

# Executive Summary

## Project Overview

The Clermont Coal Mine Project (the "Project") involves the development and operation of an open cut coal mine producing 10 to 15 million tonnes per annum (Mtpa) of thermal coal for the export market.

The Project is located 10 kilometres (km) north of the township of Clermont, and approximately 15 km east of the existing Blair Athol Mine (BAM) in Central Queensland. The mine is located 300 km west-north-west of Rockhampton and 234 km south-west of Mackay.

The main elements of the Project are:

- a coal mine, including:
  - an open pit up to approximately 290 m deep and up to 2 km wide, producing between 10 to 15 Mtpa;
  - waste rock dumps to the north-west and south-west of the pit;
  - a mine water management system involving various water management dams; and
  - an advanced dewatering borefield to drawdown groundwater ahead of mining;
- heavy vehicle workshop and mine administration buildings;
- a Coal Preparation Plant (CPP) for washing higher ash coal and a Coal Washery Waste Disposal Area;
- a 13 km long overland conveyor – to transport the product coal from the mine to existing coal handling facilities at the BAM;
- an 8.5 km long channel diverting Gowrie Creek to the east of the pit;
- a temporary 350 bed Site Construction Village;
- a 14 km long road realignment, diverting the Gregory Highway and Peak Downs Highway to the west and north of the mine; and
- a 7.5 km long section of electricity transmission line on an existing powerline easement to provide the coal mine with power.

The current mine plan is based on a nominal production rate of 12 Mtpa, although actual production may vary between 10 and 15 Mtpa. A production rate of 12 Mtpa would give a mine life of approximately 17 years of coal production.

The current mine plan for the BAM has production ceasing in 2009. As the BAM production winds down, capacity in the BAM product stockpiles, stacker reclaimers and train loadout facilities will become available for use in the Project. Current plans provide for production at the Project to commence in 2008 and build up to full production as production from the BAM winds down.

## The Proponent

The Project Proponent is the Clermont Coal Joint Venture (CCJV), which comprises Queensland Coal Pty Limited (50.1%), Mitsubishi Development Pty Limited (34.9%) and EPDC Australia Pty Limited (15%). The Project manager is Rio Tinto Coal Australia Limited (RTCA). Both Queensland Coal and RTCA are fully owned subsidiaries of Rio Tinto Limited.

RTCA, formerly Pacific Coal, is one of Australia's leading mining organisations with a highly successful record in the development and management of world-class open cut and underground coal operations. In Queensland, RTCA manages the Blair Athol, Tarong, Hail Creek and Kestrel mines. In New South Wales, RTCA manages Coal & Allied's operations at Bengalla, Mt Thorley/Warkworth and Hunter Valley mines. RTCA is Queensland's largest producer of thermal coal, with total annual production in 2003 of 23 million tonnes.

Mitsubishi Development Pty Limited is wholly owned by the Mitsubishi Corporation. It is engaged in the production and sale of coal through joint ventures in New South Wales and Queensland (including the BHP Billiton Mitsubishi Alliance).

EPDC Australia Pty Limited is a wholly owned Australian subsidiary of J Power, which is a major Japanese electricity generator, and is also one of the joint venture partners for the BAM.

### **Needs and Benefits**

RTCA currently exports over 12 Mtpa of thermal coal from the BAM, which is nearing the end of its productive life. Coal from the Clermont deposit is similar in character and suited to the same markets that have traditionally been supplied by the BAM. The coal is required for export to continue to meet the expanding demands of the power generation industry in north-east Asia and elsewhere.

Without the Project, the Proponent would lose profitability and also the opportunity to gain the BAM's market share as its production winds down. The Government would lose revenue due to royalties, freight charges and taxes. Workers and support contractors would lose employment and income. Secondary support industries and service suppliers would also suffer from a reduction in demand for their services and a resulting reduction in income.

A major project such as the proposed Project would have a substantial impact on the economic environment. These impacts would be felt locally, and would also have large flow-on effects throughout the Mackay region (where the Project is located) and State-wide. These include:

- a capital investment of approximately AUD\$440 million;
- employment on the Project is expected to peak at approximately 565 jobs during the construction phase (including box-cut development);
- create employment opportunities for up to 450 people during operations;
- support for about 3,800 jobs throughout the Queensland economy, with over 3,000 in the Mackay region during operation;
- a contribution to Queensland's Gross State Product of \$505 million per annum;
- contribute \$100 million per annum to the State in rail freight and royalties; and
- adding value to Queensland's coal industry.

### **Stakeholders and Consultation**

Groups and individuals identified as stakeholders in this Project included;

- Department of State Development and Innovation (DSDI), advisory agencies and other state and federal agencies;
- Individuals potentially affected by the Project, i.e. residents whose properties are closest to the Project site;
- Mayor, councillors and Chief Executive Officer of the Belyando Shire Council;
- Clermont business and community members;
- The Wangan and Jagalingou Aboriginal people and the Gurang Land Council;
- Community Groups and Clubs (including the Clermont Rifle Club);
- State and Federal Members of Parliament with electorates covering the Project; and
- Surrounding communities within Belyando Shire.

Consultation was undertaken as part of the study process and helped to inform the social impact assessment. This consultation included:

- a community survey and newsletter;
- information and feedback tools such as a freecall number;
- information bulletins and meetings with the Groundwater Users Group; and
- public information sessions for the Clermont community, which were advertised in the local publication and the Central Queensland News.

RTCA is known as a company with existing commitment to the region. There is support for the Project based on the recognition of the economic and employment benefits that would result from the Project proceeding.

The key issues raised in the community consultation process were the concern over the impacts of the Project on the groundwater resources in the area, the fate of extracted groundwater surplus to the Project's requirements, the diversion of the highways and how they would affect travel times, the existing issue of rural depopulation and the possible positive outcomes and opportunities for the local community.

## **Approval Process**

The Project was declared a "significant project" by the Coordinator-General under Section 26 of the *State Development and Public Works Organisation Act 1971* (SDPWO Act). An Environmental Impact Statement (EIS) is required for a significant project. In addition, the Commonwealth Minister for the Environment and Heritage, in accordance with provisions in the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act), determined the Project constituted a controlled action under s. 75 of the EPBC Act. The Commonwealth has accredited the EIS process under the SDPWO Act. Consequently, this EIS satisfies the impact assessment requirements of all relevant State and Commonwealth statutes for this Project.

The key approvals required by the Project include:

- two new Mining Leases;
- amendment of conditions of an existing Mining Lease;
- an Environmental Authority (Mining Lease); and
- a water licence for the extraction of groundwater.

## **Environmental Management**

### **Land Resources**

Land use on the Clermont Mining Leases (MLs) area currently includes cropping, grazing and minor timber production. Surrounding land uses include grazing, cropping, coal mining, forestry, an airport (south of the mining lease) and a rifle range. The properties within Clermont MLs 1884 and 1904 are either Freehold or Leasehold tenures held by the Proponent, with smaller areas covered by a Stock Trucking Reserve and Road Reserves.

The Project will remove some areas of Good Quality Agricultural Land – 648 ha Class A land (crop land), 46 ha of Class B land (marginal crop land) and 1260 ha of Class C1 land (land suitable for improved pastures). The Class C1 land includes the Class A and Class B land. However, this is acceptable under the relevant State Planning Policy (SPP 1/92) as the Project represents an overriding benefit to the community. The post-mine land use suitability of the affected land will be reduced from the pre-mine land use suitability for grazing and rainfed cropping.

Soils in the area of the Project are a variety of cracking clays, solodics, non-cracking clays, red-brown earths and structured earths. Disturbed areas will be stabilised as quickly as practical through progressive revegetation to limit erosion. Erosion and sediment control measures will be employed, which are consistent with the practices described in the 'Technical Guidelines for Environmental Management for Exploration and Mining in Queensland'.

About 87% of waste rock to be mined is likely to be non-acid forming (NAF), 8% is likely to be potentially acid forming lower capacity (PAF-LC), and 5% is likely to be potentially acid forming (PAF). The mean Net Acid Production Potential (NAPP) of the PAF and PAF-LC samples was 10-18 kgH<sub>2</sub>SO<sub>4</sub>/t for Tertiary and Permian sediments respectively. About 51% of coal washery waste is likely to be PAF-LC, 44% is likely to be PAF, and 5% is likely to be NAF. The management of the PAF materials will be achieved by the selective placement and burial of PAF waste rock materials and the construction of an earth material cover over the final Coal Washery Waste Disposal Area.

A key objective for creating the post mine landform is to maximise in-pit dumping and minimise out of pit dumping. Approximately 500 Mm<sup>3</sup> of waste will be disposed of in-pit (below pit crest) and

approximately 215 Mm<sup>3</sup> will be external to the pit. Complete backfilling of the pit is not an economically feasible alternative.

The overriding principle for the rehabilitation program at the Project is that the land should be returned to a post-mine land use that will be stable, self-sustaining and require minimal maintenance. The post-mine land use for areas disturbed by mining at the Project will be a self-sustaining vegetation community using appropriate native tree, shrub and grass species based on site-specific trials. The obtainment of this land use will protect downstream water quality.

### **Native Title**

The Proponent has entered into discussions with the Gurang Land Council, the registered Native Title Representative Body relevant to the Project who assisted a group of Aboriginal people to prepare and register a Native Title claim for the area. This claim was lodged on behalf of the Wangan and Jagalingou people and was recently registered by the National Native Title Tribunal (Number QC04/6).

The Proponent accepts that in the long term there are Native Title interests to be addressed in relation to this project. Specifically, Native Title interests would need to be resolved before any extraction of coal took place on the Stock Trucking Reserve. If extraction of coal from the Stock Trucking Reserve is required, it will occur late in the mine life.

### **Surface Water**

The Clermont MLs are located on Gowrie Creek, which forms a part of the Wolfgang Creek catchment. The confluence of Gowrie Creek and Wolfgang Creek occurs approximately two kilometres downstream of the southern boundary of the Clermont MLs. Wolfgang Creek and Gowrie Creek are both ephemeral waterways that drain to Sandy Creek, Theresa Creek and into the Mackenzie River, one of the major rivers in the Fitzroy River basin.

Land uses in the catchment, including grazing and cultivation have contributed to the degradation of the waterways, which are highly disturbed aquatic ecosystems. The creeks are naturally very turbid, alkaline (pH ranging to 8.5) and have electrical conductivity (EC) values ranging up to 3 090  $\mu\text{S} / \text{cm}$  (in Wolfgang Creek). However, in general, the water quality of these creeks is suitable for irrigation or stock watering, although phosphorus, iron, copper and aluminium concentrations may occasionally be elevated beyond the relevant ANZECC (2000) stock water guideline levels.

The Project will be self-sufficient in water and have a site water management system comprised of a series of storages and sediment dams. Stored water will be preferentially used in the CPP and for dust suppression. Water balance modelling indicates that approximately 1 000 ML per annum of water will need to be released in an average of four events per annum (under median climatic conditions) from the Mine Water Dam to Gowrie Creek.

The impacts of the mining operation on downstream water quality will be minimised by:

- releasing from the Mine Water Dam only during times of flow in Wolfgang or Gowrie Creeks;
- releasing from the Mine Water Dam only if the resultant EC and pH in Wolfgang Creek does not exceed the defined criteria; and
- ensuring all runoff from disturbed areas passes through sediment dams before entering local creeks.

The EC level that will not be exceeded in downstream waters in Wolfgang Creek due to release from the Mine Water Dam has been set at 1 774  $\mu\text{S}/\text{cm}$  (the 80<sup>th</sup> percentile EC of Wolfgang Creek as measured by monitoring over the period 1981 to 2004). The pH range that will be maintained has been set at 6.0 – 8.5, the range monitored over the same period.

### **Groundwater**

The Project area is located within the Highlands Subartesian Area (DNRM, 2000). Groundwater investigations have been conducted at the Clermont Mining Leases and immediate surrounds dating back to the late 1970s. Overall groundwater movement is from the north-east to south, in accordance with topographic fall of the regional terrain.

Groundwater in the vicinity of the Project is typically intercepted within approximately 30 m below ground surface in Tertiary basalt units; between approximately 50 m and 110 m below the ground surface in Tertiary sediment units; and typically 100 m below ground surface for Permian sedimentary rock units. Water levels within bores installed in these units typically rise to within approximately 3-30 m of the ground surface.

A total of 161 groundwater bores have been identified by RTCA within a radius of 10 km of the Mining Leases boundary. Ninety-nine of the 161 bores are neighbouring landholder bores, of which 39 are not used. Eight of the 161 bores are existing RTCA groundwater extraction bores, and the remaining 54 are RTCA groundwater monitoring bores.

Advanced dewatering within the vicinity of the initial pit is necessary to draw groundwater levels down to the base of the Tertiary sediments prior to the onset of mining to reduce the risk of slope instability and ensure a safe mining environment.

During the mine life, the rate of groundwater removed from Tertiary sediments, Tertiary basalt and Permian aquifers will significantly exceed the rate that these aquifers can recharge from surrounding rock units. This will lead to a depression or “drawdown” of the water table.

The water quality of groundwater is suitable for irrigation and stock watering. No change in water quality during advance dewatering and mine operation (as compared to pre mining) is expected.

The advance dewatering borefield will produce more water than the Project needs. The volume of surplus groundwater is likely to be about 3 500 ML/a initially, decreasing to about 1 500 ML/a in the second half of mine life. Surplus groundwater from the advance dewatering borefield will be available for use by others in sustainable and feasible projects. However, potential use of the surplus is limited by the following factors:

- decreasing volume over the life of mine;
- interruption to supply, because mine demands would take priority in periods of dry weather;
- no surplus during extended dry periods;
- surplus would continue and need to be accepted in periods of wet weather to avoid release; and
- surplus will end with end of coal production.

If there are no additional users of the surplus groundwater, and all of the surplus was released to Gowrie Creek, it would travel about 15 km downstream to Sandy Creek. About 95% of the surplus volume released would end up recharging the Sandy Creek alluvial aquifer.

Groundwater quality meets ANZECC Stockwater Guidelines and ANZECC Long-term Irrigation Guidelines (except for total phosphorous). The median values of pH, total dissolved solids, total phosphorous, total nitrogen, ammonia and copper exceed ANZECC Aquatic Ecosystem standards. However, pH, total nitrogen, total phosphorous and copper in groundwater are lower than in surface waters in local creeks. Median EC is higher in groundwater than surface water but levels are within the range found in local creeks.

The groundwater drawdown impact of 2 m will progressively expand from within the Mining Leases boundaries (during advance dewatering) to cover parts of eight neighbouring properties by the end of mine operation. By end of mining, 24 landholder bores will be impacted. Properties would experience up to 25 m drawdown (as compared to pre-mining) close to the Mining Leases boundary, reducing to less than 2 m drawdown at a distance of approximately 3.75 km from the Mining Leases boundary.

After mining of the Clermont deposit is complete, groundwater extraction within the Mining Leases will cease. The regional groundwater system will begin immediately to re-adjust to the new aquifer conditions within the Mining Leases. Water levels/pressures within the regional aquifers will eventually attain a new equilibrium level (steady state). The new equilibrium groundwater system will have a different potentiometric surface than was present pre-mining due to the presence of a final void in the southern extent of the coal deposit and backfilled material having different hydraulic properties than the coherent rock units that existed pre-mining.

The potentiometric surface within areas that have more than 10 m of drawdown begin to recover immediately following cessation of mining. These areas are within and immediately surrounding the Mining Leases boundary. The initial rise in the potentiometric surface at these locations is related to the rise in water levels within the final void and backfilled areas of the pit. In contrast, outside the Mining Leases, the potentiometric surface will continue to drop up to 3.5 m following cessation of mining as the groundwater system adjusts to the new regional aquifer conditions. The slight drop in water level experienced outside of the Mining Leases (post-mining) occurs as a result of a flattening of the regional hydraulic gradient, as the groundwater system moves towards its new equilibrium state. Maximum aerial extent of groundwater drawdown surrounding the Mining Leases (based on 2 m drawdown contour) occurs 50 years after cessation of mining. Groundwater drawdown impacts of 2 m extend beyond the boundary of the Mining Leases by approximately 4.5 km to the north, 4 km to the east and 2.5 km to the south.

Water levels within regional aquifers are expected to recover from maximum drawdown to within approximately 50% of their pre-mining level within 140 years after cessation of mining.

After aquifers have attained new long-term equilibrium conditions the potentiometric surface within an area approximately 3.5 km to the north of the Mining Leases boundaries and 1.25 km to the east of the Mining Leases boundaries are expected to continue to show a residual drawdown of up to 3.5 m compared to pre-mining levels. The potential impacts on groundwater at long-term equilibrium are:

- water levels within 26 of the 30 affected landholder bores would recover to pre mining levels; and
- the potentiometric surface beneath parts of three properties surrounding the mining leases would have a permanent residual drawdown of more than 2 m compared to pre-mining levels. Maximum residual drawdown is predicted to be approximately 3.5 m.

Under the *Water Act 2000*, the Proponent is required to provide alternative water supplies for other water entitlement holders who would be affected by the dewatering. Discussions with landholders indicate that the provision of alternative supplies from deepened bores and/or replacement bores would be considered to provide a more secure and independent supply than would be achieved by pumping surplus groundwater from the mine to properties. RTCA will continue discussions with relevant landholders with a view to reaching mutually agreeable arrangements for the provision of alternative supplies throughout the mine life, and after mine closure. The quantity and reliability of the alternative supply arrangements will be at least equal to that required to maintain the existing productive capacity of each property.

Post mining water quality within all aquifers surrounding the Mining Leases is expected to remain the same as pre mining water quality.

## **Flooding**

In order to permit mining of the full coal resource, it is proposed to divert Gowrie Creek to the east of its current course to allow development of the pit. The proposed diversion is approximately 8.5 km in length and will replace an existing reach of creek of similar length. Two levee banks are also proposed to be constructed; one approximately 8 km in length on the western side of the diversion, and one about 1.5 km in length on the eastern side. The levee banks have been designed to contain a 1 in 100 year flood event.

The diversion creates higher flood levels east of the channel. The increase in flood depth outside the Mining Leases is minimal and downstream impacts on flood depth do not extend past the Gowrie Creek and Wolfgang Creek confluence. The upstream impacts on Gowrie Creek do not extend beyond the Mining Leases.

## **Flora and Fauna**

### **Terrestrial Flora and Fauna**

The vegetation on most of the eastern section of the Project site has a reduced conservation significance due to clearing for cropping and pasture improvement for grazing. The majority of the vegetation present on the western section of the Project site has been disturbed by grazing, timber harvesting, or small-scale mining, but a relatively high degree of integrity remains.

The development of the Project will result in the clearing of 702 ha of remnant vegetation. Of this total, 226 ha of ecosystems listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) will be cleared for the Project - 35 ha of bluegrass community (RE 11.8.11), 188 ha of Dawson gum woodland (RE 11.4.8) and 3 ha of Brigalow (RE 11.4.9)

Two species of conservation significance under the *Nature Conservation Act 1992* will be affected by clearing - about 1 ha of habitat of the endangered *Trioncinia retroflexa* (Belyando cobblers pegs) and about 31 ha of habitat of the vulnerable *Dichanthium queenslandicum* (king bluegrass).

About 176 ha of *Eucalyptus coolabah* will be cleared for the Project. This community is classified as 'Of concern' under the Queensland *Vegetation Management Act 1999*.

Potential impacts from the Project have been mitigated by locating infrastructure such as the Mine Water Dam and topsoil stockpiles away from the bluegrass communities, especially those containing Belyando cobblers pegs and king bluegrass.

The Proponent will implement off-set strategies for the unavoidable loss of 35 ha of the bluegrass community by compensatory establishment of 35 ha of bluegrass. Research has previously been commissioned to establish the means of conserving Belyando cobblers pegs through a better understanding of its reproductive biology and ecological processes. The Proponent will also consider strategies such as a nature conservation agreement or land covenant for the long-term protection and management of Belyando cobblers pegs and proposed bluegrass off-set planting at the time of relinquishment of the mining lease. Key dominant and understorey species from RE 11.4.8 will be included in the rehabilitation program on suitable soil types.

Mobile fauna such as birds and mammals will be able to move between areas of habitat. Less mobile, species such as some reptiles and amphibians would be subject to more constraint. The Apsley State Forest and corridor associated with Wolfgang Creek provide regional refuges for fauna and wildlife will be able to make use of these areas as the Project is developed and operated.

### **Aquatic Flora and Fauna**

The creeks in the vicinity of the Project are considered "highly disturbed" under aquatic ecosystem protection guidelines ANZECC (2000). No aquatic species protected under State or Commonwealth legislation were found. The loss of a section of Gowrie Creek and the creation of a compensatory diversion will not significantly affect aquatic flora and fauna at a local or regional level.

The discharge of surplus groundwater to Gowrie Creek below the pit would create a small permanent stream approximately 15 km in length. The water quality of this stream is likely to be similar to that in a natural pool that is drying up (senescing). The stream is likely to support filamentous algae (a consequence of the available nutrients), together with the species of fish and invertebrates currently associated with post-flood senescing pools.

Discharge of surplus groundwater to the creek would eventually cease. When it does, the permanent flow within Gowrie, Wolfgang and Sandy Creeks will also cease, and residual pools would dry up (as occurs naturally). Fish and other aquatic fauna will either die or aestivate (become dormant). The pattern of flow and water quality within the creek will return to pre-mine conditions, as will the ecology of those reaches of the creek. Dependent upon natural environmental influences, a complete return to pre-mine aquatic communities is expected.

The discharge of water from the Mine Water Dam coincident with natural flow events is unlikely to have any significant ecological impact downstream.

There are no ecosystems within the groundwater drawdown area that have an apparent dependency on groundwater. Hence, no effects are likely at the community or species level, and the vast majority of individuals are likely to remain unaffected.

### **Air Quality**

Contributors to particulate emissions from the surrounding environment include farming activities (in particular dust from cultivated areas), dust from the BAM and smoke from burning off. Dust is considered the only potential contaminant of air from the Project.

Air dispersion modelling of dust was conducted to predict the ground level concentrations of dust. The predicted levels of suspended and deposited dust are well within guideline levels at the nominated sensitive receptor sites – the nearby residences. Predicted dust levels (all inclusive of the background dust) were up to 80.7 µg/m<sup>3</sup> for the 24-hour PM<sub>10</sub> (respirable particulates less than ten micrometres in diameter), compared to the guideline level of 150 µg/m<sup>3</sup>; and up to 17.3 µg/m<sup>3</sup> for the annual PM<sub>10</sub> (compared to the guideline level of 50 µg/m<sup>3</sup>). Annual average Total Suspended Particulate (TSP) levels were predicted to be up to 48.4 µg/m<sup>3</sup> (compared to the guideline level of 90 µg/m<sup>3</sup>); and annual dust deposition levels were predicted to be up to 49.5 mg/m<sup>2</sup>/day (compared to the guideline level of 120 mg/m<sup>2</sup>/day).

## Noise

The average background (L<sub>90</sub>) noise levels at the nearest residences were 32 dB(A) during the day and night, and 39 dB(A) during the evening. Traffic on the Gregory Developmental Road and the Peak Downs Highway contribute to the existing noise environment. Background noise levels have been measured at below 30 dB(A), and at the Araluen residence regularly reached as low as 20 dB(A).

Noise modelling was conducted under typically adverse meteorological conditions and no residence was found to be exposed to noise levels in excess of 37 dB(A). This is higher than the current average daytime and night time background noise level in the local area, but below the current average evening background noise level. With respect to the potential for sleep disturbance at night, the predicted level is within the 35 to 40 dB(A) range for outdoor noise, which is consistent with the 30 dB(A) indoor noise level recommended by the World Health Organisation to minimise sleep disturbance. Noise levels at the nearest residence to the mine (Araluen) will decline over time as pit development moves further away to the south. Noise levels at the nearest residence to the conveyor (Old Blair Athol) will remain relatively stable throughout the Project.

The *Environmental Protection Regulation* airblast overpressure limit of less than 115 dBL for four out of five blasts can be achieved by varying blast specifications depending on the type of blast (box-cut and stripping blast) and distance to the nearest residence. Peak ground vibration from blasts with the standard blasting specification loading are predicted to be less than or equal to 1 mm/s at the nearest residence, well below the *Environmental Protection Regulation* limit of 10 mm/s.

## Cultural Heritage

A survey by Hatte (1994) found a total of 14 areas containing Aboriginal cultural material, consisting of ten scarred trees, one large stone artefact scatter and three isolated stone artefact find-sites. All of these were found within the Clermont MLs and were assumed to be of local significance.

The Proponent has formed the view that it does not intend to rely or act solely on the results of previous indigenous cultural heritage studies. Instead, it is the Proponent's intention that with the direct involvement and full co-operation of the appropriate Aboriginal groups and individuals, the Proponent will move to compile a comprehensive schedule of the Aboriginal cultural heritage values of the study area and negotiate an agreed management strategy for those values.

In moving to compile the schedule and strategy, the Proponent recognises this Project will proceed under the provisions of the *Aboriginal Cultural Heritage Act 2003*. This will require the Proponent to meet a duty of care with respect to Aboriginal cultural heritage that will be satisfied by the development of a Cultural Heritage Management Plan (CHMP).

There were no European cultural heritage sites within the Project area identified on the Register of the National Heritage, nor the Queensland Heritage Register. The area of the Clermont mining leases once supported a large grazing property known as Wolfgang station. Three European features were identified within ML 1884 by Hatte (1994):

- the homestead complex of Wolfgang station;
- a dry stone enclosure / stockyard / cemetery; and
- a possible coach staging post.

These three European features are not in the footprint of disturbance, according to the current mine plan. In addition, some parts of the homestead complex are in disrepair and some of the buildings formerly within the complex have been dismantled or relocated to neighbouring properties.

### **Scenic Values**

The Project lies within the flat rural plains with a regional landscape which is considered to be of medium visual quality, as all landscape elements, including landform, land cover, water form and features, are fairly common and not outstanding, unusual or distinctive in character.

The Project will alter the visual characteristics of the site from the outset, through the clearing of vegetation. Five residences are likely to see parts of the elevated waste rock dumps. The key measures to be undertaken to reduce the possible adverse impacts on the scenic values include the retention and establishment of vegetation, progressive rehabilitation and the appropriate placement and shielding of mine lighting.

### **Waste Management**

The major sources of general and regulated waste from the Project are:

- regulated waste such as hydrocarbon waste, detergents, solvents, batteries and tyres;
- general waste such as food scraps, paper, rags, cans and glass;
- scrap metal; and
- sewage effluent and sludge.

Colour-coded, signed bins will be used to segregate and collect food wastes, paper and recyclables. The bins will be located throughout the site to achieve maximum economic waste recovery. General wastes will be transported for disposal to the Clermont landfill. Regulated wastes will be taken off-site by licensed regulated waste transporter, and disposed off-site by a regulated waste receiver. Large earthmoving tyres will be buried on site.

### **Traffic and Infrastructure**

The Peak Downs Highway and the Gregory Developmental Road pass directly over the coal deposit and therefore both of these State-controlled roads require realignment. The north-east bound route along the Peak Downs Highway will lengthen by approximately 6 km, and cause travel times between Clermont and Moranbah to increase by approximately 4 minutes. For the north-west bound route from Clermont along the Gregory Highway / Gregory Developmental Road the increase in road length due to the realignment of the Gregory Highway is 200 m, and the effect on travel time will be negligible.

The proposed road realignments are not expected to cause any road safety issues. The existing roads will remain open to traffic without disruption while work is underway on the new alignments.

Overall, the construction and operational phase traffic generated by the Project is not expected to have a significant impact on the level of service on most of these roads. There is likely to be no net effect on pavement life of the roads.

The increase in demand for potable water in Clermont is likely to require upgrade of some components of the town water supply system, and the increased population in Clermont may require an upgrade of sewage pump station infrastructure. Part of the Telstra fibre-optic cable running along the western boundary of ML 1904 may have to be realigned with the diverted Gregory Highway. There will be no impact on infrastructure such as railways or port facilities.

### **Social Aspects**

The population of Clermont declined between 1996 – 2001 by 345 persons to 2 307 persons. Mining is the largest employment category in Clermont. This is directly related to the BAM. When the BAM winds down a major category of employment in the area would be lost if the Project is not developed.

The local population is likely to increase because of the Project, reversing the current decline in the population in the local area. The Project is likely to also result in changes in employment and occupational structure of the local area.

The Clermont area has five schools (all below capacity, but more staff may be required depending upon the population increase); a health service (likely to need additional nursing staff); a Police Station (currently at capacity); an Ambulance Service and Fire Brigade (both capable of managing a population increase). Aged care facilities are available, but all are at capacity, and there are waiting lists for aged accommodation. The Proponent is aware that aged accommodation in Clermont is at capacity and that demands on this type of accommodation may increase as an indirect result of the increase in population due to the Project.

The Proponent plans to establish a 350 room Site Construction Village on the Clermont MLs to accommodate the large majority of the non-local employees of contractors or the Proponent during the construction phase of the Project. The location and nature of this village, which will be completely self-contained, will not bring about changes to the demographics of Clermont.

Approximately 450 people will be employed during the peak of operations. While Clermont and the surrounding area would be the preferred place of residence for many employees, a significant number of employees on rosters would be likely to choose to maintain their home base in coastal communities or large regional centres. It is estimated that approximately 200 roster employees would be in this category. The Proponent proposes to establish a 125-room village in Clermont to accommodate some of the continuous roster workforce throughout the operations phase. A location within Clermont has yet to be selected for this village (the Township Village), therefore a description of the village and an assessment of its impacts are not included in this EIS. When a site has been selected, in consultation with Belyando Shire Council, the Proponent will submit a Development Application for the Township Village.

The Project would specifically seek to recruit local people for roles at the Project, including existing employees of the BAM, women, descendants of Traditional owners and other locals. This would maximise the opportunities for local people to gain personal and professional development from the Project. The Proponent would provide training to all employees, and there would also be a limited number of opportunities for people to be trained under traineeships and apprenticeships. The increase in direct and indirect employment in the region is expected to provide opportunities for local unemployed people.

The Proponent would continue to provide the community, including all service providers, with updates on the Project progress and timing and potential impacts of the Project. There will be opportunities for community representatives to discuss any lifestyle impacts they are experiencing.

## **Economics**

Current economic activity at Clermont is mostly related to its role as a service centre for the BAM, the rural hinterland around Clermont and for town residents. In 2001, around 900 persons were employed in the Clermont Township, with 19% in the mining industry and the balance spread across a wide range of industry sectors and occupations. The economy of Clermont has been flat over recent years.

Based on the results of economic modelling, the potential range of annual economic impacts during the construction period is estimated to be:

- \$298 million to \$413 million in Gross Output;
- \$142 million to \$202 million in Value Added;
- \$ 70 million to \$97 million additional Factor Income; and
- support for 3 000-4 340 jobs, with 1 858-2 732 in the Mackay region.

The economic modelling of the Project during operations suggests an annual impact of:

- \$908 million in Gross Output/regional turnover (\$857 million specifically in Queensland);
- \$505 million in contributions to Value Added;
- \$171 million in additions to Factor Incomes in the form of increased profits, wages and transfers; and
- support for almost 3 800 jobs throughout the Queensland economy, with over 3 000 in the Mackay region.

Such a large injection can create some short-term difficulties such as crowding-out of established economic trade, and competition for relatively scarce resources such as labour, housing and land.

The Project will directly employ approximately 450 people during operations, a net increase of about 250 over the current workforce at the BAM. This increase is likely to produce substantial benefits to the local economy.

Local and regional businesses contracted to provide goods and services to the Project, as well as people employed by those businesses, would experience financial benefits as a result of the Project development. Additional economic benefits will arise from the net increase in the population of Clermont due to the Project.

There is likely to be some upward pressure on rental and house prices, and demand for construction of new houses. The availability of serviced housing blocks and land for potential subdivision is such that land availability is not expected to constrain new housing construction.

### **Health and Safety**

The hazards and risks associated with the Project have been identified through the use of a Preliminary Hazard Analysis (PHA), which assisted in the identification of potential incident scenarios, potential consequences, prevention, protection and mitigation measures.

The risk profile for the proposed facility is generally “low” or “moderate” with the exception of safety risks from highwall rock fall and blasting, which have been assessed as “high” risk. It should be noted that these are assessed as high since there is significant energy involved and the controls can only reduce the probability of the event. These risks are common to all open cut mining operations and are subject to standard mining controls.

The Project will adopt a safety management system similar to those presently implemented throughout RTCA’s other operations. The system will adopt an integrated approach to risk management of the operations, recognising the hazards at all points in the operations and how these are controlled.

### **Environmental Management and Monitoring**

Commitments and proposed environmental authority conditions have been included in the relevant sections of the Environmental Management Overview Strategy.

The environmental monitoring will include rehabilitation success, surface water quality, groundwater quality and level, the stability of the Gowrie Creek diversion, aquatic ecology, dust deposition and noise. An Environmental Monitoring Manual (EMM) will be developed. The EMM will outline the Project’s environmental monitoring program (including monitoring sites, parameters and their frequency of measurement and make reference to monitoring procedures and records).