

# Luddenham Quarry

DA 315-7-2003 MOD5 Modification Description

Prepared for Coombes Property Group and KLF Holdings Pty Ltd  
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# 1 Introduction

CPG in partnership with KLF (the applicants) are seeking to reactivate the existing clay/shale quarry at 275 Adams Road, Luddenham (the site). Quarrying operations were originally approved under consent DA No. 315-7-2003 (now classified as State significant development (SSD)). The applicants are seeking a modification (MOD5) to the consent to allow reactivation of quarrying operations.

A Modification Report was prepared by EMM Consulting Pty Limited (August 2020) which provided a description of the proposed modification. This was slightly refined in the Submissions Report (December 2020) and in response to information requested by the Department of Planning, Industry and Environment (DPIE) during their assessment of the modification application.

This report provides an updated modification description that includes these refinements.

## 2 Proposed modification

### 2.1 Overview

Luddenham Quarry reactivation will require an approved modification (MOD 5) to SSD DA 317-7-2003 that includes:

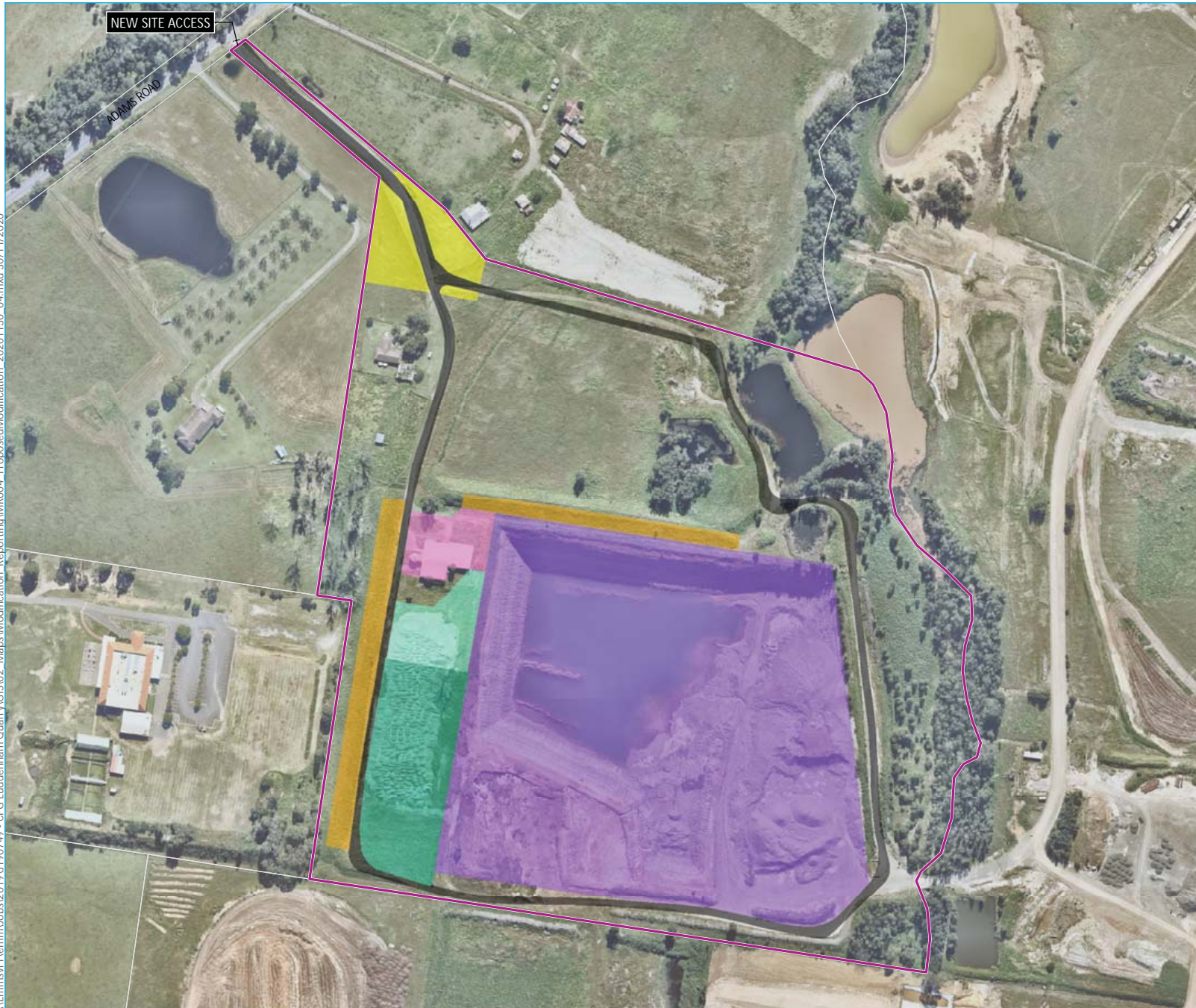
- the use of the existing site access from Adams Road by quarry vehicles;
- upgrade (including sealing) of the site access road and its intersection with Adams Road as required and upgrades to the existing internal road network;
- new stockpiling area, weighbridge and other site infrastructure within Lot 3 DP 623799;
- the operation of some additional quarry equipment and a small increase to the daily maximum number of trucks;
- removal of references to activities on Commonwealth-owned land previously known as Lot 1 DP 838361 (now a part of Lot 101 DP 1236319) from the consent;
- update of the existing surface water management system;
- removal of the northern noise bund during construction of the Luddenham Advanced Resource Recovery Centre (ARRC) (if the application for the ARRC (SSD-10446) approved); and
- administrative modification of some other conditions of consent to align with current government policy and/or site conditions (ie reduced development footprint) (refer Section 2.7).

The proposed modification does not seek to increase the approved quarry footprint, approved production rate or approved hours of operation.

The northern section of Adams Road, between the subject property access road and Elizabeth Drive, will be upgraded by the applicants so that the pavement is suitable for use by heavy vehicles.

An overview of the proposed modification is shown in Figure 2.1. A comparison of the proposed modification compared to currently approved operations is detailed in Table 2.1.

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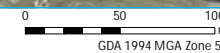


- KEY**
- Study area
  - Cadastral boundary
  - Proposed site modifications
  - Approved extraction footprint
  - Existing noise bunds
  - Existing stockpiling area
  - Extended stockpiling area
  - Internal road
  - Site entry infrastructure (incl. offices, amenities, weighbridge)
  - Equipment laydown area

Modification 5 proposed layout

Figure 2.1

Source: EMM (2020); DFSI (2017); GA (2011); Nearmap (2020)



**Table 2.1 Proposed modification compared to approved project (as modified)**

Element	Approved project (as previously modified)	Proposed modification
Quarry life	31 December 2024	No change
Production rate	300,000 tpa	No change
Approved site layout	As per consent Appendix A.	Relocate access road, weighbridge, stockpiles and other site infrastructure onto Lot 3 DP 623799 as per Figure 2.1 and remove Commonwealth land (Lot 1 DP 838361) from the consent.
Maximum extraction depth	30 m	No change
Quarry footprint	As per consent Appendix A.	No change
Hours of operation	Operations 7 am to 6 pm Monday to Friday. No haulage vehicles to enter the site between 6 pm and 7 am Monday to Friday. Maintenance 7 am and 1 pm Saturday.	No change
Stockpiles	Onsite: 6 ha western stockpile area plus stockpiling within approved extraction footprint. Maximum volume of clay and shale to be stockpiled on site: 100,000 m <sup>3</sup> . Lot 1 DP 838361: 14 ha stockpile Maximum volume to be stored on Lot 1 DP 838361: 190,000 m <sup>3</sup> .	Extend existing western stockpile area to the north. Continue stockpiling within extraction footprint. Increase the maximum volume of clay and shale stockpiled on site to 250,000 m <sup>3</sup> .
Site access	Site access on Elizabeth Rd through Lot 1 DP 838361. All site roads are currently unsealed and the site speed limit is currently 20 kph.	Access via existing property access on Adams Road. All heavy vehicle movements will access the site via Elizabeth Drive/Adams Rd intersection. It is proposed to amend Condition 13 of Schedule 4 to allow vehicles to travel at 40 kph on the sealed access road. No change to speed limit on unsealed roads.
Vehicle movements	Approximately 80 truck movements.	A maximum of 100 truck movements per day.
Quarrying equipment	Excavators, bulldozer, dump trucks and front-end loaders.	As per approved project (excluding conveyor) with the inclusion of a crusher and screen.
Noise bunds	A western and an eastern noise bund are included in the approved project.	No change to the western noise bund. The northern noise bund will be removed during construction of the ARRC.
Blasting	No blasting	No change
Waste	No disposal, storage, processing of waste unless permitted by an environment protection licence (EPL).	No change
Rehabilitation	Condition 35 of Schedule 4 requires annual audits to be carried out by a qualified rehabilitation consultant.	No change
Employees	Around 12 employees during normal operating conditions with a maximum of 15 during peak operating times	No change

**Table 2.1 Proposed modification compared to approved project (as modified)**

Element	Approved project (as previously modified)	Proposed modification
Surface water management system	The existing water management system is shown in Appendix 1 of the consent. Conditions 23 to 28 of Schedule 4 relate to surface water management.	Update surface water system to accommodate future development of the site (subject to separate approval).
Community consultative committee (CCC)	Condition 8 of Schedule 5 of the consent requires that a CCC be established and operating by September 2015.	Remove requirement for a CCC.

## 2.2 Site access

The currently approved access for the quarrying operations is from Elizabeth Drive, across the formerly leased Commonwealth land. This access is no longer available for use by the quarry. Therefore, approval is required for quarry vehicles to use the existing site access road from Adams Road, to allow for the reactivation and continuation of approved quarrying operations. This will avoid sterilising an important resource approved for extraction.

All heavy vehicles associated with the haulage of quarry product will access and leave the site via Adams Road and the Elizabeth Drive/Adams Road intersection. No heavy vehicles associated with the haulage of quarry product will travel on Adams Road south of the site.

The Adams Road/Elizabeth Drive intersection cannot currently accommodate trucks longer than 19-m long and it is not proposed to upgrade this intersection as part of the modification.

The proposed modification includes minor upgrades to the site access road/Adams Road intersection (ie splaying) to allow 19-m long trucks to access the site.

The site access road will be sealed between Adams Road and the weighbridge. The existing internal roads will be upgraded to accommodate heavy vehicles accessing the relocated weighbridge and access road.

Following approval of the ARRC, the internal roads may be realigned and will continued to be used by quarry vehicles to accommodate the site access arrangements for the ARRC. Any road realignment will avoid areas of native vegetation on the site.

## 2.3 Stockpiling

The approved western stockpiling area covers approximately 8,000 m<sup>2</sup>. It is proposed to extend this area to the north, within the existing noise bunds, to provide an additional 3,000 m<sup>2</sup> for stockpiles. In addition, material would continue to be stockpiled within the extraction footprint (the extraction footprint is approximately 7.1 ha). Due to the extent of approved extraction carried out to date, the extraction footprint, has a significantly larger capacity to accommodate stockpiling activities compared to earlier stages on the quarry's development.

The currently approved operations allow for 100,000 m<sup>3</sup> of clay/shale to be stockpiled within the site and 190,000 m<sup>3</sup> of clay/shale within Lot 1 (the Commonwealth land) as described in the MOD3 Environmental Assessment (Benbow Environmental 2014). It is proposed that a maximum of 250,000 m<sup>3</sup> of clay/shale would be stockpiled within the site at any one time. This equates to a reduction of 40,000 m<sup>3</sup> in overall stockpiling capacity of the approved quarry.

Initial quarry activities planning has determined that the extended stockpile area, in combination with stockpiling within the quarry void, will provide sufficient stockpiling area for continued quarrying operations.

## 2.4 New site infrastructure

### 2.4.1 Equipment laydown area

A new equipment laydown area will be established to the north of the extended western stockpile (refer Figure 2.1). The area will contain a demountable shed with a maximum height of 2.5 m. A small amount of fuel and chemicals required for site operations (including petrol, grease and flocculant) will be stored in a dedicated area within the site shed in accordance with the relevant Australian Standards. Maintenance of mobile plant will occur offsite. The quarry equipment fleet will be refuelled by a mobile refuelling vehicle.

An existing disused farm shed within this footprint will be demolished to accommodate the equipment laydown area and demountable site shed.

### 2.4.2 Site entry infrastructure

Site entry infrastructure will include an above ground weighbridge, wheel wash, site office, site shed, amenities and staff and visitor carparking area. The site office, site shed and amenities will be demountable structures with a maximum height of 2.5 m and minimal ground disturbance required for installation.

Given that the site access road will be sealed it is proposed to increase the speed limit to 40 kph on the sealed road, while maintaining the current speed limit of 20 kph on unsealed roads.

Following the approval and subsequent construction of the ARRC, quarrying operations may use ARRC site components.

## 2.5 Surface water management system

The approved water management system includes a quarry sump to dewater the quarry void to two sedimentation dams. Water collected in the surface water management system is used for dust suppression or irrigation or is discharged to Oaky Creek.

One of the sedimentation dams (the smaller of the sedimentation dams on site and previously referred to as Sediment Dam 1), has not been actively maintained for at least 2 years while the quarry has been inactive and is overgrown with vegetation, impeding the capacity of the dam. This dam will not form part of the proposed water management system for reactivated quarrying operations. However, it will remain in place and receive flows from its current catchment area until such time as the ARRC (if approved) is constructed. The quarry pit will form part of the revised water management system within pit storage of water expected to avoid the need for discharges to Oaky Creek.

## 2.6 Northern noise bund

The existing northern noise bund extending along the northern side of the quarry pit is approximately 4-m tall (Photograph 2.1).



**Photograph 2.1 Northern noise bund**

The applicants are progressing a new SSD application to develop an ARRC on the site to the north of the quarry void. The development footprint of the proposed ARRC will impact on the northern noise bund to accommodate a water treatment plant for the ARRC and an ARRC access road.

The design of the ARRC incorporates a fully enclosed facility (EMM 2020). The southern wall of the ARRC warehouse will run parallel, directly adjacent to the northern noise bund and will be 138 m long and constructed to a minimum height of 10 m and maximum height of 16 m. The building structure will comprise of:

- 2.5 m lower portion of walls comprising 250–300 mm precast or in-situ concrete;
- upper walls and roof comprising minimum 0.6-mm base metal thickness (BMT) metal cladding and minimum 150 mm medium duty thermofoil faced blanket; and
- the northern wall of the warehouse will be steel or concrete slabs forming 10-m tall material bays.

The building will therefore be of a height and scale that would provide greater shielding than the existing northern bund, specifically for noise assessment location R3 and to a lesser extent for noise assessment locations R1 and R2.

It is proposed to maintain the northern noise bund until erection of the ARRC building and then to remove the bund to accommodate the ARRC access road and water treatment plant.

The northern noise bund will remain in place if the ARRC building is not constructed.

## 2.7 Product traffic movements

The proposed modification's traffic and transport objectives are to ensure safe access for heavy vehicles to the quarry site, efficient haulage between the quarry and existing brickworks and quarry operator's compound, while minimising impacts on the road network.

The consent conditions do not specify the average or maximum number of trucks approved to access the site.

There will be a peak of 10 heavy vehicle movements an hour, with the modification proposing to formalise the approved maximum product truck movements a day to a maximum of 100 movements.



The original EIS outlined up to 40 trucks a day (80 movements) would access the quarry (Douglas Nicolaisen & Associates 2003). Whereas the Environmental Assessment report (Benbow Environmental 2014) prepared to support MOD3, stated 'approximately' (rather than 'up to') 40 trucks a day are approved to access the site.

According to Condition 2 of the consent, the applicant is to carry out operations generally in accordance with the EIS and the subsequent environmental assessments supporting the respective proposed modification applications. Condition 3 of the consent notes if there is any inconsistency between the original EIS and subsequent environmental assessments, the most recent document shall prevail to the extent of the inconsistency. Therefore, it is considered that approximately 40 trucks (80 movements) are currently approved.

Traffic generation associated with quarrying operations is generally sporadic in nature with dispatch of product driven by weather conditions as well as product sales. The traffic impact assessment prepared to support MOD4 (withdrawn) reviewed weighbridge data from the quarry between September 2016 and February 2017 (Stanbury Traffic Planning 2017). This review found that over this six-month period average traffic generation was generally below the approved average of 80 movements a day however the maximum daily movements were significantly higher being up to 132 movements (66 trucks) per day (Stanbury Traffic Planning 2017).

The modification proposes to limit product truck movements to a maximum of 100 movements a day to formalise maximum traffic movements while not overly restraining operations in times of peak demand. The traffic impact assessment (summarised in Section 6.7 and contained in Appendix J) assesses a maximum of 100 traffic movements per day on Adams Road, the Elizabeth Drive/Adams Road intersection and the Elizabeth Drive/Luddenham Road intersection.

Quarry truck movements will be to and from the destinations that are accessible from the Elizabeth Drive east of the Adams Road intersection.

## 2.8 Road upgrades

Quarry trucks will access the site via Elizabeth Drive east of Adams Road with no heavy vehicles required to turn right from Elizabeth Drive into Adams Road. Accordingly, no upgrade to the Elizabeth Drive/Adams Road intersection is proposed as part of the proposed modification.

It is proposed to upgrade the pavement on the northern section of Adams Road, from a point approximately 40 m south of the site access intersection to the Adams Road/Elizabeth Drive intersection, to allow the current 3-tonne load limit to be lifted.

Minor splaying of the site access will also be required to allow a 19 m-in-length heavy vehicle to access the site.

## 2.9 Administrative modifications

Administrative modifications of some conditions of consent are required to align with current government policy and/or site conditions (ie reduced development footprint). These are detailed in Table 2.2.

**Table 2.2 Administrative modifications**

Condition <sup>1</sup>	Matter	Proposed modification
Appendix 1	Approved site layout	Site layout to be replaced by the site layout presented in Figure 2.1.
Schedule 1, Land, Proposed Development Schedule 3, Condition 13 Schedule 4, Condition 12 Notes: (a) Schedule 4, Condition 29 Schedule 4, Condition 40 and 41	Activities on the Commonwealth land (Lot 1 DP 838361)	Removal of references to activities, potential impacts and required management measures on the Commonwealth land.
Schedule 4, Condition 12	Noise impact assessment criteria	Revise this condition in accordance with the predicted noise levels determined in accordance with the Noise Policy for Industry (NPI) (EPA 2017) (refer Section 6.3 and Appendix F).
Schedule 4, Condition 7	Air quality monitoring	Revision of the wording of this condition to reflect change in sensitive receptors due to removal of activities on Commonwealth land.
Schedule 5 Condition 8	Community Consultative Committee	Removal of the requirement for a CCC as the previous quarry operator was unable to establish a CCC due to lack of interest from the community (NICS 2016).

1. DA No. 315-7-2003 (the consent) as modified 13 May 2015 (MOD3).

## 2.10 Construction of proposed new site components

### 2.10.1 Construction of new site components

The proposed modification comprises construction of the following site components in order to reopen the quarry, which are shown in Figure 2.1:

- upgrading/sealing the proposed access road from the weighbridge to Adams Road;
- minor splaying of the site access road/Adams Road intersection prior to use by product transport vehicles up to 19-m long;
- upgrading the internal site roads;
- removal of existing agricultural shed to accommodate the equipment laydown area;
- topsoil stripping in new stockpiling area to the north of the existing western stockpiling area; and
- installing site entry infrastructure including a weighbridge, wheel wash, site office, site shed and amenities.

The proposed modification also involves the removal of activities on Commonwealth-owned land, previously known as Lot 1 DP 838361 (now a part of Lot 101 DP 1236319) and modification of current surface water management system.

### 2.10.2 Construction hours

Construction work will occur during standard construction hours for approximately four to six weeks, which are:

- Monday to Friday 7:00 am to 6:00 pm;
- Saturday 8:00 am to 1:00 pm; and
- no construction work will take place on Sunday or public holidays.

### 2.10.3 Construction management and mitigation measures

Existing tracks and the new proposed internal road will be used during the construction of the site.

Plant and equipment laydown areas, waste, fuel and chemical storage locations will be confirmed as the design is finalised. They will be placed to minimise potential environmental impacts. Fuel and chemical containers will be in stored in vehicles or on bunded surfaces to prevent any leaks of hydrocarbons entering the environment.

There will be minimal temporary construction impacts. Any short-term impacts will be mitigated by the implementation of the management and mitigation measures outlined in Chapter 6 and consolidated in Appendix D.

There are two native trees that are within the approved disturbance footprint. These may need to be cleared. No other clearing of native vegetation is required (see Section 6.8).

The proposed modification does not include activities within, or impact, the vegetation along Oaky Creek.

## 2.11 Do nothing alternative

In its current state, the existing dormant quarry is neither compatible with the proposed Agribusiness zone nor the WSA. The approved access road to the quarry from the public road network through the Commonwealth land is no longer available. Without an approved alternative, no quarrying or major rehabilitation activities can occur on site.

Without approval of the proposed modification, the quarry will remain dormant and the void will remain unfilled, preventing the realisation of a number of key benefits, including:

- avoiding the sterilisation of a regionally significant resource as identified in the SREP No. 9 – Extractive Industry (No 2);
- fulfilling local and regional demand for quarry products as outlined in Section 3.7;
- eliminating the operational and visual incompatibility with the WSA, including concerns associated with water bodies, bird life and other wildlife which would potentially conflict with airport operations;
- providing the means to infill the quarry void and achieve a final, safe, stable landform to enable proposed agribusiness/industrial land use(s) in line with the long-term vision contemplated by the Aerotropolis SEPP (otherwise more than 50% of the site would be sterilised from potential future development and employment opportunities); and
- creating direct and indirect benefits to the local and regional economy, including:
  - providing employment for up to 15 quarry workers and 10 to 12 truck drivers;
  - providing clay and shale for the production of approximately 80 million standard bricks per year, worth approximately \$76 million – enough to construct around 8,000 houses per year; and
  - supporting the jobs of around 200 brick manufacturing employees.

# References

Benbow Environmental 2014, *Environmental Assessment Report for Epic Mining Pty Ltd*, 275 Adams Road, Luddenham, NSW, dated November 2014.

Douglas Nicolaisen & Associates Pty Ltd, 2003, *Environmental Impact Statement – Proposed Clay/Shale Extraction Operation – Lot 3 - 272 Adams Road Luddenham NSW*, prepared for Badger Mining Company Pty Limited 275 Adams Road Luddenham NSW.

EMM 2020, *Luddenham Luddenham Advanced Resource Recovery Centre – Noise and vibration impact assessment*. Report prepared for Coombes Property Group and KLF Holdings Pty Ltd by EMM Consulting Pty Limited.

Stanbury Traffic Planning 2017, *Traffic Assessment Clay/Shale Quarry 275 Adams Road, Luddenham*, prepared for Epic Mining.