION (SAVINGS & TRANSITIONAL) REGULATION 2017

The *Biodiversity Conservation Act 2016* (BC Act 2016) commenced on 25 August 2017 and replaced the *Threatened Species Conservation Act 1995* (TSC Act 1995). The purpose of the BC Act 2016 is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

Notwithstanding the above, the TSC Act 1995 continues to apply to MOD 1 noting the following provisions within the *Biodiversity Conservation (Savings & Transitional) Regulation 2017*:

Part 7 Provisions relating to biodiversity assessment and approvals under Planning Act

27 Definitions: Part 7

Pending or interim planning application means any of the following:

(a) *An application for planning approval (or for the modification of a planning approval) made before the commencement of the new Act but not finally determined immediately before that commencement,*

28 Former planning provisions continue to apply to pending or interim planning applications

(1) *The former planning provisions continue to apply (and Part 7 of the new Act does not apply) to the determination of a pending or interim planning application*

Noting that MOD 1 was lodged with the NSW DPE on 12 July 2017, MOD 1 is a 'pending or interim planning application' required to be assessed under the provisions of the TSC Act 1995.

5.8 THREATENED SPECIES CONSERVATION ACT 1995

The now repealed *Threatened Species Conservation Act 1995* is applicable to this proposal.

A Flora and Fauna Assessment relevant to the proposed additional disturbance area has been completed as part of this Environmental Assessment (refer to **Appendix C**). This matter is discussed further in Section 6.1 below.

5.9 NATIONAL GREENHOUSE & ENERGY REPORTING ACT

The *National Greenhouse and Energy Reporting Act* (the NGER Act) established a mandatory reporting system for company greenhouse gas emissions and energy production and consumption.

MOD 1 will not alter the approved operational procedures and practices for the quarry, other than to support a reduction in internal site truck movements through the provision of more efficient turning areas.

5.10 STATE ENVIRONMENTAL PLANNING POLICIES

The assessment of relevant State Environmental Planning Policies, carried out as part of the approved EA (January 2013) remain applicable to the proposed amendment.

5.10.1 SEPP (Major Development) 2005

SEPP (Major Development) 2005, in its former currency, defined certain developments that were major projects under Part 3A of the EP&A Act 1979 and determined by the Minister for Planning. The SEPP also listed State significant sites.

The Karuah East Quarry was determined to be a 'Major Project' to which the Major Projects SEPP (and Part 3A of the Act) applied under Schedule 1 of the SEPP. The Karuah East Quarry was approved by the NSW Planning Assessment Commission, as delegate for the Minister for Planning, on 17 June 2014.

Given the minor nature of MOD 1, SEPP (Major Development) 2005 is not particularly relevant to the proposal.

5.10.2 SEPP (Infrastructure) 2007

SEPP (Infrastructure) 2007 (ISEPP) provides a consistent planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. The ISEPP supports greater flexibility in the location of infrastructure and services along with improved regulatory certainty and efficiency.

Division 17 – Roads and Traffic, Clause 104 'Traffic Generating Development' and Schedule 3 of the ISEPP identify traffic generating development that requires referral to RMS. MOD 1 does not change approved quarrying, extraction rates, processing or operational activity other than to improve internal vehicle manoeuvrability adjacent to the quarry plant. Accordingly, MOD 1 is not categorised as traffic generating development that requires referral to NSW RMS.

5.10.3 SEPP (Mining, Petroleum Production and Extractive Industries) 2007

SEPP (Mining, Petroleum Production and Extractive Industries) 2007 (SEPP MPPEI) aims to provide for the proper management and development of mineral, petroleum and extractive material resources for the social and economic welfare of the State. It establishes appropriate planning controls to encourage ecologically sustainable development.

SEPP MPPEI was considered during the assessment process for the Karuah East Quarry. In addition to providing permissibility for the Karuah East Quarry (under clause 7(3)(a)) and extinguishing any LEP provisions (Clause 8), Part 3 of SEPP MPPEI provided that additional matters be considered by the consent authority relating to:

- Compatibility with other land uses;
- Compatibility with mining, petroleum production or extractive industry;
- Natural resource management and environmental management;
- Resource recovery;
- Transport; and
- Rehabilitation.

These matters were satisfactory addressed by the EA Report (January 2013) and Preferred Project Report (July 2013) for the Karuah East Quarry. Given the minor nature MOD 1 (ie. less than 1% increase in total disturbance area), it is considered that the proposal is acceptable in terms of each of the above considerations.

5.10.4 SEPP 14 (Coastal Wetlands)

SEPP 14 (Coastal Wetlands) (SEPP CW) ensures coastal wetlands are preserved and protected for environmental and economic reasons. The policy applies to local government areas outside the Sydney metropolitan area that front the Pacific Ocean. The policy identifies over 1300 wetlands of high natural value from Tweed Heads to Broken Bay and from Wollongong to Cape Howe. Land clearing, levee construction, drainage work or filling may only be carried out within these wetlands with the consent of the local Council and the agreement of the Secretary of the NSW DPE.

There is one SEPP 14 “Coastal Wetland” comprising an upper arm of the Karuah River situated to the south west approximately 1.5km from the proposed modification site.

A Surface Water Impact Assessment relevant to MOD 1 has been prepared by SLR (**Appendix D**) and is discussed in detail in Section 6.2 of this EA. Implementation of sediment and water management strategies during clearing, construction and operational phases will appropriately mitigate any potential impacts.

5.10.5 SEPP 44 (Koala Habitat Protection)

SEPP 44 (Koala Habitat Protection) (SEPP 44) aims 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.

The Flora and Fauna Impact Assessment prepared by Kleinfelder (**Appendix C**) gives consideration to SEPP 44. This matter is addressed in Section 6.1 below.

5.10.6 SEPP 33 (Hazardous & Offensive Development)

SEPP 33 (Hazardous & Offensive Development) (SEPP 33) provides definitions for ‘hazardous industry’, ‘hazardous storage establishment’, ‘offensive industry’ and ‘offensive storage establishment’. The definitions apply to all planning instruments, existing and future. The definitions enable decisions to approve or refuse a development to be based on the merit of a proposal. SEPP 33 also requires specified matters to be considered for proposals that are ‘potentially hazardous’ or ‘potentially offensive’ as defined in SEPP 33.

Storage of minor amounts of fuel and oil were addressed as part of the existing project approval. MOD 1 is for a nominal increase in quarry disturbance area and does not result in the storage of any additional fuels or oils.

Accordingly, it is considered that MOD 1 does not trigger the provisions of SEPP 33.

5.11 HUNTER REGIONAL PLAN 2036

The NSW Government has developed the Hunter Regional Plan 2036 as an overarching framework to guide land use planning priorities and infrastructure funding decisions in the Hunter region over the next 20 years.

The Plan sets priorities and provides a direction for regional planning decisions. It focuses on new housing and jobs, and targets growth in strategic centres and renewal corridors close to transport to deliver social and economic benefits. It sets in place line-of-sight land use planning for the region, regional districts like the Greater Newcastle metropolitan area and each Council area.

The vision of the Hunter Regional Plan 2036 is for the Hunter to be the leading regional economy in Australia with a vibrant new metropolitan city at its heart. To achieve this vision, the NSW Government has set the following regionally focused goals:

- The leading regional economy in Australia;
- A biodiversity-rich natural environment;
- Thriving communities; and
- Greater housing choice and jobs.

Whilst very minor in nature, MOD 1 is consistent with the Hunter Regional Plan, in particular noting the following:

- Relevant to the Mid Coast area, the plan promotes the growth of industries that can leverage accessibility provided by the Pacific Highway (Goal 1, Direction 6). MOD 1 is entirely in keeping with this objective noting that it will improve the operational efficiency of the Karuah East Quarry, which will capitalise on excellent access available from the Pacific Highway;
- The minor ecological impacts of the proposal can be mitigated by the long term protection and enhancement of vegetation within an established Biodiversity Offset site;
- The proposal will improve the efficiency of the Karuah East Quarry, which in turn will support its long term viability and local employees of the quarry; and
- The Karuah East Quarry will extract a valuable hard rock resource and make it available to the construction industry for use in significant infrastructure projects within the Hunter Region, for example motorway upgrades as identified within Goal 1 Direction 4 of the plan. MOD 1 will improve the operational efficiency of the Karuah East Quarry and will therefore support this objective of the regional plan.

5.12 LOCAL ENVIRONMENTAL PLANS

5.12.1 Great Lakes Local Environmental Plan 1996 (superseded)

The now superseded Great Lakes Local Environmental Plan 1996 (GLLEP 1996) was applicable at the time of lodgement of the project application, under which, the subject land was zoned 1(a) Rural zone.

Permissibility

The Karuah East Quarry was defined as an '*extractive industry*' under the GLLEP 1996. An '*extractive industry*' was permissible with consent within 1(a) Rural zone.

5.12.2 Great Lakes Local Environmental Plan 2014

The Great Lakes Local Environmental Plan 2014 (GLLEP 2014) replaced the now superseded GLLEP 1996 and is applicable to the site.

The site is zoned RU2 Rural Landscape under the GLLEP 2014. An extract of the zoning plan is shown in **Figure 6**.

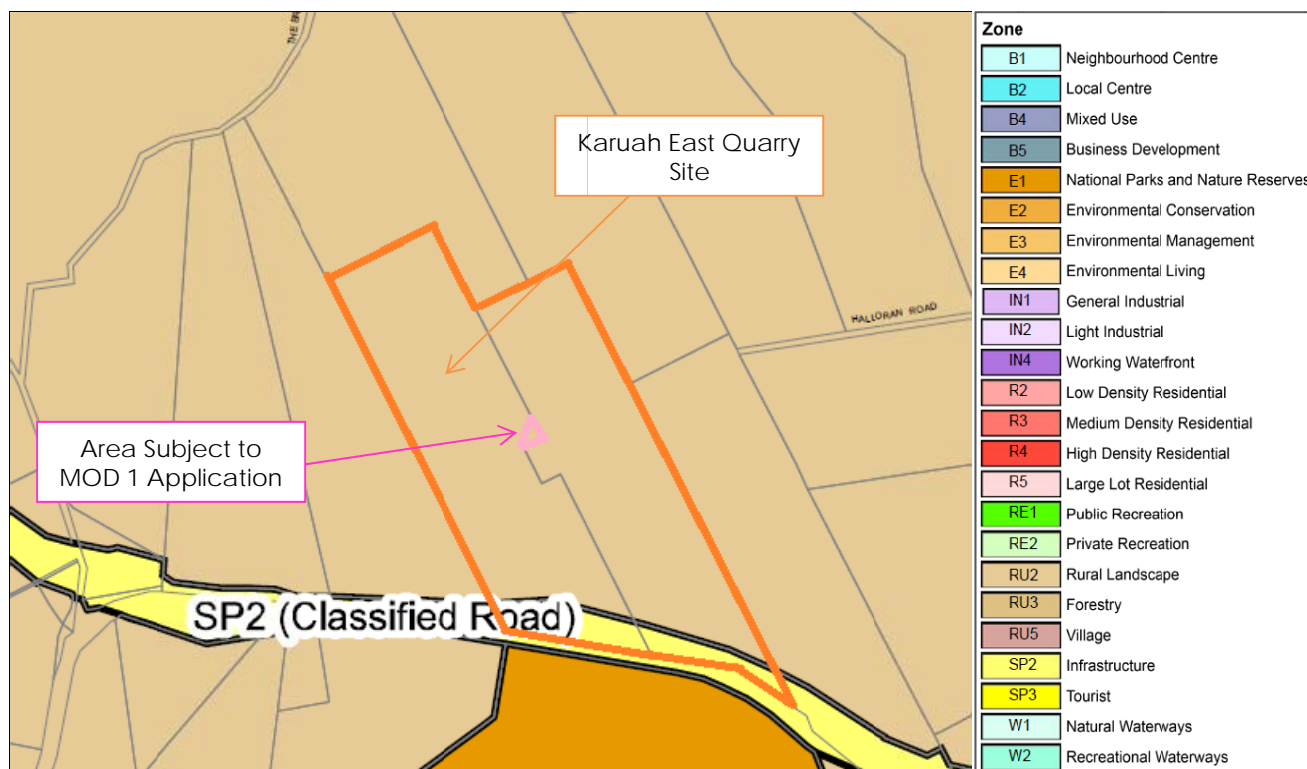


Figure 6: Zoning Plan.

Permissibility

The proposal forms part of an '*extractive industry*' under the GLLEP 2014. An extractive industry is defined below.

extractive industry means the winning or removal of extractive materials (otherwise than from a mine) by methods such as excavating, dredging, tunnelling or quarrying, including the storing, stockpiling or processing of extractive materials by methods such as recycling, washing, crushing, sawing or separating, but does not include turf farming.

Within Zone RU2 Rural Landscape, an extractive industry land use is permissible with consent.

6.0 Environmental Assessment of MOD 1

This section provides an assessment of the key environmental issues associated with proposed MOD 1.

6.1 FLORA & FAUNA

6.1.1 Introduction & Methodology

A Flora and Fauna Impact Assessment has been prepared by Kleinfelder to accompany the MOD 1 application. The assessment is provided in full in **Appendix C**.

The methodology of the assessment included a review of the project background and existing data, a detailed legislative review and targeted field surveys undertaken in accordance with the 'NSW Guide to Surveying Threatened Plants' (OEH, 2016), 'NSW Guide to Surveying Threatened Species' (OEH, 2016) and 'Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (DEC, 2004). The field surveys were conducted on 26 July 2017, 11 September 2017 and 10 October 2017.

The assessment also considered the surplus of biodiversity offset credits within the Biodiversity Offset Area established under the Project Approval (09_0175) and EPBC Approval (2014/7282) relevant to the offset requirements generated by MOD 1.

6.1.2 Results & Impact Assessment

Flora

A total of 35 flora species were recorded during field surveys. One (1) of the species recorded, *tetradlea juncea* (Black – eyed Susan), is listed as vulnerable under both the TSC Act 1995 and the EPBC Act 1999.

No other threatened flora species were identified within the proposed 2,500m² area of additional disturbance. One (1) threatened flora species, *asperula asthenes* (Trailing Woodruff) has previously been identified downslope of the MOD 1 site (approximately 75m). This species was not deemed to be potentially affected by the proposed modification, as stormwater management and erosion and sedimentation controls will be implemented to best practice standards.

One exotic species was detected in the study area, *Lantana camara* (lantana).

Tetradlea Juncea (Black Eyed Susan)

A total of 13 *tetradlea juncea* were detected within the area affected by MOD 1 and will be removed by the proposal. A further 16 individuals were detected adjacent to the MOD 1 site, within a 50m buffer, which will not be removed but may be subject to potential indirect impacts (refer to **Figure 7** below).

MOD 1 will result in the removal of 2,500m² of habitat for *tetradlea juncea*. The *tetradlea juncea* individuals within the MOD 1 site are part of a larger population within the established Biodiversity Offset Area (6,907 clumps) to the east of Karuah East Quarry site. Accordingly, the proposal will impact on <0.5% of the local population (including consideration of indirect impacts).

Due to the small area of impact and as the individuals within the subject site are part of a larger population that are located within the established Biodiversity Offset Area, the assessment of significance undertaken concluded that MOD 1 will not significantly impact on the local population. Furthermore, implementation of the mitigation measures recommended in Section 6.1.4 below will further reduce any potential impacts to this species.

Vegetation Communities

One (1) vegetation community was mapped within the MOD 1 site, 2,500m² Smooth – barked Apple – Red Bloodwood open forest. This is not an endangered ecological community.

Hollow – Bearing Tree Survey

One live hollow-bearing tree and one dead snag were identified within the MOD 1 site (refer to **Figure 7** below). The hollow-bearing tree, an *angophora costata* (Smooth – barked apple), contained one medium hollow.

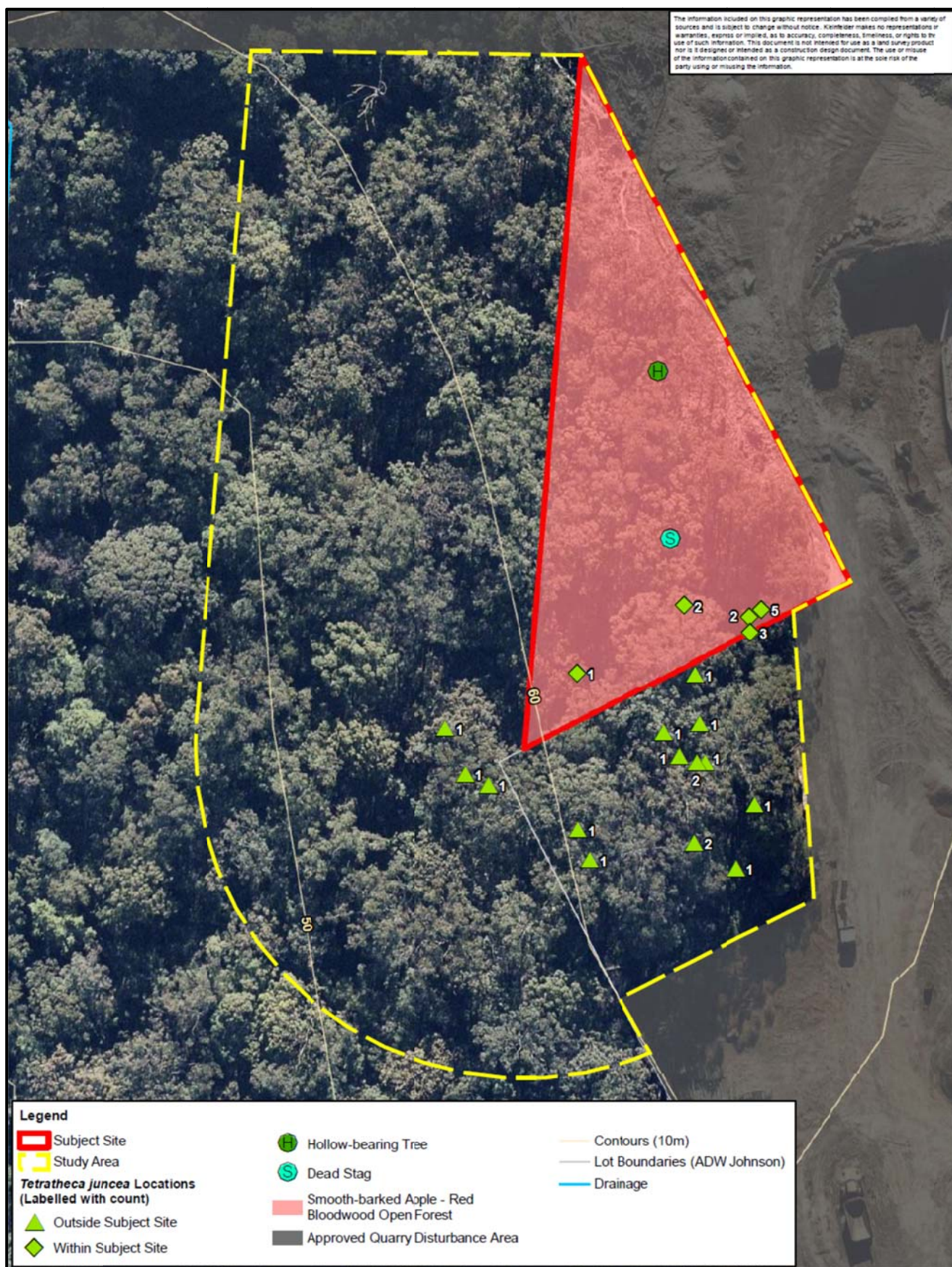


Figure 7: Vegetation Communities, Threatened Species and Habitat Features within the Study Area.

Koala Habitat Assessment (SEPP 44 – Koala Habitat Assessment)

Two (2) tree species listed under Schedule 2 of SEPP 44 were identified on the MOD 1 site, *Eucalyptus punctata* (Grey Gum) and *Eucalyptus microcorys* (Tallowwood). Potential Koala habitat under SEPP 44 is defined as *areas of native vegetation where the trees if the types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component*.

These species do not constitute at least 15% of the total number of trees within the MOD 1 site. However, previous ecological reporting undertaken as part of the approved Karuah East Quarry project (Terrestrial Ecology Survey and Assessment Report, RPS, 2013) determined that the areas immediately adjacent to the MOD 1 site which contain the tree species *Eucalyptus punctata* and *Eucalyptus microcorys* do constitute koala habitat under SEPP 44.

While the tree strata within the MOD 1 site itself is not considered to comprise at least 15% of preferred feed tree species, this is due to the fact the MOD 1 site is a very small area and does not provide an accurate representation of wider habitat. It is likely on a larger scale, incorporating the vegetation immediately surrounding the MOD 1 site, the vegetation forms part of a larger area of Koala habitat (as stated by RPS, 2013). Therefore, as a conservative measure, the MOD 1 site is considered to contain 2,500m² of Koala habitat in accordance with SEPP 44.

Fauna

Eighteen (18) threatened fauna species under the TSC Act were identified to have potential to be impacted by the proposed development:

- Regent Honeyeater (also listed as critically endangered under the EPBC Act 1999);
- Dusky Woodswallow;
- Glossy-black Cockatoo;
- Varied Sitella;
- Little Lorikeet;
- Swift Parrot (also listed as critically endangered under the EPBC Act 1999);
- Powerful Owl;
- Masked Owl;
- Spotted-tailed Quoll (also listed as endangered under the EPBC Act 1999);
- Eastern False Pipistrelle;
- Little Bentwing-bat;
- Eastern Bentwing-bat;
- Eastern Freetail-bat;
- Koala (also listed as vulnerable under the EPBC Act 1999);
- Long-nosed Potoroo (also listed as vulnerable under the EPBC Act 1999);
- Grey-headed flying fox (also listed as vulnerable under the EPBC Act 1999);
- Greater Broad-nosed bat; and
- Eastern Cave bat.

The likely impact on native fauna from the proposed action within the MOD 1 site is considered to be minimal. While the area contains intact native vegetation, the area to be removed is nominal (2,500m²) and a large area of native vegetation continues to the west and south west as well as within the established biodiversity offset area to the east of the Karuah East Quarry.

Additionally, the area proposed to be cleared occurs on the edge of the vegetation (adjacent to the approved and disturbed Karuah East Quarry footprint) and accordingly its removal will not create fragmentation of vegetation such that local fauna species would be impacted.

Assessments of significance for each of the above species (as well as consideration of EPBC Significant Impact Guidelines where required) concluded that MOD 1 is unlikely to have a significant impact.

In addition, there is potentially suitable foraging habitat for four (4) migratory species listed under the EPBC Act 1999:

- Fork – tailed Swift;
- White – throated Needle-tail;
- Rainbow Bee – eater; and
- Black – faced Monarch.

None of these species are considered to have breeding habitat within the MOD 1 site. Considering that the proposal will remove a minor area of potential habitat (2,500m²) for these species, it is unlikely that the proposal will significantly impact on migrant populations. This was confirmed following considering of EPBC Significant Impact Guidelines.

6.1.3 Biodiversity Offsets

A Biodiversity Offset Area and Biodiversity Offset Area Management Plan (BOAMP) was established as part of Project Approval 09_0175 (Schedule 3 Conditions 28, 29 and 33) and EPBC approval 2014/7282 (Conditions 7, 8 and 9) for the Karuah East Quarry. The BOAMP was endorsed by both the NSW DPE Secretary (14 December 2015) and the Federal Department of Environment (16 March 2016). The offset lands are located on Lot 5 DP 838128, Lot 14 DP 1024564 and part Lot 13 DP 1024564 which are located directly adjacent (east) to the approved Karuah East Quarry.

The BOAMP (which was submitted as Appendix C of the original MOD 1 application documents lodged with NSW DPE on 12 July 2017) establishes that there are substantial surplus offset credits to those that were required to be secured under Project Approval 09-0175 and EPBC Approval 2014/7282. The surplus in biodiversity offset credits, are able to accommodate the credits generated by MOD 1 in terms of both state and federal biodiversity offset calculations. This is confirmed below.

State Offset Calculations

Vegetation

Project Approval 09_0175 for the Karuah East Quarry required a total of 129.32ha of 'existing vegetation' to be managed as an offset for impacts to 28.09ha of vegetation (Schedule 3 Condition 28). This generates an offset ratio of 4.60 to 1.

Following Project Approval, a survey of Biodiversity Offset Area boundaries was conducted and the final area of the offset was determined to be 138.22ha, of which 131.44ha is native vegetation.

With the inclusion of the additional impact area for MOD 1, 2,500m², the total new impact area of the Karuah East Quarry will be 28.34ha of 'existing vegetation'. With the total native vegetation within the offset area being 131.44ha, this equates to an offset to impact ratio of 4.64 to 1. Accordingly, the offset to impact ratio of the original Project Approval will remain in surplus.

This is confirmed in **Table 3** below.

Table 3: State Offset Vegetation Calculations

Project Approved Disturbance Area	Project Approved Offset Area & Rate (offset to impact)	Proposed New Total Disturbance Area including MOD 1	Proposed Offset Area & Rate including MOD 1 (offset to impact)
28.09ha of existing vegetation	129.32ha of existing vegetation Rate: 4.60: 1	28.34ha of vegetation	131.44ha of existing vegetation Rate: 4.64:1

Tetratheca juncea

The approved Karuah East Quarry project directly impacted on a total of 243 individual *tetratheca juncea* clumps, which generated a total of 3,574 species credits. The Biodiversity Offset Area was initially assessed as containing 6,324 clumps, which generated a total of 37,994 species credits. Accordingly, there was a surplus of 34,420 species credits when assessing direct impacts.

When assessing both direct and indirect impacts (which included consideration of *tetratheca juncea* individuals within a 50m buffer from the edge of the disturbance area) at the time of the original application, the proposal impacted a total of 1,575 individuals, which generated a total of 23,162 species credits. With consideration of the combined direct and indirect impacted clumps, the offset area contains a total of 4,992 clumps, generating a total of 29,952 species credits. This produces a surplus of 6,790 species credits.

A further 583 clumps of *tetratheca juncea* were subsequently identified by Kleinfelder (2016) following the completion of additional seasonal baseline survey in Lot 5 DP 838128 (following Secretary endorsement of the BOAMP). Accordingly, the surplus credit balance is actually larger than initially assessed.

Under the Biobanking Assessment Methodology (BBAM) calculator used for the original proposal, *tetratheca juncea* generated 14.71 credits per clump at the impact site and 6 credits per clump at the offset site. The additional impacts of MOD 1, which involves direct impact to 13 clumps and combined direct and indirect impacts (50m buffer from edge of the MOD 1 disturbance area) on 29 clumps, would increase the species credits generated through direct impacts by 191.23 species credits, and both direct and indirect impacts by 426.59 species credits. Accordingly, the surplus balance of species credits generated by the offset site, when considering both direct and indirect impacts, would readily accommodate for the additional impacts on *tetratheca juncea* generated by MOD 1.

Federal Offset Calculations

As part of the EPBC approval process for the Karuah East Quarry (EPBC 2014/7282), Eco Logical prepared an EPBC Assessment Report (2014) which included an assessment of the impacts on *tetratheca juncea* using the EPBC Act offset calculator.

This assessment concluded that the original approved project would achieve 106.76% of the offset requirements for the impacts to *tetratheca juncea*.

An assessment of MOD 1 (including the original impact to 243 individuals) has been conducted to ensure that the offset area would fulfil the offsetting requirements under the EPBC Act 1999. The assessment included the additional 583 *tetratheca juncea* individuals (as noted above) within Lot 5 of the offset area. This assessment confirmed that the offset area would satisfy 104.72% of the offsetting requirements for the Karuah East Quarry inclusive of proposed MOD 1.

Table 4: EPBC Act 1999 Offset Calculations for *Tetratheca juncea*

Impact Calculator Attribute	Approved Project Offset Calculations 2014/7282 (Eco Logical, 2014)		Offset Calculations Including Proposed MOD 1	
	Impact Calculator Input	Notes	Impact Calculator Input	Notes
Number Impacted	243	-	256	-
Proposed Offset	6,324	Does not include Lot 5 DP 838128	6,907	Including counts within Lot 5 DP 838128
Risk Horizon	20 years	-	20 years	-
Start Value	6,324 individuals	-	6,907 individuals	-
Future Value without Offset	6,324 individuals	Assumed 3% decline (200 individuals)	6,700 individuals	Assumed 3% decline (207 individuals)
Future Value with Offset	6,424 individuals	Assumed 1.5% increase (100 individuals)	7,010 individuals	Assumed 1.5% increase (103 individuals)
Raw Gain	300 individuals	As per calculator	310 individuals	As per calculator
Adjusted Gain	270 individuals	As per calculator	279 individuals	As per calculator
Net Present Value	259.42 individuals	As per calculator	268.07 individuals	As per calculator
Total % Residual Impact Offset	106.76%	As per calculator	104.72%	As per calculator

6.1.4 Conclusion and Recommended Mitigation Measures

Provided that the below recommendations are implemented, it is considered that proposed MOD 1 to nominally increase the disturbance area of the Karuah East Quarry by 2,500m² is acceptable in terms of ecological considerations. The recommendations are provided to protect the integrity of the native vegetation, threatened species and fauna habitats adjacent to the MOD 1 site:

- Where practical, the development should be designed in a way that retains the greatest amount of native vegetation and aims to impact the smallest number of *tetratheca juncea*;
- The NSW DPE Secretary endorsed Biodiversity Offset Area Management Plan (November 2015, Kleinfelder) shall be updated to reflect the MOD 1 additional disturbance area and required biodiversity offsets;
- The hollow bearing tree should be felled in accordance with the 'soft-felling' procedure as follows:
 - The habitat tree is located and marked by the supervising ecologist, who then consults the machine operator to discuss the direction of felling and potential safety issues;

- The hollow bearing tree is given several nudges with the excavator to give a warning to any occupying native fauna. The tree is then carefully monitored and any native fauna present is given an opportunity to self-relocate before the tree is felled;
- The hollow-bearing tree is then soft felled with the rate of the trees' fall controlled by the machinery operator to minimise impact; and
- Once the tree has been felled, all hollows are inspected by the supervising ecologist for native fauna species. Any animals present should be safely captured and relocated. If any fauna injured during the felling process, they are to be taken to a nearby veterinarian or wildlife care group for treatment.
- The construction site should be managed so that no accidental incursions occur into areas that are not part of the proposal area. This would be best achieved by clearly marking the extent of development such as the use of flagging tape during construction;
- All plant, machinery and equipment to be used for vegetation clearing should be washed down before entering and leaving the site to prevent the spread and establishment of weeds, or fungal pathogens such as *Phytophthora cinnamomi*; and
- Best practice erosion and sedimentation control methods should be adopted, enforced and maintained throughout earthworks during the construction phase to avoid having a negative impact on the surrounding vegetation, threatened species and fauna habitats.

6.2 SURFACE WATER MANAGEMENT

An assessment of Surface Water Management relevant to MOD 1 has been undertaken by SLR Global Environmental Solutions to accompany this modification application (refer to **Appendix D**).

6.2.1 Existing Environment

A small section of the proposed MOD 1 additional disturbance area currently drains back into the water management system of the Karuah East Quarry, with water flowing to Dam 1 (established as part of the approved Karuah East quarry approved Water Management Plan, SLR 2015 (refer to Attachment 1 of **Appendix D** of this EA for a copy of the approved surface water management plan). The majority of the proposed MOD 1 additional disturbance area currently drains offsite as clean water into the Yalimbah Creek catchment.

6.2.2 Assessment of Impacts

Given the minor nature of MOD 1, no additional surface water modelling was deemed necessary by SLR.

Construction

There will be no adverse impacts to surface water (erosion and uncontrolled discharge) provided that controls are implemented during the construction phase (refer to Section 6.2.3 below). During the construction phase, it is recommended that works are completed generally in accordance with **Figure 8** below, which includes erosion and sediment controls.

Operational

Any potential impacts to surface water will be effectively managed with mitigation measures implemented during the operational phase (refer to Section 6.2.3 below).

6.2.3 Summary of Mitigation Measures

Construction

Temporary erosion and sediment controls will be implemented that will include the use of strategically placed silt fencing, straw bales or similar (as has been done during construction of the Karuah East Quarry - refer to Section 6.2.3 of the approved Surface Water Management Plan provided within Attachment 1 of **Appendix D** of this EA). Temporary sediment controls will be constructed to intercept sediment laden runoff prior to discharge into the natural drainage system. On-site vehicle activity in the additional disturbance area during construction will be minimised.

Operation

Water management and erosion & sediment control measures will be implemented to maximise drainage of water from the proposed MOD 1 additional disturbance area into the water management system of the approved Karuah East Quarry. This will involve the addition and shaping of material within the proposed MOD 1 additional disturbance area to achieve the desired flow directions. Once shaping has been completed the water from the proposed additional disturbance area will flow to Dam 1 of the approved water management system. The additional disturbance area will result in a minor 3.5% increase in the catchment of Dam 1, based on the catchment outlined within the NSW DPE Secretary approved Water Management Plan (SLR 2015), Section 6.1.3 (refer to Attachment 1 of the attached SLR report 'Key Environmental Aspects and Controls' provided in **Appendix D** of this EA). Dam 1 has sufficient capacity to cater for the minor 3.5% increase in catchment.

Figure 8 below illustrates the proposed erosion and sediment control for the proposed extension area that will generally be implemented. All activities will be completed within the proposed MOD 1 additional disturbance footprint. Key aspects include:

- Rock pitched batter;
- Construction 1.5m (horizontal) to 1m (vertical);
- Generally larger diameter rocks at the base;
- Land is graded back to the existing dam; and
- Completion of a geotechnical report prior to the area being made operational.

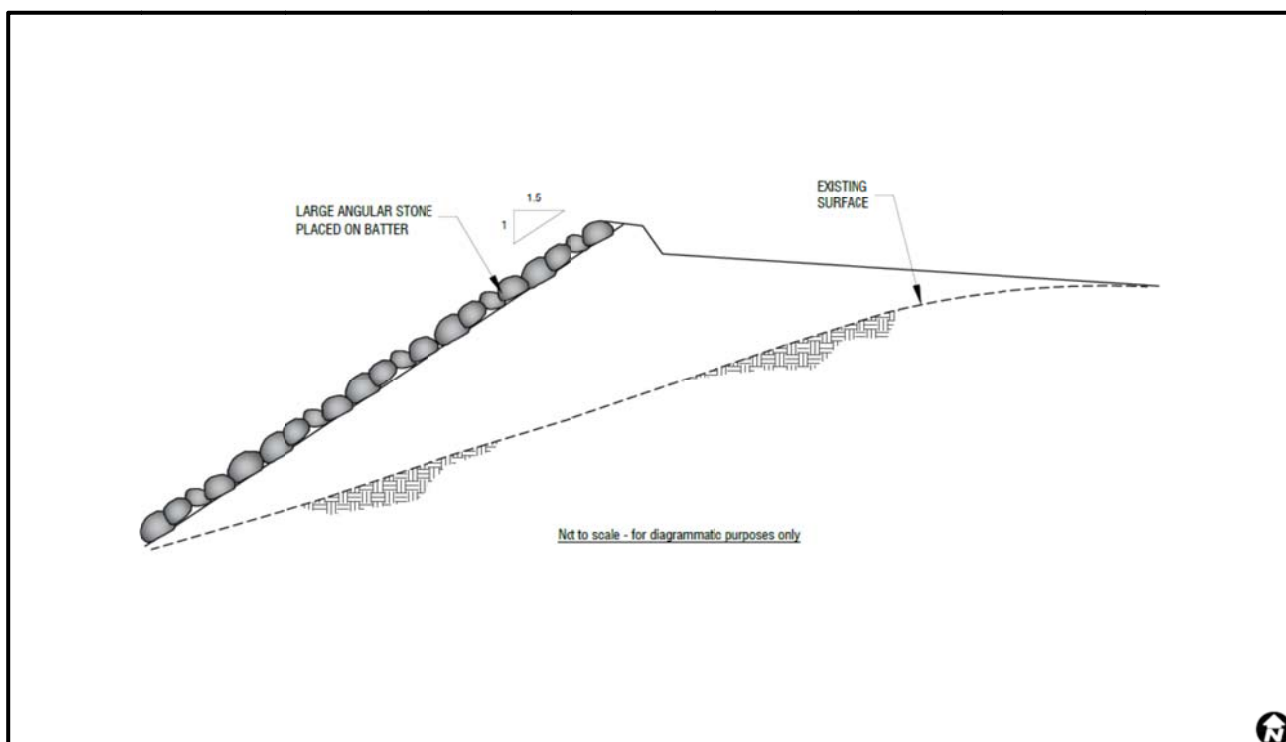


Figure 8: Erosion & Sediment Control Measures for Proposed MOD 1 Additional Disturbance Area.

The following additional mitigation measures will be employed:

- Use of gravel as cover material in the extension area to make a compact surface layer;
- Continuation of surface water monitoring at dams and surrounding creeks (Bulga Creek and Yalimbah Creek) in accordance with Section 8 of the approved Water Management Plan (SLR, 2015);
- Maintenance of erosion and sediment controls; and
- The NSW DPE Secretary approved Water Management Plan (SLR, 2015) will be updated following determination of the modification application (MOD 1) to reflect the minor increase to the disturbance footprint.

MOD 1 will have no adverse impact on surface water management provided the above construction and operational mitigation measures are implemented.

6.3 GROUNDWATER

Consideration of potential groundwater impacts relevant to MOD 1 has been undertaken by SLR Global Environmental Solutions to accompany this EA (refer to **Appendix D**).

6.3.1 Existing Environment

The groundwater conditions at the Karuah East Quarry site are well understood and the proponent monitors a series of groundwater bores for groundwater quality and depth as part of the NSW DPE Secretary approved Water Management Plan (SLR, 2015). The typical groundwater RL at the quarry site is greater than 10m below the planned quarry base.

6.3.2 Assessment of Impacts

Given the minor nature of MOD 1, no additional ground water modelling was deemed necessary by SLR.

Construction & Operation

The Groundwater Assessment undertaken by Coffey Geotechnics that formed part of the Project Approval 06_0309 for the Karuah East Quarry found that the typical groundwater RL at the proposed quarry site is greater than 10m below the planned quarry base. Excavation in the quarry is therefore not anticipated to intersect the groundwater surface.

There are no predicted additional groundwater impacts associated with construction and operations for the proposed MOD 1 additional disturbance area. The proposed MOD 1 additional disturbance area is not an extension of the quarry pit and will not cause any additional groundwater impact.

6.3.3 Summary of Mitigation Measures

Groundwater monitoring is undertaken at Karuah East Quarry in accordance with the NSW DPE Secretary approved Water Management Plan (SLR 2015). The existing monitoring and reporting program will continue following nominal extension of the quarry disturbance area (MOD 1).

It is expected that MOD 1 will have no impact on groundwater.

6.4 NOISE IMPACT ASSESSMENT

Consideration of potential noise impact has been undertaken by SLR Global Environmental Solutions to accompany MOD 1 (refer to **Appendix D**).

6.4.1 Existing Environment

Noting that the Karuah East Quarry site is currently in the final stages of construction, the source of noise in the existing environment is associated with construction activities. There is also cumulative noise associated with the adjacent operational Karuah Quarry as well as other noise sources associated with the Pacific Highway.

6.4.2 Assessment of Impacts

Given the minor nature of MOD 1, no additional acoustic modelling was deemed necessary by SLR.

Construction

The Project Approval and Environment Protection Licence (EPL) 20611 do not provide specific construction noise criteria for the Karuah East Quarry. The NSW EPA Interim Construction Noise Guideline (ICNG) sets out noise criteria applicable to construction site noise for the purpose of defining intrusive noise impacts. ICNG Construction Noise Goals are outlined within Section 5.1 of the NSW DPE Secretary approved Noise Management Plan (SLR 2015) as required by Schedule 3 Condition 7 of the Project Approval. This is provided within Attachment 2 of the appended SLR document 'Key Environmental Aspects and Controls' (provided in **Appendix D** of this EA).

Construction noise monitoring for the Karuah East Quarry was completed during 2016 and 2017. The monitoring for vegetation clearance activities was completed on 29 April 2016, with the results from this monitoring indicating that the site was compliant within the adopted construction noise goals for the site.

Noise generating activities will be generated in the MOD 1 additional disturbance area from the clearing of vegetation as well the work associated with shaping and grading the landform. Based on existing noise results complying with noise criteria, it is predicted that the MOD 1 area would not cause additional construction noise impacts at the site above those already approved.

Operational

The proposed additional disturbance area (MOD 1) will be utilised for improved vehicle manoeuvring and will reduce vehicle internal vehicle movements.

The Noise and Vibration Assessment that formed part of the Project Approval confirmed that *“Operational noise levels of the proposal are predicted to meet project specific noise goals at all nearest, potentially affected non project related residential locations surrounding the site”*. Based on the predicted impacts in the Noise and Vibration Assessment being within Project Approval criteria and the minimal changes relating to the ‘approved operations’, the proposed MOD 1 additional disturbance area will not cause additional operational noise impacts at the site above those already approved.

No blasting is proposed to be undertaken within the MOD 1 area.

6.4.3 Summary of Mitigation Measures

There are no specific additional controls proposed in relation to the extension area other than those required to be adopted under the approved Noise Management Plan (SLR 2015). The Noise Management Plan (SLR 2015) will be updated once the EA Modification has been determined to reflect the nominal increase to the disturbance footprint.

Relevant to MOD 1, the noise controls include:

Construction Activities and Construction Traffic

The following best practice noise control measures shall be implemented:

- Adherence to operating hours outlined within the approved Noise Management Plan (SLR 2015) as follows:

Activity	Operating Hours
Operational Activity	7.00am to 6.00pm, Monday to Friday; 7.00am to 1.00pm, Saturdays. No quarrying operations on Sundays or Public Holidays
Construction Activities	7.00am to 6.00pm, Monday to Friday; 8.00am to 1.00pm, Saturdays. Unless noise from the activities does not exceed 35dB(A) _{L_{Aeq}(15 minute)} at any privately owned residences.
Maintenance Activities	24 hours a day, 7 days per week, provided activities are inaudible at any privately-owned residence.

Note: The above do not apply in the event of a direction from police or other relevant authority for safety or emergency reasons regarding works which may be needed to be undertaken to avoid loss of life, property loss and/or to prevent environmental harm.

- Noise monitoring at the Karuah East Quarry site and within the community;
- Regularly train staff and contractors (ie toolbox talks) to use equipment in ways to minimise noise;
- Switching off vehicles and plant when not in use;
- A speed limit of 40 km/hour will be applied and enforced for all construction-related vehicles onsite; and
- Prompt response to any community issues of concern.

Operational Activities

A speed limit of 40 km/hour will be applied and enforced for all project-related vehicles onsite.

The best practice noise control measures outlined above shall continue to be implemented for operational activities.

Overall, it is expected that MOD 1 will have no adverse acoustic impact.

6.5 AIR QUALITY IMPACT ASSESSMENT

Consideration of potential Air Quality Impact Assessment has been undertaken by SLR Global Environmental Solutions to accompany the MOD 1 application.

6.5.1 Existing Environment

With the Karuah East Quarry site currently under construction, the source of dust is associated with construction activities. There is also cumulative air quality impacts associated with the adjacent operational Karuah Quarry.

6.5.2 Assessment of Impacts

Given the minor nature of MOD 1, no additional air quality modelling was deemed necessary by SLR.

Construction

The Air Quality Impact Assessment approved as part of the Project Approval did not specify dust levels during the construction phase. Air quality monitoring has been completed during the construction phase at Karuah East Quarry in accordance with the Project Approval, with results summarised below:

- The High Volume Air Sampler (HVAS) total suspended particles (TSP) monitoring results from 29 April 2016 until end of August 2017 have been within the Project Approval operational criteria;
- The PM10 monitoring results from 29 April 2017 until end of August 2017 have been within the annual average and 24 hour maximum criteria; and
- The depositional dust monitoring (DDG1-5) during the construction period indicate that results have been below the 4 g/m²/month criteria.

With construction monitoring results being well below the criteria, and the proposed additional disturbance area only equating to 2,500m² there is predicted to be negligible additional air quality impacts associated with MOD 1.

Operational

The Air Quality Impact Assessment approved as part of Project Approval 09_0175 confirmed the cumulative dust concentrations for both the existing Karuah Quarry and the Karuah East Quarry will be below the Project Approval criteria for depositional dust, total suspended particulates and PM₁₀.

The proposed MOD 1 additional disturbance area will be utilised for vehicle maneuvering and will reduce internal vehicle movements. As the MOD 1 area is nominal, there are no predicted additional air quality impacts at Karuah East during the operational phase.

6.5.3 Summary of Mitigation Measures

Given that the proposed MOD 1 additional disturbance area will be a heavily trafficked area, the adjacent roads and MOD 1 area will be watered regularly to effectively manage air quality impacts. Gravel will be used as cover material in the MOD 1 additional disturbance area to make a compact surface layer and reduce air quality impacts.

The Air Quality and Greenhouse Gas Management Plan (SLR 2015) will be updated once the MOD 1 application has been determined to reflect the increase to the disturbance footprint. Controls relating to air quality are outlined within Section 7 of the approved Air Quality and Greenhouse Gas Management Plan (SLR, 2015), provided as Attachment 3 of the appended SLR document 'Key Environmental Aspects and Controls' (refer to **Appendix D** of this EA). Controls relevant to MOD 1 are as follows:

- Air quality monitoring will continue to be undertaken in accordance with the conditions of the Project Approval by a suitably qualified air quality expert. The monitoring will consider the performance of the quarry in relation to the criteria outlined in the SLR Air Quality Impact Assessment (July 2013) and conditions of the Project Approval;
- The adjacent roads and MOD 1 additional disturbance area will be watered regularly to effectively manage potential air quality impact;
- Exposed areas are rehabilitated as soon as practical with inert material and revegetated;
- Regular inspections of weather conditions will be performed to identify conditions which would be unfavourable in terms of dust levels at nearest sensitive locations blowing in the direction of sensitive receivers and implement remedial measures if necessary; and
- All trafficable areas and vehicle manoeuvring areas will be maintained, at all times, in a condition that will minimise the emission of dust to the air, or emission from the site of windblown or traffic generated dust.

Overall, MOD 1 is expected to have no adverse air quality impact.

6.6 VISUAL IMPACT ASSESSMENT

Consideration of visual impacts relevant to MOD 1 has been undertaken by SLR Global Environmental Solutions (refer to **Appendix D**).

The proposed MOD 1 additional disturbance area is not visible from any receptors or the Pacific Highway. Accordingly, the proposed MOD 1 additional disturbance area will not cause any additional visual impacts for the project.

6.7 SOIL & LAND RESOURCES

Consideration of soil and land resources relevant to MOD 1 has been undertaken by SLR Global Environmental Solutions (refer to **Appendix D**).

The proposal represents a minor increase in disturbance of 2,500m². This represents less than a 1% increase in the overall Karuah East Quarry disturbance footprint.

Noting that the Soil Survey and Land Resource Assessment (GSS Environmental 2013), which formed part of Project Approval 09_0175, confirmed the suitability of the project site for quarrying activities, SLR confirm that proposed MOD 1 is acceptable for the purpose proposed. No additional controls or management measures are recommended.

6.8 REHABILITATION

Consideration of rehabilitation relevant to MOD 1 has been undertaken by SLR Global Environmental Solutions (refer to **Appendix D**).

The proposed MOD 1 additional disturbance area will be required for the life of the quarry, and no rehabilitation of this area would be completed until closure. Final rehabilitation will be undertaken in accordance with Section 9 of the NSW DPE Secretary approved Landscape and Rehabilitation Management Plan (SLR 2015) required as part of the Project Approval (refer to Attachment 4 of the Appended SLR Report 'Key Environmental Aspects & Controls' provided in **Appendix D** of this EA). This plan will be updated to reflect to proposed MOD 1 additional disturbance footprint following determination of the MOD 1 application.

In addition to the above, clearing of the additional disturbance area will be undertaken in accordance with the recommendations of the Kleinfelder flora and Fauna Assessment provided within **Appendix C** of this EA Report.

6.9 HERITAGE

6.9.1 Aboriginal Archaeology

6.9.1.1 Impact Assessment

Karuah Local Aboriginal Land Council have undertaken a Cultural Heritage Assessment of the MOD 1 proposed additional disturbance area (refer to **Appendix E**).

The archaeological assessment included:

- A review of existing documentation, including the approved Heritage Management Plan (RPS, December 2015) prepared in accordance with Schedule 3 Condition 36 of the Project Approval and the approved Cultural Heritage Assessment (RPS, June 2012);
- A review of the NSW Office of Environment and Heritage (OEH) Aboriginal Heritage Information Management System (AHIMS) database; and
- Inspection of the MOD 1 site with members of the Karuah Local Aboriginal Land Council and an Aboriginal elder.

6.9.1.2 Results

The assessment did not identify any items of Aboriginal Archaeological significance or any potential areas of Aboriginal Archaeological significance. Despite poor visibility during the site inspection due to the presence of thick vegetation, the Cultural Heritage Assessment found that the area of land subject to MOD 1 had little potential for Aboriginal usage noting the following:

- The area is comprised of trees estimated to be less than 100 years old, which is far too young to have been used traditionally by an Aboriginal person. Additionally, the trees are not of a suitable bark type or density for traditional Aboriginal use (ie. for canoes or food bowls);
- The MOD 1 site is located along a steep hillside covered in exposed rocks, making the site difficult to navigate;
- The composition of rocks at the MOD 1 site is not suitable for any traditional purpose;
- A small rainwater runoff creek was observed nearby however it appeared to be dry and not useful for any traditional Aboriginal purpose; and
- No other sites of Aboriginal importance are located near the MOD 1 site.

The Aboriginal elder that attended the site inspection confirmed that there was minimal opportunity of finding any sites or potential areas of significance based on the above factors.

Accordingly, the assessment confirmed that the MOD 1 proposal is acceptable in terms of Aboriginal Archaeology considerations, and no further assessment is required provided that appropriate management measures are implemented.

6.9.1.3 Recommended Mitigation Measures

The following mitigation measures are recommended:

- If Aboriginal site/s are identified in the MOD 1 area during works, then all activity in the area will cease, the area cordoned off and contact made with the NSW OEH Enviroline 131 555, a suitably qualified archaeologist and the relevant Aboriginal stakeholders, so that it can be adequately assessed and managed;
- In the event that skeletal remains are uncovered in the MOD 1 area, work will cease immediately in the vicinity and the area secured to prevent unauthorised access. The proponent will need to contact the NSW Police Coroner to determine if the material is of Aboriginal origin. If determined to be Aboriginal, contact will be made with the NSW OEH Enviroline 131 555 and relevant Aboriginal stakeholders in order to determine an action plan for the management of the skeletal remains prior to works re-commencing on site; and
- The approved Heritage Management Plan (RPS, 2015) will be updated prior to commencement of works within the MOD 1 area to reflect the minor increase to the disturbance footprint.

6.9.2 European Heritage

6.9.2.1 Impact Assessment

The MOD 1 site does not contain any items of European Heritage significance and is not located within a heritage conservation area.

A search of the Australian Heritage Database confirms that no items are listed within the MOD 1 site.

A search of the NSW Heritage Inventory indicates that there is one (1) item listed in the Karuah Area:

- Karuah Bridge, Pacific Highway Karuah. Listing by NSW State Government.

Two (2) items of local significance in Karuah are listed under Schedule 2 of the Port Stephens LEP 2013 (it is noted that the subject site is within the Mid Coast Council LGA):

- Item 26 – Karuah Town War Memorial, 1 & 11 Memorial Drive (Memorial Park / Lion Park), Karuah; and
- Item 27 – Karuah Cemetery, Wattle Street, Karuah.

The nearest of the above listed heritage items is located in excess of 5km south from the MOD 1 site. Accordingly, the proposed modification will have no impact.

6.9.2.2 Conclusion & Recommended Mitigation Measure

The proposed modification is considered acceptable in terms of European heritage considerations. The following mitigation measure is recommended:

- If, during the course of development works, significant European cultural heritage material is discovered, work should cease in that area immediately. The NSW OEH should be notified and works only recommenced when an approved management strategy has been implemented.

6.10 OTHER MATTERS

The key items relevant to the MOD 1 application have been addressed in Sections 6.1 – 6.9 above (as confirmed in consultation with NSW DPE assessment staff following lodgement of the Section 75W MOD 1 application, refer to Section 2 of this EA).

The proposal for a nominal increase in disturbance area to allow improved operational efficiencies will have no adverse impact or not be impacted upon by any of the following considerations:

- Access, road network and traffic;
- Geotechnical;
- Bushfire;
- Social & economic considerations; and
- Waste Management.

Assessment of the overall Karuah East Quarry in relation to these items was undertaken as part of the Project Approval process. It is considered that the minor increase in disturbance area of 2,500m² (which is less than 1% of the overall approved Karuah East Quarry footprint) will not affect or be affected by any of these considerations.

7.0 Statement of Commitments Relative to MOD 1

Provided below is a Statement of Commitments specifically relevant to MOD 1 that will form an addendum to the Statement of Commitments approved under Project Approval 09_0175.

7.1 PLANS, DOCUMENTS AND APPROVALS

The MOD 1 development will be completed in accordance with the submitted plans and descriptions of the proposed development provided in the Environmental Assessment Report (January 2018) prepared by ADW Johnson.

The proposed development will be carried out in accordance with the MOD 1 Project Approval.

7.2 REVISION OF MANAGEMENT PLANS

The following Management Plans, approved by the NSW Secretary on 14 December 2015, will be updated to reflect the MOD 1 determination:

- Biodiversity Offset Area Management Plan (Kleinfelder, November 2015);
- Noise Management Plan (SLR, October 2015);
- Air Quality and Greenhouse Gas Management Plan (SLR, November 2015);
- Water Management Plan (SLR, December 2015);
- Heritage Management Plan (RPS, December 2015); and
- Landscape and Rehabilitation Management Plan (SLR, November 2015).

Additionally, the Environmental Management Strategy (SLR, December 2015) will be updated to reflect MOD 1.

7.3 FLORA AND FAUNA

- Where practical, the MOD 1 development will be designed in a way that retains the greatest amount of native vegetation and aims to impact the smallest number of *tetratheca juncea*;
- The Biodiversity Offset Area Management Plan (November 2015, Kleinfelder) will be updated to reflect the additional disturbance area and required biodiversity offsets;
- The hollow bearing tree will be felled in accordance with the 'soft-felling' procedure as follows:
 - The habitat tree is located and marked by the supervising ecologist, who then consults the machine operator to discuss the direction of felling and potential safety issues;
 - The hollow bearing tree is given several nudges with the excavator to give a warning to any occupying native fauna. The tree is then carefully monitored and any native fauna present is given an opportunity to self-relocate before the tree is felled;
 - The hollow-bearing tree is then soft felled with the rate of the trees' fall controlled by the machinery operator to minimise impact; and
 - Once the tree has been felled, all hollows are inspected by the supervising ecologist for native fauna species. Any animals present should be safely captured and relocated. If any fauna injured during the felling process, they are to be taken to a nearby veterinarian or wildlife care group for treatment.

- The construction site will be managed so that no accidental incursions occur into areas that are not part of the proposal area. This would be best achieved by clearly marking the extent of development such as the use of flagging tape during construction;
- All plant, machinery and equipment to be used for vegetation clearing will be washed down before entering and leaving the site to prevent the spread and establishment of weeds, or fungal pathogens such as *Phytophthora cinnamomi*; and
- Best practice erosion and sedimentation control methods will be adopted, enforced and maintained throughout earthworks during the construction phase to avoid having a negative impact on the surrounding vegetation, threatened species and fauna habitats.

7.4 SURFACE WATER MANAGEMENT

Construction

- Temporary erosion and sediment controls will be implemented including the use of silt fencing, straw bales or similar;
- Temporary sediment controls will be constructed to intercept sediment laden runoff prior to discharge into the natural drainage system; and
- On-site vehicle activity in the additional disturbance area during construction will be minimised.

Operation

- Erosion and sediment controls will be implemented to change the grade of the MOD 1 additional disturbance area to maximise the drainage of water into the disturbed area of the Karuah East Quarry site (dirty water catchment) where it will be captured by the approved water management system of the Karuah East Quarry. This will involve the addition and shaping of material within the MOD 1 additional disturbance area to achieve the desired flow directions; and
- Once shaping has been completed the water from the MOD 1 additional disturbance area will flow to Dam 1 of the approved Water Management System of the Karuah East Quarry.

Implementation of erosion and sediment control measures for the MOD 1 additional disturbance area generally in accordance with **Figure 9** below. The key aspects of the erosion and sediment control plan are as follows:

- Rock pitched batter;
- Construction 1.5m (horizontal) to 1m (vertical);
- Generally larger diameter rocks at the base;
- Land is graded back to the existing dam; and
- Completion of a geotechnical report prior to the area being made operational.

All activities will be completed within the proposed MOD 1 additional disturbance footprint.

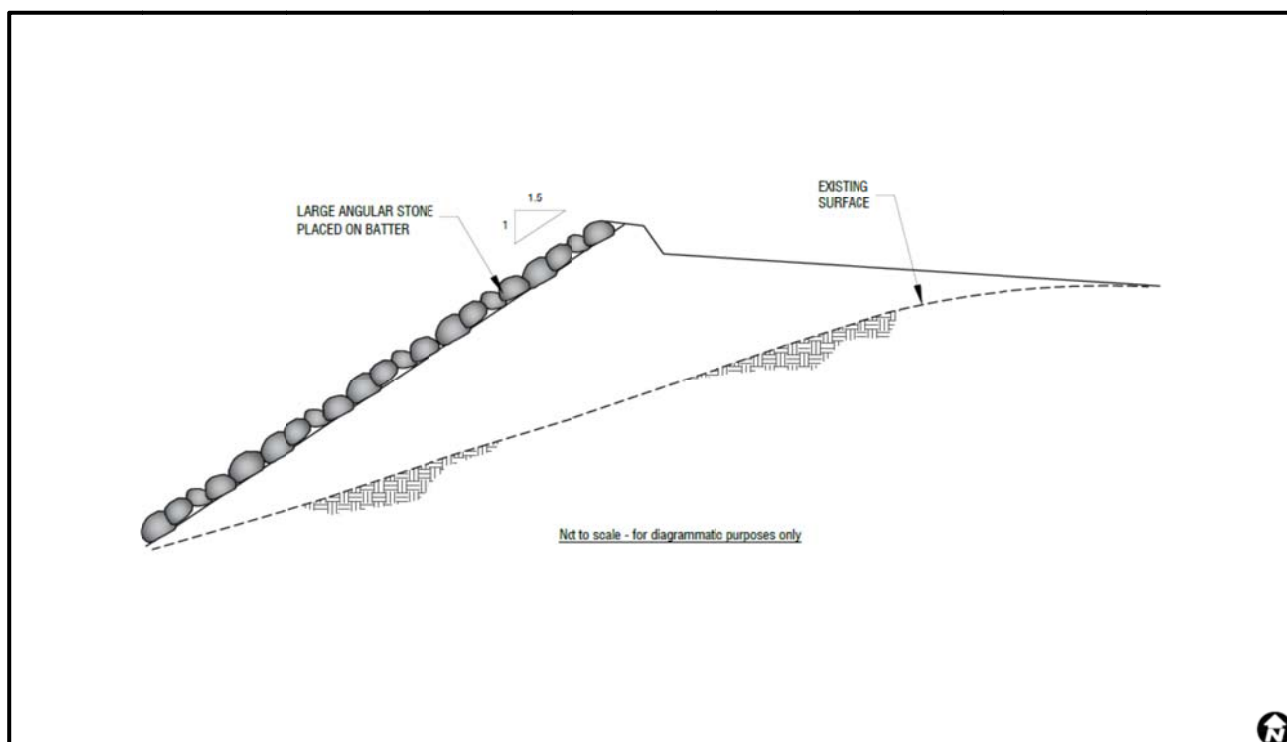


Figure 9: Erosion & Sediment Control Measures for MOD 1 Additional Disturbance Area.

The following additional mitigation measures will be employed:

- Use of gravel as cover material in the extension area to make a compact surface layer;
- Continuation of surface water monitoring at dams and surrounding creeks (Bulga Creek and Yalimbah Creek) in accordance with Section 8 of the approved Water Management Plan (SLR, 2015);
- Maintenance of erosion and sediment controls; and
- The NSW DPE Secretary approved Water Management Plan (SLR, 2015) will be updated following determination of the modification application (MOD 1) to reflect the minor increase to the disturbance footprint.

7.5 GROUNDWATER MANAGEMENT

- Groundwater monitoring is undertaken at the Karuah East Quarry in accordance with the approved Water Management Plan (SLR 2015). No additional mitigation measures are required in relation to the extension area;
- The existing monitoring and reporting program will continue following extension of the quarry disturbance area (MOD 1); and
- The approved Water Management Plan (SLR, 2015) will be updated following determination of the modification application (MOD 1) to reflect the minor increase to the disturbance footprint.

7.6 NOISE MANAGEMENT

- The Noise Management Plan (SLR 2015) will be updated once the MOD 1 application has been determined to reflect the increase to the disturbance footprint;
- There are no specific additional noise mitigation measures required in relation to the MOD 1 extension area other than those required to be adopted in the approved Noise Management Plan (SLR, 2015). Relevant to MOD 1, these include:

Construction Activities and Construction Traffic

Adherence to operating hours outlined within the approved Noise Management Plan (SLR 2015) as follows:

Activity	Operating Hours
Operational Activity	<ul style="list-style-type: none"> 7.00am to 6.00pm, Monday to Friday; 7.00am to 1.00pm, Saturdays. No quarrying operations on Sundays or Public Holidays
Construction Activities	<ul style="list-style-type: none"> 7.00am to 6.00pm, Monday to Friday; 8.00am to 1.00pm, Saturdays. Unless noise from the activities does not exceed 35dB(A)_{L_{Aeq}(15 minute)} at any privately owned residences.
Maintenance Activities	<ul style="list-style-type: none"> 24 hours a day, 7 days per week, provided activities are inaudible at any privately-owned residence.

Note: The above do not apply in the event of a direction from police or other relevant authority for safety or emergency reasons regarding works which may be needed to be undertaken to avoid loss of life, property loss and/or to prevent environmental harm.

- Noise monitoring at the Karuah East Quarry site and within the community;
- Regularly train staff and contractors (ie toolbox talks) to use equipment in ways to minimise noise;
- Switching off vehicles and plant when not in use;
- A speed limit of 40 km/hour will be applied and enforced for all construction-related vehicles onsite; and
- Prompt response to any community issues of concern.

Operational Activities

- A speed limit of 40 km/hour will be applied and enforced for all project related vehicles onsite; and
- The best practice noise control measures outlined above shall continue to be implemented for operational activities.

7.7 AIR QUALITY MANAGEMENT

- There are no additional air quality mitigation measures necessary other than those controls relating to air quality outlined within Section 7 of the approved Air Quality and Greenhouse Gas Management Plan (SLR, 2015), relevant to MOD 1 as follows:
 - Air quality monitoring will continue to be undertaken in accordance with the conditions of the Project Approval by a suitably qualified air quality expert. The monitoring will consider the performance of the quarry in relation to the criteria outlined in the SLR Air Quality Impact Assessment (July 2013) and conditions of the Project Approval;
 - Exposed areas are rehabilitated as soon as practical with inert material and revegetated;
 - Regular inspections of weather conditions will be performed to identify conditions which would be unfavourable in terms of dust levels at nearest sensitive locations blowing in the direction of sensitive receivers and implement remedial measures if necessary; and

- All trafficable areas and vehicle manoeuvring areas will be maintained, at all times, in a condition that will minimise the emission of dust to the air, or emission from the site of windblown or traffic generated dust.
- The adjacent roads and MOD 1 additional disturbance area will be watered regularly to effectively manage potential air quality impact;
- Gravel will be used as cover material in the MOD 1 additional disturbance area to make a compact surface layer; and
- The Air Quality and Greenhouse Gas Management Plan (SLR 2015) will be updated once the MOD 1 application has been determined to reflect the increase to the disturbance footprint.

7.8 REHABILITATION

- Final rehabilitation will be undertaken in accordance with Section 9 of the approved Landscape and Rehabilitation Management Plan (SLR, 2015); and
- The approved Landscape & Rehabilitation Plan (SLR, 2015) will be updated to reflect to proposed additional disturbance footprint following determination of the MOD 1 application.

7.9 HERITAGE

7.9.1 Aboriginal Archaeology

- If Aboriginal site/s are identified in the MOD 1 area during works, then all activity in the area will cease, the area cordoned off and contact made with the NSW OEH Enviroline 131 555, a suitably qualified archaeologist and the relevant Aboriginal stakeholders, so that it can be adequately assessed and managed;
- In the event that skeletal remains are uncovered in the MOD 1 area, work will cease immediately in the vicinity and the area secured to prevent unauthorised access. The proponent will need to contact the NSW Police Coroner to determine if the material is of Aboriginal origin. If determined to be Aboriginal, contact will be made with the NSW OEH Enviroline 131 555 and relevant Aboriginal stakeholders in order to determine an action plan for the management of the skeletal remains prior to works re-commencing on site; and
- The approved Heritage Management Plan (RPS, 2015) will be updated prior to commencement of works within the MOD 1 area to reflect the minor increase to the disturbance footprint.

7.9.2 European Heritage

- If, during the course of MOD 1 development works, significant European cultural heritage material is discovered, work should cease in that area immediately. The NSW OEH should be notified and works only recommenced when an approved management strategy has been implemented.

8.0 Conclusion

This modification application (MOD 1) is made under Section 75W of the Environmental Planning and Assessment Act 1979 and seeks to amend existing Project Approval 09_0175 for the Karuah East Quarry.

The proposed modification is minor in nature and will remain entirely consistent with the current Project Approval for the Karuah East Quarry.

The amendment seeks to nominally expand the approved area of disturbance (31.63ha) by an additional 2,500m², adjacent to the crushing plant. The resulting new total area of disturbance of the Karuah East Quarry will be 31.88ha. The proposed modification represents less than a 1% increase in disturbance area when compared with existing approval.

During detailed quarry plant design undertaken since issue of the Project Approval, it has been identified that the additional disturbance area will allow for improved operational efficiencies, in particular by providing a larger vehicle manoeuvring area adjacent to the quarry plant which will result in reduced internal truck movements. The proposed modification will enable this to occur.

Consultation has been undertaken with NSW DPE assessment staff and key issues relevant to the proposed modification have been confirmed. This Environmental Assessment has addressed each of the key issues identified, including:

- Flora and fauna;
- Noise;
- Air quality;
- Water management;
- Visual impact;
- Rehabilitation; and
- Heritage.

Assessment of each of the above has confirmed that the site and receiving environment is appropriate for the proposed modification. A range of management measures will be implemented to ensure that no significant adverse impacts will result from the proposed modification.

Overall it is considered that the proposed amendment to Project Approval 09_0175 to nominally increase the disturbance area of the Karuah East Quarry footprint by 2,500m² is a suitable development and will contribute to improved operational efficiency.

Appendix A

APPROVED DEVELOPMENT PLANS (MP 09-0175)

Appendix B

PROPOSED MODIFICATION TO SITE LAYOUT

Appendix C

FLORA & FAUNA ASSESSMENT - KLEINFELDER

Appendix D

ENVIRONMENTAL ASPECTS & CONTROLS ASSESSMENT – SLR GLOBAL ENVIRONMENTAL
SOLUTIONS

Appendix E

CULTURAL HERITAGE ASSESSMENT – KARUAH LOCAL ABORIGINAL LAND COUNCIL