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9.0 PROJECT JUSTIFICATION

Key points

- The mine represents an investment in both the local community and the national economy. The economic benefits are considerable, and have already been highlighted in previous chapters;
- The social benefits, principally the securing of employment in a region with limited opportunities for alternative employment, are significant in the Upper Hunter;
- As the proposed development is an extension of an already operating mine, new environmental impacts are minimal;
- Where impacts have been identified, effective management strategies have been established; and
- Overall, approving the proposal has many social, environmental and economic positives, while the few negative impacts are manageable.

9.1 Methodology

The *EP&A Regulation, 2000* requires that an EIS include:

“The reasons justifying the carrying out of the development or activity in the manner proposed, having regard to biophysical, economic and social considerations, including..... the principles of ecologically sustainable development.”

While the environmental impacts of the project will be minimised, any impacts that do occur are exceeded by the environmental and socio-economic benefits from the project. This section draws together a brief summary of both the impacts and the benefits of the project and justifies the development of the proposed No. 1 Open Cut Extension.

9.2 Project Findings

9.2.1 Biophysical Environment

Relevant components of the biological and physical environment were investigated during the course of the project development. The findings of these are summarised in the following:

WATER QUALITY

Surface Water

The proposed No. 1 Open Cut Extension will not significantly affect surface water quality of the affected lands. Clean water runoff will continue to be segregated from mine water via the maintenance of drains, diversion channels, sedimentation and mine water dams. The continued mining will have negligible impact on local and regional watersheds. Significant areas will be rehabilitated and returned to the catchment areas of Sandy or Muscle Creeks and during the next year. There will be a net reduction in watersheds contributing to the mine water system by way of clean water diversions for Catchment Qc5.

Groundwater

There will be no impact in terms of effects upon beneficial use of groundwaters or on high-quality alluvial aquifers. There are no DLWC registered water bores near the No. 1 Open Cut Extension that are likely to be impacted by the proposed extension. No substantial alluvial aquifers, normally associated with high quality groundwater resources, will be affected by the proposal. The nearest alluvial lands are located 3 km to the west along the Hunter River.

Computer modelling and simulation of the water regime for the life of the No. 1 Open Cut Extension has predicted that there will be sufficient on-site water storage to enable MCC to continue as a nil discharge mine. The results of sensitivity analysis of the mine's water balance indicates that for dry and median rainfall conditions the mine will operate with a water deficit. The water budget will be in excess for all years of wet conditions. It is proposed to manage this excess by on-site storage which can be drawn upon during years of water deficit. It has been recommended that the mine water management system be regularly reviewed.

The proposed No. 1 Open Cut Extension mines through strata and groundwater regimes already disturbed by mining. Mining will lower the water levels in the Greta Coal Measures to the base of the Loder Seam over a small area. The Loder Seam contains brackish water and is not considered a groundwater resource.

The proposed mining should improve the groundwater regime in the area because a large portion of mined workings will have been removed and replaced with spoil, creating a better environment for groundwater recovery and improvement in groundwater quality.

NOISE AND VIBRATION

An assessment has been conducted to determine the noise and vibration impact of the No. 1 Open Cut Extension. Modelling results show minor exceedances of night-time noise goals at various residential locations under noise-enhancing atmospheric conditions. The recommendations made with regard to mitigating the predicted noise exceedances include regular compliance monitoring and management of

noise emissions under adverse weather conditions. Recommendations have also been given regarding noise and vibration compliance monitoring procedures.

It is concluded that the No. 1 Open Cut Extension proposal can operate without adversely impacting upon the acoustical amenity of any non-mine owned residential receiver.

AIR QUALITY

The proposed No. 1 Open Cut Extension represents a continuation of mining operation at similar production rates and the utilisation of the same, or very similar, types and numbers of mining equipment. If there are to be any changes to the equipment used it is likely to be a small reduction in the number of pieces of equipment utilised. There will be very little change in the level of air emissions from MCC operations. Approximately 50% of the overburden to be removed will be 'free dig' which will reduce dust impacts associated with blasting.

An assessment of impacts was undertaken utilising a computer model and focused on testing for compliance with annual average concentrations of PM₁₀ and TSP and dust deposition rates. Allowance was made for a background for all other sources that could not be accounted for directly in the model. It was concluded that no properties would be expected to experience concentrations of either PM₁₀, TSP or dust deposition that were above the appropriate goal or standard.

SPONTANEOUS COMBUSTION

The proposal allows for the existing issues of spontaneous combustion to be dealt with in accordance with the provisions of MCC's existing Spontaneous Combustion Management Plan. A significant component of the MCC's management of spontaneous combustion is that mining of the No. 1 Open Cut Extension will provide sufficient inert capping material to seal all areas within the existing and proposed mine areas in a manner that eliminates spontaneous combustion. The existing spontaneous combustion present in the underground workings will be eliminated by the removal of coal which acts as the fuel source.

FLORA AND FAUNA

Flora surveys of the study area identified a total of 157 species, which comprised of 106 natives and 51 exotics. Fauna surveys of the study area identified a total of 76 species, which comprised of 50 avifauna species, 10 reptiles species, 13 mammals and 3 amphibians species. Whilst no threatened flora species were observed within the study area, a total of two threatened fauna species were detected including the Grey-crowned Babbler (Vulnerable) and Eastern False Pipistrelle (Vulnerable).

An assessment pursuant to Section 5A of the *EP&A Act 1979* identified that there will be no significant impact on threatened species or their habitat either locally or for the Sydney Region. For both these species, particularly the Grey-crowned Babbler, it was determined that the removal of foraging and breeding habitat would represent a short to medium term impact that would be minimised in the long-term

site by extensive habitat rehabilitation and reconstruction works. Short-term impacts are likely to be minimised by the preservation and management of directly adjoining tracts of vegetation to the north and south of the study area.

SOILS

The soils of the area to be affected by the proposed No. 1 Open Cut Extension have been mapped and soils suitable for use in minesite rehabilitation have been identified. These soils will be recovered prior to mining operations occurring and re-spread over spoil piles to support the re-vegetation of the site. Wherever possible this action will take place without the storage of the soil and so preserve the viability of the microfauna and microflora contained within the soil.

9.2.2 Human and Community Environment

Relevant components of the human and community related environments were investigated during the course of the project development. The findings of these are summarised following:

INDIGENOUS AND NON-INDIGENOUS HERITAGE

Indigenous Heritage

An archaeological survey of the lands affected by the proposal located four Aboriginal occupation sites and two scarred trees. The proposal will entail the destruction of all archaeological material within the mining area. A total eight artefacts were located. All of the occupation sites are assessed as being of low archaeological significance. It has been recommended that Consents to Destroy for these occupation sites be obtained from the NPWS and that salvage of archaeological material be undertaken at the sites.

The two scarred trees were assessed to be of moderate archaeological significance and recommendations for the possible relocation of these trees have been made. One of the trees is located on the boundary of the proposed No. 1 Open Cut Extension and an assessment will be made as to whether the tree can be preserved.

Once of the recommendations of the Archaeological Assessment was that an Archaeological Management Plan (AMP) be developed for the lands to be affected by the proposed No. 1 Open Cut Extension. An important feature of the development of the AMP will be consultation between all of the following groups:

- NPWS;
- Upper Hunter Wonnarua Council;
- Wanaruah Local Aboriginal Land Council;

- Wonnarua National Aboriginal Corporation;
- Lower Hunter Wonnarua Council;
- MCC; and
- A qualified archaeologist.

Non-Indigenous Heritage

There were no items of non-Indigenous heritage located within the study area.

VISUAL

The proposed operations of the No. 1 Open Cut Extension will generally be totally screened from public view, particularly as overburden emplacements will be located in pit, below natural ground level. There will be use of inert material from the No. 1 Open Cut Extension in the rehabilitation of the No. 2 Open Cut which will afford, at times, distant views of these operations. Some of the initial excavations of Extension B will be visible from the south. These views will also be distant and operations will not be visible for an extended period of time.

TRAFFIC

There will be no adverse impact from this proposal upon users of the public road system. Employment levels will not be increased by the proposal and there will be no change in the travel routes used by MCC employees. Existing access to the New England Highway via Muscle Creek Road is adequate and safe.

Coal will continue to be transported from the site by road. Existing arrangements involving the use of the RCT to load coal to rail for export will continue. Coal for domestic power station use will continue to be road hauled to Macquarie Generation.

LAND USE

The land to be mined will be rehabilitated to a standard that will allow the pre-mining land use of cattle grazing to be undertaken as well as the provision of habitat corridors to link the vegetated areas of Bells Mountain and Skeletar Ridge. The final voids have the potential to be used as waste management facilities, but in the absence of any firm proposal the final voids of the No. 1 and No. 2 Open Cuts will be made safe during mine closure.

SOCIO-ECONOMIC

MCC currently employs 69 permanent employees with the use of, on average, 39 contracted and casual employees. This is not expected to increase as a result of the proposal. Most mine employees live in and around Muswellbrook Shire and the Upper Hunter District. The major impact from the mine extensions will be ensuring long term employment at MCC. The proposed development is anticipated to extend the life of the mine by approximately 10 years until 2013. Closure of the mine would have significant impacts in the Muswellbrook area as well as being felt in other LGAs in the Upper Hunter.

The proposed No. 1 Open Cut Extension will not only provide direct employment but will also provide indirect and induced employment in the areas surrounding the mine. Such employment opportunities would occur in the mine servicing industry, retail trade and employment related to the provisions of services (e.g. government, health care, childcare, community and recreational services). It has been estimated that 173 people are either directly or indirectly reliant upon MCC for employment, with almost 60% of those resident in the Muswellbrook district.

The coal mining industry is the major contributor to the local and regional economy. It also plays a significant role in state and national economies. MCC has made a number of estimates relating to economic statistics for the extended life of the mine which show MCC anticipates spending an average of \$10.0 million per year in wages, \$26.5 million on materials and services, contribute \$4.8 million to port and rail facilities and pay \$2.5 million in royalties to the NSW Government.

It is anticipated that approximately 65% of the coal produced by the extended mine will be exported. The extended mine will therefore improve Australia's balance of payments.

9.3 Ecologically Sustainable Development

9.3.1 General

This section describes Ecologically Sustainable Development (ESD) and how it relates to the proposal. The *NSW EP&A Regulation, 2000* lists four principles of ESD that must be considered in the environmental impact assessment process for the proposal. These principles are similar to those set down in the *Protection of the Environment Operations Act 1997*. They are:

- The precautionary principle;
- Social equity, including inter-generational equity;
- Conservation of biological diversity and ecological integrity; and
- Improved valuation and pricing of environmental resources.

9.3.2 The Precautionary Principle

The Intergovernmental Agreement on the Environment 1992 defines the precautionary principle as:

“Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation”.

Application of the precautionary principle to the No. 1 Open Cut Extension proposal needs to ensure that there has been:

- Careful evaluation of the proposal to avoid serious or irreversible damage;
- Predictable and transparent decision making for the proposal; and
- An assessment of consequences of various options undertaken.

The environmental consequences of the proposal have been documented in **Section 6** and specialist studies located in the Appendices. Scientific and engineering analysis of the environment and likely impact of the proposal has been thorough and has involved field surveys, computer modelling and indicative impact. This has allowed a reasonable degree of certainty as to the overall impact of the operation and feasible mitigation measures to be developed as presented in **Section 7**.

At all stages of project development there has been an open and transparent decision making process. Relevant government authorities and neighbouring residents potentially affected by the proposal were consulted during the preparation of the EIS (refer **Section 2**). This process enabled potential issues of concern with the initial proposal to be identified and attended to in the preparation of this EIS.

The proposal was developed from a number of options which looked at:

- Alternative methods and layouts in the mining of the resource;
- Production rates;
- Transport infrastructure; and
- Alternative uses of final voids.

The final proposal was selected on the basis that it achieved local community and company needs in an environmentally acceptable manner whilst ensuring economic viability. Descriptions of the alternatives considered are described in **Section 8**.

9.3.3 Social Equity including Inter-generational Equity

Social equity involves value concepts of justice and fairness so that the basic needs of all sectors of society are met and there is a fairer distribution of costs and benefits to improve the well-being and welfare of the community, population or society (DUAP, 1995). Social equity also includes concerns for intergenerational equity, which requires that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

The design of the proposal combined with the mitigation and rehabilitation measures will minimise the impact not only upon the current generation but also upon the future generations. Whilst the depletion of the resource will remove this opportunity for future generations, the current economic benefits generated by the proposal will benefit both. The construction and continued operation of the mine will deliver significant economic benefits to the local community and region through continuation of employment, income and output.

A key objective in project construction components and operation will be the management and investment in plant and equipment that minimises pollution and wastes whilst maximising economic benefits through energy efficiency. The implementation of this objective will help to ensure that the current standard of environmental amenity is maintained or improved for current and future generations.

9.3.4 Conservation of Biodiversity and Eco-integrity

Biodiversity (short for biological diversity) is the variety of all life forms – the plants, the animals and micro-organisms, the genes they contain and the ecosystems of which they are a part. Off-reserve conservation is that outside of reserves, national parks etc and has been considered in the preparation of this statement. Current laws that cover off-reserve lands include issues such as:

- The prevention of land degradation, particularly soil erosion and land salinisation;
- Nature conservation, including the protection of habitat;
- The conservation of native vegetation;
- Landscape conservation;
- Preservation of amenity; and
- The destruction of exotic pests, both plant and animal.

A description of the existing environment, likely environmental impacts and the measures proposed to minimise the impacts are described in **Sections 3, 6 and 7** respectively. All environmental characteristics, habitats and impacts that could be affected by the proposed No. 1 Open Cut Extension are described in this document.

9.3.5 Improved Valuation and Pricing of Resources

This principle is a component of intergenerational equity and addresses the concept that environmental factors should be included in the valuation of assets and services. Such valuations for this proposal include the concepts of:

- "Polluter pays" - that is those who generate pollution and waste should bear the cost of containment, avoidance or abatement;
- The cost of proposed mitigation methods and final landform rehabilitation costs being factored into the economic analyses to demonstrate the project is economically and environmentally viable;
- The cost of monitoring and reporting the environmental performance and management of the operation;
- Maximisation of re-use and re-cycling of all wastes and waste products; and
- Maximising the use of existing infrastructure and currently disturbed areas.

These concepts are considered at various points within the EIS, especially **Sections 5 and 7**.

9.4 Project Benefits

The proposed No. 1 Open Cut Extension proposal will result in significant benefits for Australia, the State, the Hunter Region and Muswellbrook Districts by:

- Continued employment in the coal industry;
- Continuing the flow-on effects of the operation into the local community;
- Utilisation of the existing infrastructure at MCC; and
- Provision of an assured method of treatment for land affected by 'pothole' subsidence and spontaneous combustion.

9.4.1 Economic Benefits

The main benefit of the proposed No. 1 Open Cut Extension in socio-economic terms is the continued employment afforded by MCC's mining operations. With flow-on employment the extended mine can be expected to generate or retain employment of additional people. Ongoing employment for a workforce that primarily comes from the Upper Hunter will assist in counteracting the social and economic decline currently being experienced by many rural and regional communities.

The \$ 7.3 million per year expected to be paid in wages and the expected \$4.8 million per year of flow-on income will largely remain in the local economy. Approximately 96% of the workforce currently reside in and around Muswellbrook and the Upper Hunter. Businesses in Muswellbrook and the Upper Hunter will benefit from the flow-on income.

On a yearly basis, the No. 1 Open Cut Extension is expected to generate \$ 0.3 million of replacement capital expenditure. The No. 1 Open Cut Extension expects to outlay an average of \$ 26.5 million per year for materials and services. It is anticipated that each year MCC's operations will contribute \$ 2.2 million in income tax to the Federal Government, \$ 2.5 million in royalties to the NSW government and provide \$ 4.8 million to rail and port facilities.

9.5 Project Justification

The No. 1 Open Cut Extension proposal is justified on the basis of its low environmental, social and cultural impact and strong economic and social benefits to the Upper Hunter region and beyond. Based on the current economic climate the No. 1 Open Cut Extension proposal represents the alternative to MCC's open cut operations being closed at the cessation of mining in existing coal leases which is anticipated to be 2005.

The justification for seeking approval for the No. 1 Open Cut Extension mining operations includes:

- Low environmental impact associated with the extension of activities on an existing mine site;
- Minimisation of impacts achieved by the use of existing mine site and transport infrastructure (eg. coal crushing facilities, stockpiles, workshops, stores, workers amenities and administration buildings);
- Provision of an assured method of treatment for land to the north of Coal Road that is affected by subsidence and spontaneous combustion;
- Provision of sufficient inert material to treat both the No. 1 and No. 2 Open Cuts in terms of the Spontaneous Combustion Management Plans;
- Continued employment opportunities in the coal industry, and
- Continuation of flow-on benefits for the Muswellbrook district and the regional, State and national economies.

As demonstrated in **Sections 9.2.1** and **9.2.2** the proposal will have minimal long term impacts upon the natural environment. The land affected by mining will be rehabilitated to a standard suitable for the pre-mining land use of cattle grazing and to provide habitat to link the vegetated areas of Bells Mountain and Skeletar Ridge.

Modelling of air quality, noise and water impacts have indicated that in all instances the proposal can proceed in a manner that does not result in an unacceptable impact. The mining operations will impact upon Indigenous archaeological sites. There is a need to obtain Consents to Destroy for known sites from NPWS. The process of addressing Indigenous archaeological sites will be with the involvement of the local Indigenous community and NPWS.

In a social and economic sense the justification of the proposal is that it will avoid the social and economic dislocation that is likely to follow the closure of the mine. The proposal addresses a mine life of 10 years compared to a life of 3 years if the proposal does not proceed. As well as the social disruption that unemployment creates, a loss of direct and indirect employment will place at risk the provision of services at a level currently enjoyed by Upper Hunter communities.

Closure of the mine would result in:

- The loss of 69 direct jobs;
- A total of 173 jobs foregone from direct, indirect and induced employment;
- A loss of jobs in Muswellbrook and Upper Hunter localities;
- A loss of \$26.6 million per year for materials and services;
- A loss of \$7.3 million in wages each year to residents of the above districts;
- A loss of \$4.7 million a year to Federal and State government revenue due to taxes and royalties and a loss of \$4.8 million for rail freight and port charges per year; and
- Other economic benefits foregone include expenditure on capital equipment.

As the No. 1 Open Cut Extension proposal represents the continuation of an existing mining operation with the maximum utilisation of existing infrastructure there are few impacts upon the natural or social environment. Those impacts that have been identified have been addressed by proposed measures to minimise the magnitude of effects on the environment. The most significant impact will occur if the proposed No. 1 Open Cut Extension does not proceed and MCC's open cut mining operations cease in 2005. In that event there will be a significant impact upon Muswellbrook and the Upper Hunter communities.

Upon the consideration of the above factors it is concluded that, provided the environmental management and monitoring measures identified are undertaken, the No. 1 Open Cut Extension proposal can proceed with minimal impact.