

Executive Summary

INTRODUCTION

This *Environmental Impact Statement* (EIS) has been prepared by R.W. Corkery & Co Pty Limited to support a development application by Hy-Tec Industries Pty Limited (“the Applicant”). The application relates to the extension of the extraction area and overburden emplacement within the existing Austen Quarry (“the quarry”), as well as an extension to the operational life of the quarry. The extension of these quarry components and ongoing operation of the quarry is referred to as “the Proposal”.

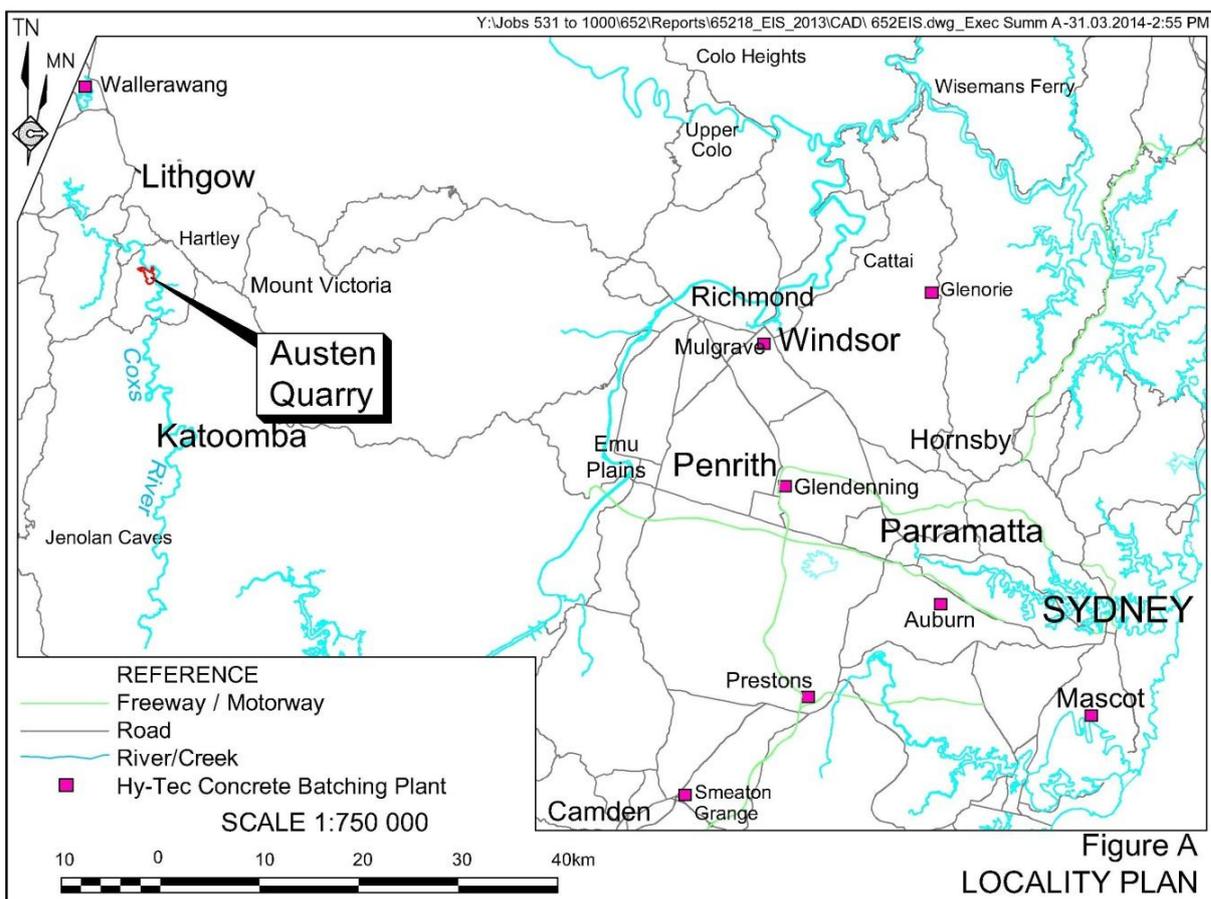
The Proposal is classified as State Significant Development (SSD) under the *State Environmental Planning Policy (State and Regional Development) 2011* and

consequently the approval authority is the Minister for Planning. As the Proposal is for SSD, an EIS is required to be submitted to support the application.

For the purpose of this document, the existing and proposed areas of disturbance are referred to as “Stage 1” and “Stage 2” respectively. The area which is the subject of the application is referred to as “the Stage 2 Site”.

THE SITE

The Site is located on rural land, owned by the Hartley Pastoral Corporation Pty Ltd (HPC), approximately 3.5km south-southwest of the village of Hartley and 10km south of Lithgow (see **Figure A**).



The Stage 2 Site covers an area of approximately 128ha and is located entirely within an area of freehold land that the Applicant leases from HPC.

Approved Stage 1 Area

The approved Stage 1 area incorporates the existing extraction area, overburden emplacement, processing areas and areas associated with transportation, administration and stockpiling operations (**Figure B**).

Stage 2 Extension Area

The Stage 2 Site would incorporate the components of the Stage 1 area, as well as the proposed extension to the extraction area and overburden emplacement (**Figure C**). The Stage 2 extraction area covers approximately 15.8ha and lies immediately to the southeast and east of the Stage 1 extraction area.

The proposed overburden emplacement would laterally extend the existing Stage 1 overburden emplacement by 9.9ha and increase its elevation to 810m AHD.

THE APPLICANT

The Applicant for the Proposal is Hy-Tec Industries Pty Limited, a fully owned subsidiary of Adelaide Brighton Ltd (Adelaide Brighton). Adelaide Brighton is a leading integrated construction materials and lime producing group of companies focused on the engineering, infrastructure and resource sectors.

The Applicant operates seven concrete batching plants throughout the Sydney metropolitan area and one plant at Wallerawang.

THE RESOURCE

The hard rock resource being quarried is most accurately described as a series of steeply dipping sequences of ‘metamorphosed, tuffaceous, acid igneous

rocks’ and has been identified as ‘metamorphosed rhyolitic rock’.

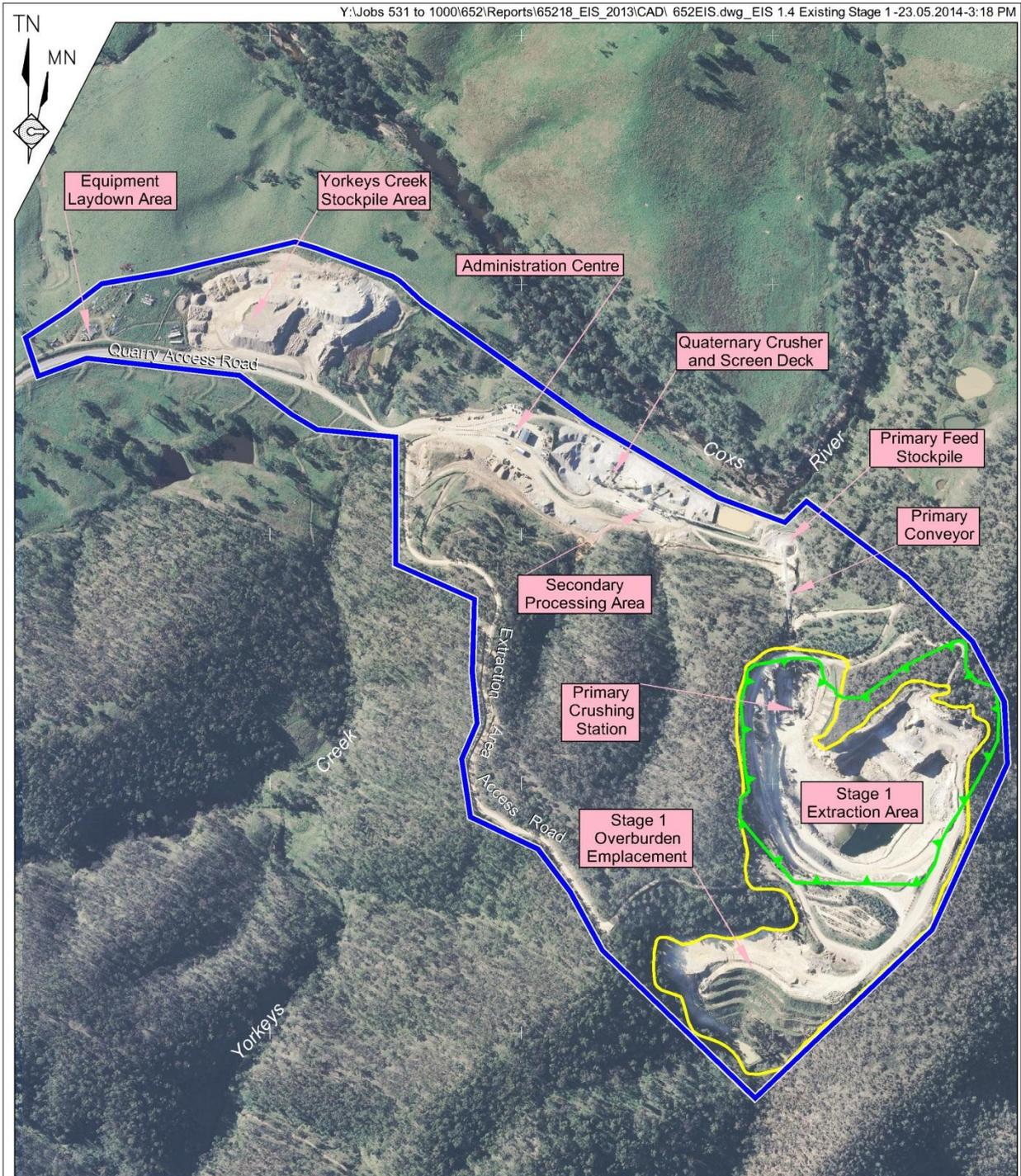
The approved Stage 1 extraction area provides for the extraction of 12.5Mt of rhyolite and overburden, of which approximately 3Mt of rhyolite remains. It is, however, noted that approximately two-thirds of this resource is located within the ridge on the northern side of the extraction area which has been retained as a visual barrier to reduce visual impacts of the extraction area when viewed from Hassans Walls. It remains the Applicant’s intention not to extract this ridge provided the Stage 2 extraction area is approved prior to mid 2015.

Exploration undertaken since 2011 has identified a further 44Mt of proven reserves of recoverable rhyolite within the extended ridgeline trending from the south through to the northeast of the existing Stage 1 extraction area.

NEED FOR THE PROPOSAL

The demand for the products of the Austen Quarry, used in the manufacture of concrete, road construction and rail works, is likely to increase over the next 35 years in response to the projected population growth for Sydney. Concrete in particular, is the key material required to underpin Sydney’s growth throughout this period. Notably, coarse aggregates such as those produced at the quarry, account for approximately 70% of the raw materials requirements of concrete.

Baseline assessment work of future demand for construction materials in the Greater Sydney region has estimated that by 2040 between 650Mt and 700Mt of coarse aggregates will be required to meet demand. As existing quarry operations within and surrounding Sydney exhaust current resources, the 44Mt of recoverable rhyolite identified within the Stage 2 Site would provide a significant contribution to this demand.



- REFERENCE
- Stage 1 Site Boundary
 - Stage 1 Extraction Boundary
 - Existing Limit of Disturbance (July 2013)
 - Current Activity Area

SCALE 1:10 000 (A4)

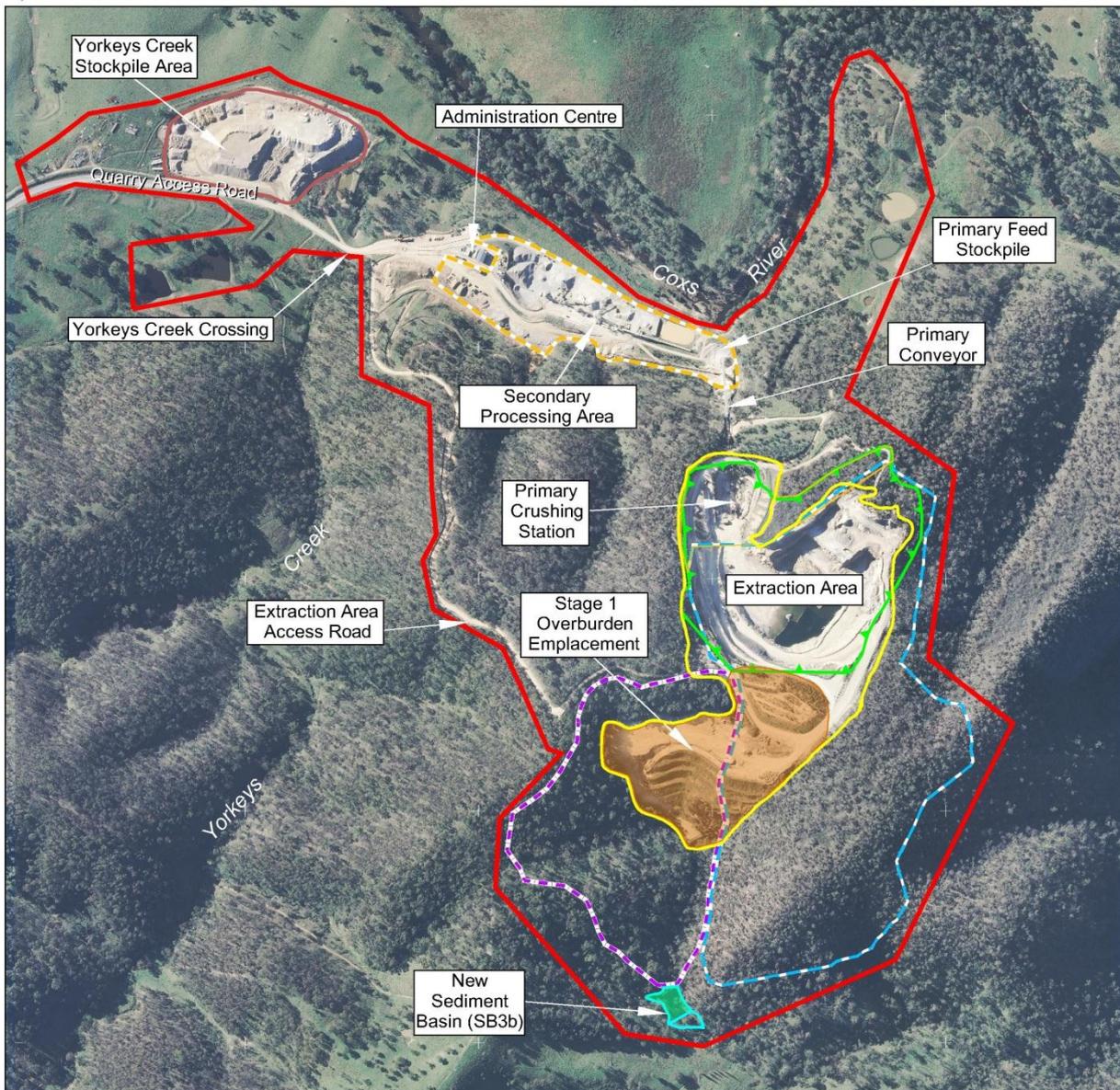
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Base Photograph Source: GeoSpectrum Australia Pty Ltd - Date: 13 April 2012

Figure B
EXISTING STAGE 1 SITE LAYOUT



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- REFERENCE**
- Stage 2 Site Boundary
 - ▲ Stage 1 Extraction Boundary
 - - - Proposed Stage 2 Extraction Boundary
 - Stage 1 Overburden Emplacement
 - · - · - Proposed Limit of Stage 2 Overburden Emplacement
 - - - Secondary Processing Area
 - Yorkeys Creek Stockpile Area
 - Existing Limit of Disturbance (July 2013)

Notes 1: Boundaries have been offset for clarity
2: The optimum design of SB3b remains to be confirmed and will follow additional review of local conditions by the Applicant and their hydrological consultants

SCALE 1:12 000 (A4)

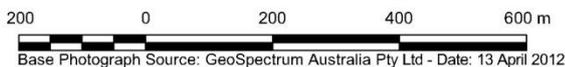


Figure C
 CONCEPTUAL STAGE 2 SITE LAYOUT



APPROVALS REQUIRED

Based upon the current design and understanding of relevant environmental issues, the Proposal would require the following approvals.

- Development consent under the *Environmental Planning & Assessment Act 1979* (EP&A Act). As SSD, approval is required from the Minister for Planning or as delegated by the Minister to the Planning Assessment Commission, the Director-General or to another public authority under Division 4.1 of the EP&A Act.
- Modification to Environment Protection Licence 12323 under the *Protection of the Environment Operations Act 1997*.
- A Water Access Licence issued by the NSW Office of Water (NOW) in accordance Part 2 of the *Water Management Act 2000* for extraction and use of groundwater intercepted by the quarry or surface water extracted from the Coxs River.

Additionally, the Proposal will require approval from the Commonwealth Minister for the Environment in relation to impacts on matters protected by the *Environment Protection and Biodiversity Conservation Act 1999*.

DESCRIPTION OF THE PROPOSAL

The Proposal for which the Applicant is seeking approval involves the ongoing operation of the existing quarry and an extension to the existing extraction area and overburden emplacement. A summary of key facts and statistics for the Proposal is provided on Page ES-17 and an overview of the critical features of the Proposal are presented as follows.

Objectives

The Applicant's principal objectives of the Proposal are to:

- secure access to the proven rhyolite resource, through an extension to the current approved extraction footprint, for the ongoing and long term operation of the quarry;
- extend the existing overburden emplacement for the long-term storage of unsaleable overburden;
- supply up to 1.1 million (M) tpa of quarry products to the Applicant's concrete batching plants and external markets;
- continue the extraction, processing, handling and delivery of quarry products in a safe, efficient and environmentally responsible manner.
- progressively rehabilitate the disturbance areas beyond the extraction area to provide for long-term nature conservation with minor grazing following completion of operations;
- develop and implement a biodiversity offset plan which, in conjunction with Site rehabilitation, would ensure no net loss of biodiversity values as a consequence of the Proposal;
- achieve the above objectives in a cost-effective manner to ensure the Proposal is viable.

Extraction and Overburden Emplacement

Extraction of rhyolite and overburden would continue to be undertaken using conventional drill and blast, load and haul methods. Vegetation would be initially cleared and available soil resources stripped to expose the underlying rock. Both the vegetation and soil would be retained on the Site for future use in rehabilitation.

Ripped overburden would then be excavated and transferred to the overburden emplacement. Harder overburden and rhyolite would be blasted to fracture the rock before it is excavated and transferred either to the overburden emplacement or primary crusher. Blasting would continue to be undertaken every one to two weeks with blast size varying according to the location within the extraction area but generally between 10 000t and 100 000t (average of approximately 60 000t).

Extraction is proposed to a depth of 685m AHD, approximately 60m deeper than the current extraction area floor (745m AHD) and 50m deeper than the footings of the primary crusher (735m AHD). The following general design criteria of the extraction area would be adopted (see **Figure D**).

- Operational Face Height: 15m.
- Operational Bench Width: 20-100m.
- Terminal Bench Width: 5m-10m.
- Face Angle: 70° (approximate).

Over the life of the Proposal, approximately 2 200 000m³ of overburden would be removed from the extraction area. Applying a swell factor of 1.3, this equates to a volume of approximately 2 860 000m³ requiring placement within an extended overburden emplacement. As illustrated on **Figure D**, the lateral extension of the existing overburden emplacement would require three additional vertical lifts to a maximum elevation of 810m AHD with the toe of the emplacement extended down to 710m AHD.

Processing

With the exception of the installation of a mobile pugmill within the Yorkeys Creek stockpile area (to produce a range of road pavement materials from the products stockpiled within the area), no change to the current processing operations are proposed. These operations involve the primary

crushing of the rhyolite within the Stage 1 extraction area, with the material transferred by conveyor to the secondary processing area where a further three stages of crushing and screening is undertaken to produce the various products.

Further blending and air separation is also undertaken as required to produce customised sand and road pavement products.

Products and Product Stockpiling

The Applicant produces a wide range of aggregates, rail ballast, gabion material, blended road pavement products, manufactured sand, select fill, and drainage materials. A number of these and other products are customised to meet the customers' individual specifications.

Stockpiles of the various aggregates and blended products are maintained within the Secondary Processing Area where up to approximately 80 000 tonnes of products can be stored. The bulk of excess products are stockpiled within the Yorkeys Creek stockpile area (see **Figure C**) which the Applicant estimates currently contains between 600 000t and 700 000t of products. Through reprocessing of this material, which would increase the marketability of the products, and supply of proposed large road works projects, the Applicant is confident that the volume of material currently stockpiled will be reduced over time and ultimately removed completely.

Product Distribution

The Applicant proposes to maintain the approved maximum product despatch level of 1.1Mtpa. Product despatch would continue to be via a single Site exit located on Jenolan Caves Road with trucks turning right on to Jenolan Caves Road and then either left or right at the Great Western Highway in the direction of Lithgow and the Blue Mountains respectively (see **Figure E**).

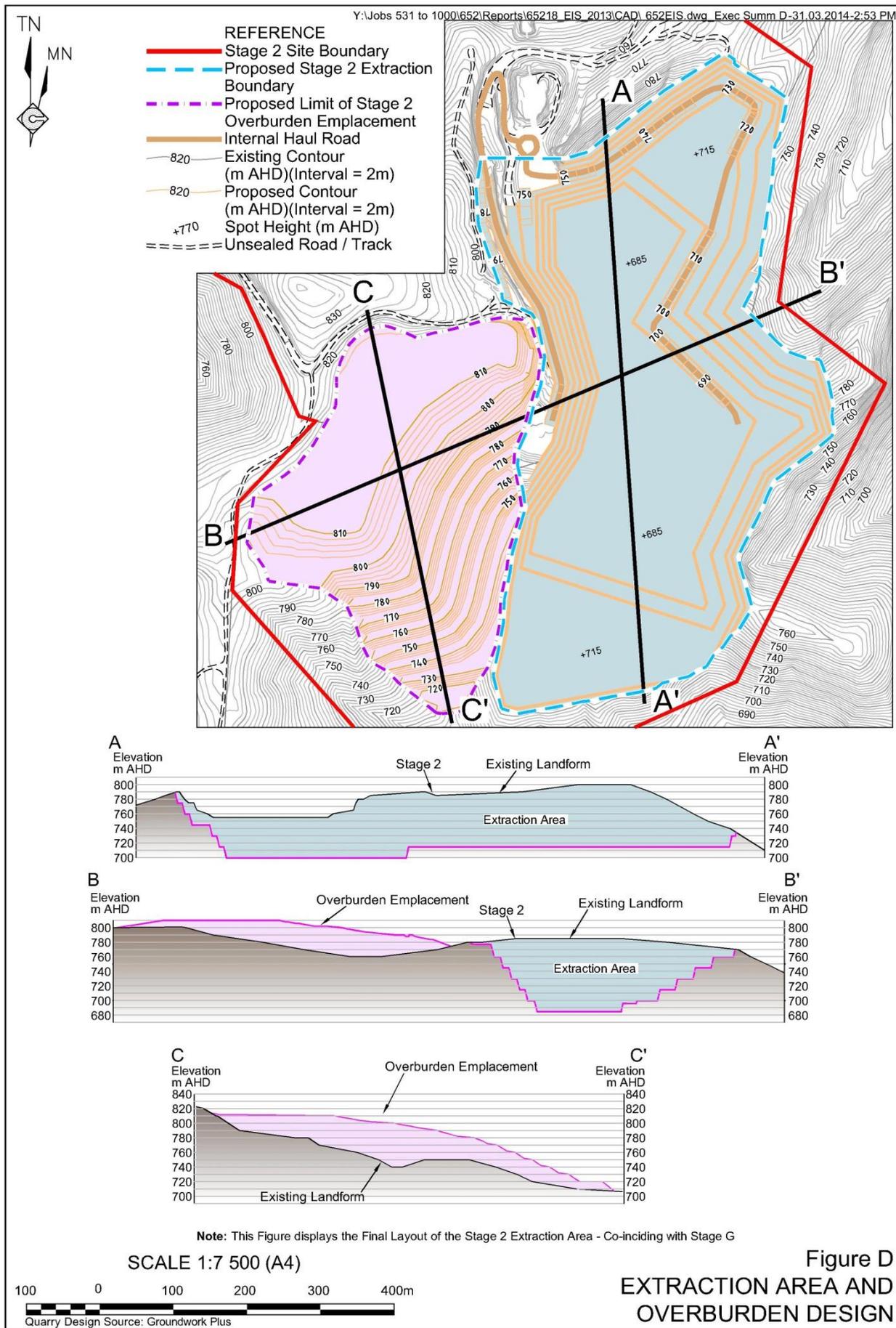


Figure D
EXTRACTION AREA AND
OVERBURDEN DESIGN



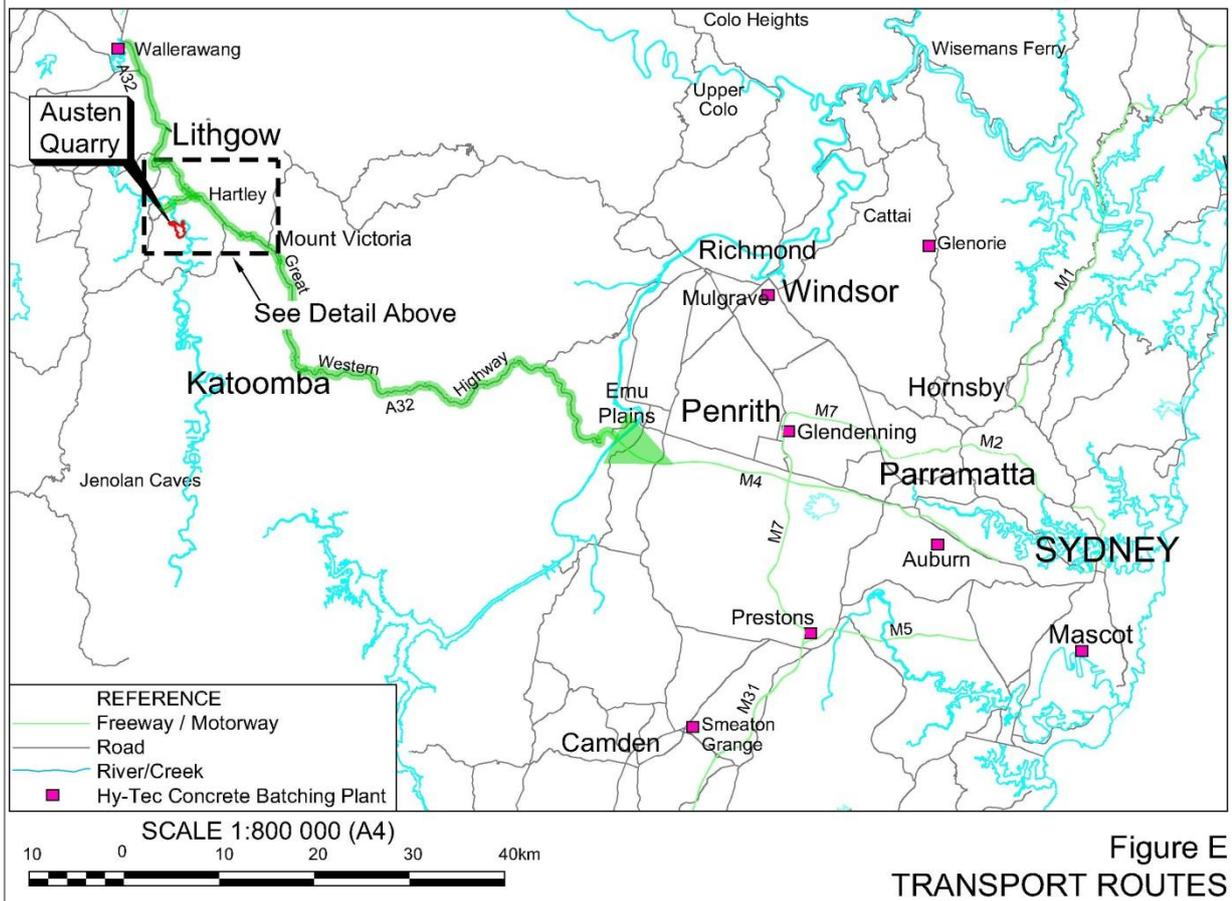
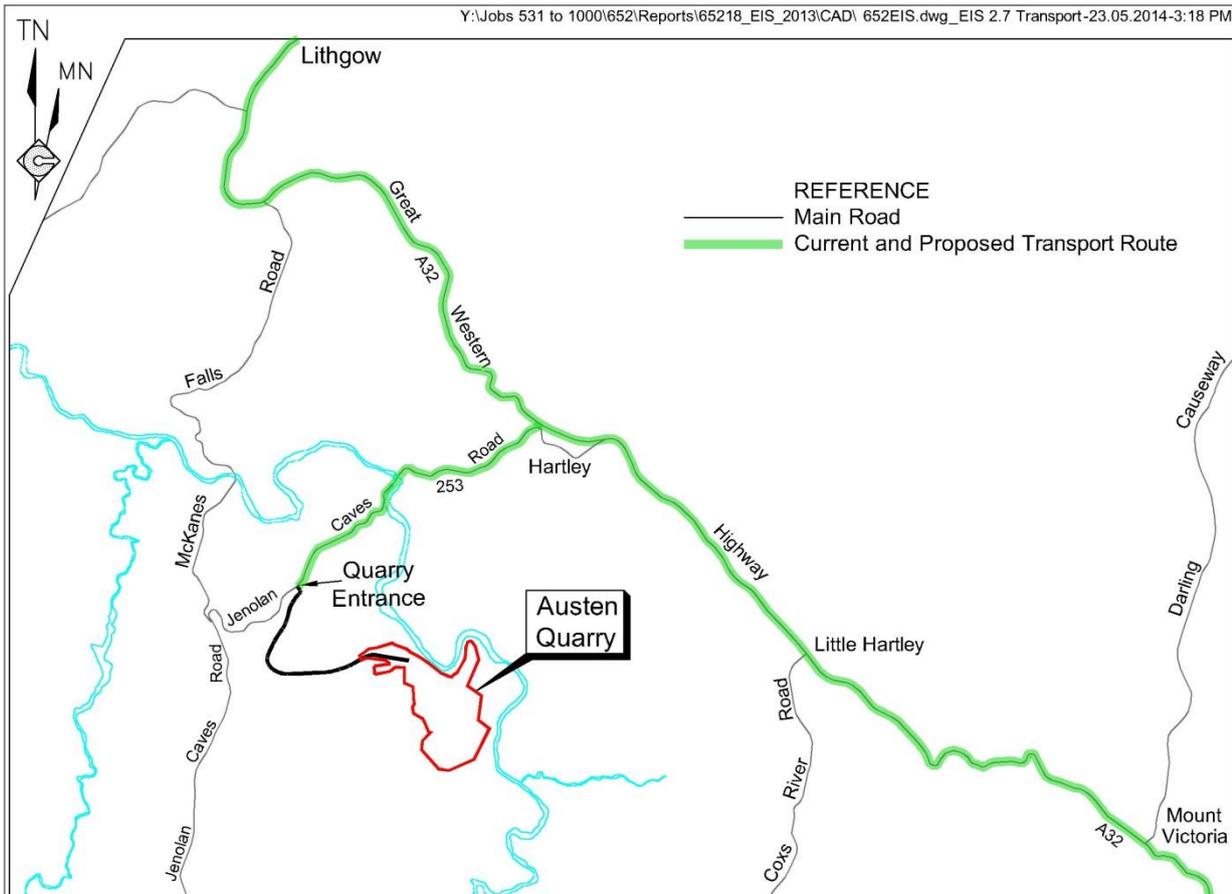


Figure E
 TRANSPORT ROUTES

The majority of laden trucks (estimated at 70-95% depending on requirements) would turn right at the Great Western Highway and travel towards Sydney.

Current production averages approximately 750 000tpa, however, it is anticipated that maximum daily transport levels would be reached with greater frequency under the Proposal. This would result in two product despatch scenarios:

Scenario 1:

Predominantly Sydney Customers
Average 125 loads / Maximum 180 loads.

Scenario 2:

Local and Sydney Customers
Average 150 loads / Maximum 250 loads

Scenario 1 would be the most common occurrence, except for those days when local projects are supplied, e.g. to supply road works between Lithgow and Mount Victoria.

Hours of Operation

The proposed hours of operation are presented in **Table ES1**. The Applicant proposes to extend periods during which extraction and processing would be undertaken and allow for maintenance 24 hours a day while blasting and the loading and despatch of quarry products remain at the same hours as existing operations.

Table ES1
Proposed Hours of Operation

| | Monday to Friday | Saturday | Sundays / Public Holidays |
|--------------------------------------|-------------------------|------------------|----------------------------------|
| Blasting* | 10:00am to 3:00pm | No Activity | No Activity |
| Extraction and Processing | 6:00am to 10:00pm | 6:00am to 3:00pm | No Activity |
| Loading Trucks and Product Despatch* | 5:00am to 10:00pm | 5:00am to 3:00pm | No Activity |
| Maintenance | 24 hours/day – Any day | | |
| * No change from existing operations | | | |

Rehabilitation

The final land use for the Stage 2 Site would return some areas to low intensity agriculture where this is feasible while the remaining areas would be reserved for nature conservation. This would reflect the pre-quarry uses of the land. The Applicant would continue progressive rehabilitation where available including the maintenance of a nursery for native flora including the threatened *E. pulverulenta*.

The final landform would comprise a single appropriately bunded, fenced and signed final void, and a shaped and revegetated overburden emplacement. It is expected that water would accumulate within the void, primarily in response to local rainfall conditions with some minor contribution from groundwater. The retention of a small void with a fluctuating body of water would provide habitat for native flora and fauna. It is not expected that this water would become saline. Remaining areas would have infrastructure removed and would be profiled to facilitate final land use.

CONSULTATION, ISSUE IDENTIFICATION AND PRIORITISATION

In order to undertake a comprehensive environmental impact assessment of the Proposal, appropriate emphasis needs to be placed on those issues likely to be of greatest significance to the local environment, neighbouring landowners and the wider community. These issues (and potential impacts) were identified through a program of community and government consultation, preliminary environmental studies and literature reviews. This was followed by an analysis of the risk posed by each potential impact in order to prioritise the assessment of the identified environmental issues within the EIS.



Based on the issues identified throughout the consultation process and the risk ratings allocated to the potential environmental impacts of these, the following order has been established for addressing environmental issues within this document.

1. Land Resources.
2. Traffic and Transportation.
3. Visibility.
4. Surface Water.
5. Groundwater.
6. Terrestrial Ecology.
7. Aquatic Ecology.
8. Noise, Vibration and Blasting.
9. Air Quality.
10. Indigenous Cultural Heritage.
11. Non-Indigenous Heritage.
12. Hazards.
13. Agricultural Resources.
14. Socio-Economic Setting.

It is noted that Land Resources and Socio-Economic issues have been placed out of strict priority order for the purposes of this document. Land Resources is included as the first assessment section as this information provides baseline information on which several other assessment areas rely. The socio-economic assessment draws on discussions and conclusions from previously-discussed issues and as such is placed after these have been addressed.

ENVIRONMENTAL FEATURES, SAFEGUARDS AND IMPACTS

The components and features of the existing environment within and surrounding the Stage 2 Site have been studied in detail and the proposed extension to the existing extraction area and overburden emplacement designed to avoid or minimise impacts on that environment. A brief overview of the prioritised environmental issues, the proposed safeguards and the assessed level of impact are set out below.

Local Setting

The Stage 2 Site is located within the large landholding of HPC which provides a significant buffer to neighbouring properties. Several residences are located nearby in the village of Hartley, along Jenolan Caves Road and on roads in proximity to the Site to the northwest and east of the Site.

Surrounding land uses include agricultural enterprises, industrial equipment storage, nature conservation, general recreation, tourism and rural residential or rural lifestyle settlements. The Stage 2 Site is also situated in the upper reaches of the Sydney Drinking Water Catchment.

Land Resources (Topography, Soils, Land Capability and Extractive Resources)

Local topography is dominated by the Coxs River which drains to the east and adjoins the Site to the north and east. On the Stage 2 Site, the topography rises from the Coxs River as a series of ridges incised by gullies, including Yorkeys Creek which flows through the Stage 2 Site. The Proposal would result in the removal of sections of several small ridges which would increase the visibility of quarry operations from surrounding vantage points. This potential impact on local visual amenity has been the subject of a specific and detailed visual impact assessment.

The soils of the Stage 2 Site are shallow, gravelly, quartz rich Lithosols with little to moderate structure. Based upon field observations and a review of the physical and chemical data, soil-related design and operational safeguards were identified, including soil stripping and stockpiling procedures. With the adoption of the proposed soil stripping and stockpiling procedures, the impacts associated with topsoil/subsoil removal, storage and re-use is assessed to be minimal.

The Stage 2 Site has been assessed as having a Land and Soil Capability as Class 6 indicating severe limitations for land use. Soil fertility is very low and, agriculturally, the land is suitable only for low productivity grazing (with limitations). It is considered likely that the landform could be rehabilitated to provide an equivalent land capability class.

Traffic

A traffic assessment completed for the Proposal used traffic counts on Jenolan Caves Road and publicly available information regarding traffic levels and future upgrades to the Great Western Highway to predict traffic levels and impacts of the Proposal. Although the currently approved product despatch level of 1.1 Mtpa is not proposed to change, it is anticipated that maximum daily transport levels would be reached with greater frequency. The assessment also considered the proposed extension to the quarry life to 2050.

Relevant impacts to traffic levels, intersection operation and safety have been considered. Notably, the assessment considered the use of the State highway network via the Great Western Highway through the Blue Mountains given the relative proximity of businesses and residences to the highway has been the cause of safety concerns in the past.

The traffic assessment concluded that the predicted cumulative impacts of quarry transport would be acceptable. While noting that the proportion of heavy vehicle traffic on Jenolan Caves Road attributable to the quarry would be relatively high (approximately 24% on peak production days), there would be no change to the level of service (LOS) experienced on Jenolan Caves Road (LOS A on weekdays and LOS B on Saturdays). While the LOS of the Great Western Highway has been determined as B or C in sections, the

contribution of the Proposal to total traffic is so small (0.47% of the overall traffic at Leura in 2025 reducing to 0.41% in 2035) as to have no impact on this.

The performance of the Jenolan Caves Road – Great Western Highway intersection during peak traffic periods is predicted to go over capacity, i.e. result in unacceptable delays, in 2024. It is noted, however, that this decrease in LOS would be as a result of traffic growth on the Great Western Highway, not Proposal related traffic. Furthermore, upgrading of this intersection is contained within plans of the NSW Roads and Maritime Service (RMS) for the Great Western Highway.

While the risk of a traffic incident involving a truck travelling to or from the quarry cannot be completely eliminated, the safeguards and procedures included in the Applicant's Road Truck Traffic Management Plan would maximise the safety of road users and reduce the risk of incidents associated with the quarry trucks as low as reasonably possible. Furthermore, the Applicant proposes to implement the following measures.

- Maintain the existing complaints management system.
- Continue to implement the Hy-Tec Chain of Responsibility – Driver Check System.
- Logistically plan transport operations, where feasible, to minimise impacts to the transport environment.

Visibility

The current and proposed quarry operations are and would be visible from a number of public and private vantage points surrounding the Stage 2 Site. The design of the quarry extraction area, orientation of active quarry faces and sequence of quarry development has been chosen to reduce the areas of the Stage 2 Site visible at any one time.

Additional visual impact mitigation measures such as progressive rehabilitation, application of a bituminous film to the completed or inactive extraction faces, and drawdown of stockpiled material within the Yorkeys Creek stockpile area have been proposed to mitigate the effect of any exposed areas from the various vantage points surrounding the Stage 2 Site.

This approach would minimise impacts to visual amenity, however, some mitigated, obscured or distant views of operations within the quarry would continue to be available from some locations, most notably:

- Hassans Walls and associated lookouts (distant and obscured);
- Mount York and Mount York Road (obscured and mitigated);
- Kanimbla locality (notably elevated residences of Kanimbla Drive and Megalong Place) (distant);
- McKanes Falls Road (limited and obscured); and
- Great Western Highway (obscured).

Hy-Tec has committed to an ‘adaptive management’ approach and annual monitoring of visual impacts to manage, to the greatest extent possible, the residual impacts on visual amenity.

Surface Water

Surface water would continue to be appropriately managed to limit the discharge of sediment-laden water or potentially contaminated water (exceeding relevant criteria) from the quarry, thereby ensuring a minimum level of impact. Additional dams would be constructed, or existing dams modified, to provide the level of control required.

The surface water assessment determined there would be a very small reduction in the annual runoff volume (7.5MLpa) reporting to the Coxs River. This reduction would be

effectively imperceptible given the very small proportion this represents of flow within the Coxs River.

Assuming the preparation and implementation of an Erosion and Sediment Control Plan (ESCP), which would provide the final designs or drawings and construction requirements for each of the dams and basins of the Stage 2 Site, monitoring regime and maintenance measures, it is assessed that erosion and sedimentation on the Stage 2 Site would be minimised as far as reasonable practical.

Uncontrolled discharges from the Stage 2 Site would be minimised and only occur as a result of rainfall exceeding a 5-day 95th percentile event (56.4mm). While the concentration of some parameters could potentially exceed the Locally Derived Water Quality Objectives (LDWQOs) for the receiving environment, it has been determined that these levels would pose no genuine risk to the Environmental Values of the receiving waters. Furthermore, the likely concentrations (and exceedances) would almost certainly reflect the local geology or land uses rather than activities of the Proposal.

The surface water assessment also demonstrated a neutral or beneficial impact on the Sydney Drinking Water catchments indicating that the Proposal achieves the objectives of the *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011*.

Groundwater

The proposed floor of the extraction area would be below the existing standing water level (~730m AHD), with dewatering required to enable extraction below this elevation. However, this groundwater source is isolated from surrounding groundwater by local topographic features including the Coxs River, Yorkeys Creek and other local gullies that act as natural groundwater discharge points and limit lateral groundwater movement.

The main changes to the local hydrogeological setting would occur as a result of:

- the physical removal of groundwater contained within the extracted rock and cone of depression extending from the base of the extraction area (“in situ groundwater”); and
- continued seepage from surrounding fractured rock to the extraction area void.

An analytical methodology was used to estimate the two components of groundwater loss. This method assumed the lowering of the groundwater by 45m immediately surrounding the extraction area. Based on an observed hydraulic gradient of 20%, a cone of depression extending a distance of approximately 225m from the perimeter of the extraction area was predicted. Within this cone of depression, it is estimated that an average of 3.7ML of in situ groundwater and 4.3ML of additional seepage would be removed from the aquifer annually.

Once the drainage of in situ groundwater is complete, the water balance would return to pre-quarry conditions where the volume of rainfall infiltration is equal to the volume of groundwater discharge into the adjacent drains (including seepage to the extraction area). Given the relatively steep hydraulic gradients, mounding of groundwater would still occur and groundwater would continue to flow toward Yorkeys Creek, even though this is 10m to 15m more elevated than the floor of the extraction area.

The risk of groundwater contamination through operational activities (including blasting and use of hydrocarbons) is considered very low due to the low porosity characteristics of the rhyolite (0.7%), its resistance to fracturing and the preferential in-flow of groundwater to the void rather than drainage from it. This is likely to prevent contamination due to blasting or spills from reaching the groundwater.

Terrestrial Ecology

Six vegetation communities and two derived communities were identified and mapped within the Site with none meeting the criteria for an Endangered Ecological Community (EEC). A residual impact on native vegetation in the order of 26.5ha would be unavoidable, however, this would be adequately offset by the conservation of 94.3ha of adjoining and equivalent vegetation as part of a proposed biodiversity offset area.

A single flora species, listed as threatened under NSW (*Threatened Species Conservation Act 1995*) and Commonwealth (*Environment Protection and Biodiversity Conservation Act 1999*), was recorded (*Eucalyptus pulverulenta*). Removal of an estimated 721 individual plants would be unavoidable, however, this would be adequately offset by the conservation of an estimated 1 850 individual plants within the biodiversity offset area and inclusion of this species in rehabilitation of the final landform.

A further 12 fauna species, listed as threatened under the TSC Act and/or EPBC Act, have also been recorded on or adjacent to the Site. Impacts on these species would be restricted to minor losses of foraging, breeding or roosting habitat. Assessment of Significance completed for each species has confirmed that assuming the adoption of the proposed mitigation and control measures, including establishment of the biodiversity offset area, these impacts would not be significant.

Hy-Tec would continue to incorporate *Eucalyptus pulverulenta* in progressive rehabilitation and manage a nursery for cultivating seeds and saplings of various native vegetation species. The legal protection and management of an area of 94.3ha dedicated to a biodiversity offset, when combined with final rehabilitation of disturbed areas, would provide for the long-term biodiversity conservation of both flora and fauna species.

Aquatic Ecology

The Stage 2 Site is located within the Mid Coxs River catchment of the Hawkesbury-Nepean catchment. The catchment has been subject to degradation as a result of extensive clearing and modification to some creeks by urban developments. Notably, the flow regime of the section of the Coxs River within which the Stage 2 Site is located has been impacted by land clearing, regional climatic variations, and the construction and operation of Lyell Dam.

Risks to the aquatic environment and receiving waters would be determined by the proximity of works to the Coxs River and associated drainage lines, and the effectiveness of the proposed management measures. An aquatic ecology assessment has concluded that, assuming the implementation of various management measures, impacts on local water quality as a result of the Proposal would be minor and reflective of the negligible impacts demonstrated through regular monitoring that have occurred since quarry operations began in 2005.

The predicted groundwater drawdown would have a minor impact on base flows to the local gullies within this cone of depression. This would not result in any significant impact on the River Oak riparian forest vegetation community which is the only potential surface groundwater dependent ecosystem (GDE) on or adjoining the Stage 2 Site. Furthermore, the potential for sub-surface GDEs to occur within the groundwater of the rhyolite hosted aquifer is considered very low. Even if present, however, the spatial extent of impact would be highly restricted.

No significant impact on threatened aquatic species or riparian conditions is considered likely.

Noise

The existing noise environment surrounding the quarry is influenced by a variety of factors including traffic on Jenolan Caves Road and local roads, agricultural equipment, flow of the Coxs River, stock, wind in trees, wildlife, as well as noise associated with existing Austen Quarry operations. Background noise levels have been established around the Austen Quarry and proposal-specific criteria developed.

With limited exception, the results of noise modelling indicate that compliance with Project Specific Noise Criteria would be easily achievable. A very minor (1dB(A)) exceedance of the Project Specific Noise Criteria is predicted at a single residence. This exceedance was only predicted under conditions which combine temperature inversion and noise enhancing winds towards this residence when all equipment is operating at full capacity. Notwithstanding the rarity of such an occurrence, the Applicant has committed to implementing a Noise Compliance Assessment post-approval.

The traffic generated by the Proposal would result in a very minor increase (<0.5dB) in the road traffic noise levels received at adjoining residences. The maximum noise levels of a truck pass-by at night is likely to exceed sleep disturbance criteria at residences located very close to Jenolan Caves Road. However, a review of noise monitoring data indicates that this is a feature of the existing noise setting and therefore the incremental impact of the Proposal would not significantly contribute to this.

As blasting practices would not be modified from those currently implemented, no exceedance of blasting noise or vibration criteria are expected.

Air Quality

The air quality assessment completed for the Proposal has found that compliance with the annual average air quality criteria would be comfortably achieved. The assessment against 24-hour criteria highlights that on days when blasts occurs the incremental contribution of the Proposal to the concentration of airborne particulate matter would be elevated (but below the nominated criteria).

Given the infrequent nature of blasting, and by scheduling blasts (as far as practicable) for periods of emission mitigating wind conditions, the Applicant would be able to reduce the concentration of airborne particulates received at residences surrounding the Site.

Cultural Heritage

Background research, field investigations and consultation with Aboriginal stakeholders was completed in 2013. No sites of Indigenous or historic heritage significance or potential archaeological deposits were identified or observed within the areas that would be disturbed by the Proposal.

As the Applicant proposes to extend existing protocols for the unexpected discovery of items or sites of heritage significance, there are no archaeological or cultural constraints to the Proposal.

Hazards

Potential hazards associated with the Proposal include those caused by bush fires, traffic incidents, handling of hazardous material and through public misadventure.

A series of management and mitigation measures would be implemented or existing controls extended to address the likelihood and significance of potential impacts from the hazards. Generally these procedures would provide control measures to limit the

likelihood of events occurring, mitigation measures to manage the significance of these events were they to occur and emergency procedures for personnel to follow if involved in an incident.

Socio-Economic

Adverse socio-economic impacts of the Proposal would relate primarily to emissions, the increased visibility of the Stage 2 Site and impacts on regional amenity and tourism, and the impacts on residents and local communities along the transport route.

Assessment of these impacts has determined that the residual impacts would be relatively minor after the implementation of management and mitigation measures. Furthermore, the comparatively low level of these impacts, which would not change significantly as a result of the Proposal, are well understood by residents surrounding the quarry and those adjacent to the transport route. As a result it is not anticipated that there would be a significant change in the current level of social impact.

Positive socio-economic impacts would be generated by the ongoing direct and indirect employment provided by the quarry, along with the continued and long-term contribution to the local economy through support of local businesses and services. In addition the Proposal provides for the removal, processing and despatch of products important for the continued growth and prosperity of NSW. The estimated consumption of these products to 2040 has been estimated to be between 650Mt and 700Mt. At a more local level, the estimated annual expenditure of \$5 million would have considerable economic benefits.

CONCLUSION

The Proposal has been designed to address the issues raised by the community and all levels of government, as well as the principles of ecologically sustainable development. The Proposal provides for the continued extraction, processing, sale and despatch of products which would be significant in extending employment opportunities and maintaining stimulus to the local economies of Lithgow and surrounding communities. The ongoing operation of Austen Quarry for 30 years would provide a range of raw materials for ongoing growth throughout the Lithgow LGA and the Sydney metropolitan region.

In light of the assessments presented throughout the EIS, it is concluded that the Proposal could be developed and operated in a manner that would satisfy all relevant statutory goals and criteria, environmental objectives and reasonable community expectations.

This document and the range of specialist consultant studies undertaken have identified that the Proposal should proceed because it would:

- contribute towards satisfying the demand for construction materials, particularly within Sydney and the Lithgow City LGA;
- reduce risk levels associated with possible incidents and impacts on the environment to an acceptable level;
- have a minimal and manageable impact on the biophysical environment;
- satisfy sustainable development principles;
- provide for continuing and future use of the Site for nature conservation and low intensity agricultural use;
- promote continued growth in economic activity in the Lithgow City LGA; and
- address the actual and perceived social impacts.

SUMMARY OF KEY FACTS AND STATISTICS

| Applicant | <ul style="list-style-type: none"> Hy-Tec Industries Pty Limited. | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------|----------|---------------------------|----------|-------------------|-------------|-------------|---------------------------|-------------------|------------------|-------------|-------------------------------------|-------------------|------------------|-------------|-------------|------------------------|--|--|
| Application Area | <ul style="list-style-type: none"> Total area of the Site = 128.3ha. | | | | | | | | | | | | | | | | | | | | |
| Area of Disturbance ¹ | <ul style="list-style-type: none"> Quarry Access Road (2.4km x 12m) = 2.9ha. Stage 1 Extraction Area (including the primary crushing station) = 12.0ha. Stage 2 Extraction Area (including existing disturbance) = 28.3ha. Stage 2 Extraction Area (excluding existing disturbance) = 15.8ha. Stage 1 Overburden Emplacement ~ 6.6ha. Stage 2 Overburden Emplacement (includes existing disturbance) = 13.5ha. Stage 2 Overburden Emplacement (additional disturbance) = 9.9ha. Processing area (stockpile areas, processing plant, offices, amenities and workshops) = 6.1ha. Yorkeys Creek Stockpile Area = 4.4ha. Sediment Basin 3b ~ 0.8ha. Ancillary operational areas ~2ha. Total proposed disturbance = 57.1ha. | | | | | | | | | | | | | | | | | | | | |
| Project Overview | <ul style="list-style-type: none"> Rhyolite (hard rock) resource. Project Application sought for 30 years beyond 2020. Proven Reserve of 39 million tonnes of recoverable rhyolite. Approximately 4.4 million tonnes of overburden. Production of hard rock aggregates, road construction materials, landscaping products and other specialty products. Extraction by drill and blast, load and haul methods. No changes to current processing operations proposed. Maximum production rate of 1.1 million tpa (no increase proposed). Access via a sealed Quarry Access Road off Jenolan Caves Road (no change proposed). Estimated employment: 20 full-time persons (an increase of 4 persons). Hours of Operation (minor proposed change). <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Monday to Friday</th> <th>Saturday</th> <th>Sundays / Public Holidays</th> </tr> </thead> <tbody> <tr> <td>Blasting</td> <td>10:00am to 3:00pm</td> <td>No Activity</td> <td>No Activity</td> </tr> <tr> <td>Extraction and Processing</td> <td>6:00am to 10:00pm</td> <td>6:00am to 3:00pm</td> <td>No Activity</td> </tr> <tr> <td>Loading Trucks and Product Despatch</td> <td>5:00am to 10:00pm</td> <td>5:00am to 3:00pm</td> <td>No Activity</td> </tr> <tr> <td>Maintenance</td> <td colspan="3">24 hours/day – Any day</td> </tr> </tbody> </table> | | Monday to Friday | Saturday | Sundays / Public Holidays | Blasting | 10:00am to 3:00pm | No Activity | No Activity | Extraction and Processing | 6:00am to 10:00pm | 6:00am to 3:00pm | No Activity | Loading Trucks and Product Despatch | 5:00am to 10:00pm | 5:00am to 3:00pm | No Activity | Maintenance | 24 hours/day – Any day | | |
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| Maintenance | 24 hours/day – Any day | | | | | | | | | | | | | | | | | | | | |
| Capital Investment Value | <ul style="list-style-type: none"> Up to \$2.2M (for the purchase of two additional haul trucks [\$800 000 per truck] and one additional front-end loader [\$600 000]) to be outlaid over several years from receipt of development consent. | | | | | | | | | | | | | | | | | | | | |

¹ The areas quoted are based on the layout presented as **Figure C**.

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